

INTERNATIONAL RESEARCH JOURNAL OF MANAGEMENT SOCIOLOGY & HUMANITIES



ISSN 2277 – 9809 (online)

ISSN 2348 - 9359 (Print)

An Internationally Indexed Peer Reviewed & Refereed Journal

www.IRJMSH.com
www.isarasolutions.com

Published by iSaRa Solutions

Artificial Intelligence in Fraud Detection and Financial Risk Management: Implications for Digital Corporate Governance in India

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Abstract

Artificial Intelligence (AI) is evenly increasing and transforming financial risk, fraud detection, management and corporate governance in digital financial systems. Similarly, rule-based and traditional monitoring approaches are becoming ineffective in responding to the scale available, sophistication and speed of contemporary financial fraud. This study focuses on how AI-enabled techniques, deep learning, including machine learning, natural language processing, explainable AI and automate decision-support systems, adding to fraud detection, market-risk monitoring, credit risk assessment, regulatory compliance and digital corporate governance in India. This study examines and adopts a PRISMA-informed structured literature review and conceptual synthesis approach. Initial pool of 214 records was identified from Scopus, Google Scholar and Web of Science using keywords related to artificial intelligence, RegTech, SupTech and corporate governance fraud detection, financial risk management,. After applying relevance structured, publication-period and peer-review criterion journals, 61 studies published between 2020 and 2025 were retained and re analysed for final qualitative synthesis and analysis. The review indicates that AI improves anomaly detection, and compliance reporting, real-time monitoring, predictive risk modelling; however, these benefits are accompanied by significant governance risks, including algorithmic bias, cyber vulnerability model opacity, data privacy concerns, and accountability gaps in finance. This paper proposes an integrated conceptual framework in which AI capabilities operate as a governance-enabling and supported infrastructure linking data-driven fraud control, board-level oversight and financial risk management. Study contributes to the literature by integrating previously fragmented discussions on AI, blockchain, financial risk and digital corporate governance, with MoU specific attention to the Indian regulatory and institutional context. It also Important the need for explainable AI, AI audit committees, independent model validation, data-protection safeguards and stronger digital competence among boards and regulators.

Keywords: Artificial Intelligence; Fraud Detection; Financial Risk Management; Digital Corporate Governance; Model Risk Governance; RegTech; SupTech; Explainable AI; India

1. Introduction

The rapid changes in Artificial Intelligence (AI) has significantly impacting the financial services industry, particularly in areas such as risk management, fraud detection, and corporate

governance. Further, there were rule-based corporate governance systems and manual monitoring schedule for financial institutions to identify fraudulent activities and risk management. Somehow, these approaches have proven insufficient in addressing the increasing complexity in large scale, and sophistication of financial crimes which is in the digital era. The amount of financial data has increased dramatically with the emergence of fintech platforms, digital transactions and online banking systems, requiring more sophisticated and scalable tools to analyze this data.

AI technologies, like machine learning, deep learning, and natural language processing, have emerged as impactful solutions, capable of doing analysing large volume datasets in real time and identifying hidden patterns in data set that indicative of fraudulent behaviour. It's Not only do these boost accuracy of detection in no time. But they also help and improve to proactively mitigate risk based on predictive analytics. AI reducing financial risk management by improving credit assessment, market forecasting, and operational risk monitoring.

In the era of corporate governance, AI is playing vital role in ensuring transparency, responsibility, accountability, and compliance with government regulations. In the world of business, AI is becoming much more important for ensuring that processes adhere to regulations of government and remain transparent and accountable. AI systems are supported by other technologies like the cloud, and blockchain, and big data analytics, which helps to form an digital ecosystem for finance management stakeholders. AI-powered systems are currently making an insignificant contribution to bolstering financial security measures and governance tools, and financial accuracy and literacy in developing countries like India, where digital financial adoption is growing quickly day by day. Though, despite the progress made, regulatory compliance, data privacy, ethical concerns, and continue to be significant concerns. While AI is holding significant promise for revolutionizing financial systems, there are key challenges that need to be focused to fully leverage its capabilities and rely in areas like risk management, fraud detection, and corporate governance. One of the main problems are the rise in financial fraud sophistication, and the fact that frauds in finance are more likely to evade the traditional methods of detection in real. Though AI systems can be more accurate at detecting fraud, their effectiveness is limited by data quality in large, model bias, and interpretability can be biased as well. Financial institutions and regulators struggle to trust and validate financial decisions because the black-box AI models enhances financial tools, especially those based on deep learning, machine learning are often lacking in transparency.

Similarly, the adoption of AI and machine learning in financial risk management systems brings in great complexities for researchers, such as model risk, dependency on AI systems only, and happening of potential system-wide vulnerabilities. Financial institutions and firms must balance the impact of automation with the need for human oversight to ensure reliability, responsibility and accountability. However, regulations simply tend to fall behind the development of technology and deep learning, and are not always clear in terms of rules or standards for compliance regulations.

From a corporate governance view standpoint, AI is doing implementations and introduces data privacy, ethics in finance, and accountability worries. There are also no standardised governance mechanisms for vital AI-driven systems that facilitate their implementation in large. Regulatory fragmentation, infrastructure constraints, and technological changes resistance are significant challenges in developing countries like India and other country. Focusing with these challenges, it is hard to understand the potential for effective use of AI in financial systems and how to mitigate the risks ultimately.

The use of AI in financial risk management and fraud detection has been a subject of extensive research in the literature, treated in isolation. There are numerous studies that show the effectiveness of machine learning, deep learning models in improving the accuracy of detection and the prediction. Financial risk management, on the other hand, highlights the use of AI for

improving credit risk evaluation, market research, and efficiency in operations. But there are no integrated researches that link these technological advances with corporate governance framework.

The majority of studies tend to take a piece-meal approach where either the technical aspects of the AI models are addressed, or the regulatory and governance aspects are examined without the other. There has been less emphasis on the way in which the two – AI fraud detection and risk management – work together to affect corporate governance results. Moreover, studies are lacking that bring the concept of digital transformation into the context of emerging economies like India, where digital transformation is fraught with challenges and opportunities.

Moreover, many available literature sources are either lacking a comprehensive conceptual framework that brings together AI technologies, financial risk management processes and governance or are using a narrow conceptual framework. The disconnect suggests a need for a comprehensive perspective of the complex and interdependent influence of AI in these areas. This study aims to explore and lights on the implications and integration of AI in financial systems which extend beyond the technical aspects and approach. While financial institutions depends on AI-driven systems, it is factual that the effects of such systems on governance frameworks, regulatory matters and transparency are assessed and analysed regularly. This study brings together risk assessment, fraud detection, and corporate governance, presenting a holistic view of how AI can impact financial ecosystems.

The importance of this research is that it can help to create a connection between technology and governance in highlighting AI as a governance enabling infrastructure, instead of a technical tool. This is especially true in India where fast-paced digitalisation and financial-inclusion efforts are transforming the financial landscape and adds valuable insights to the body of academic knowledge, in financial institute by offering a comprehensive conceptual framework and offering practical guidance for regulators, policymakers, and financial institutions in the responsible and effective use of AI.

Aim:

To explore the contribution of Artificial Intelligence in fraud detection and financial risk management; and to investigate the implications of Artificial Intelligence on digital corporate governance from an integrated conceptual perspective.

Objectives:

1. To examine the use of AI methods in detecting financial frauds.
2. To evaluate the role of AI in financial risk management processes
3. To understand the role of AI in company governance
4. Identify ethical and regulatory issues and implementation issues.
5. To build a conceptual framework connecting AI and fraud detection, risk management and governance.

The study has been broken down into sections so that it has a thorough examination of the subject. Background, problem statement, research gap and objectives of the study are provided in the introduction. A literature review of the current body of research on application of artificial intelligence in fraud detection, financial risk management, and corporate governance. The methodology section describes the research design and the research approach that was taken in the study. The following section proposes the conceptual structure to combine AI and financial and governance system. The findings are presented in the discussion section and critically analysed with a focus on practical implications. Lastly, a summary of the main findings and implications and ideas for future study are presented.

2. Working Definition

2.1 Artificial Intelligence (AI)

Artificial Intelligence (AI) is the branch of computer science that lets machines perform tasks that involve human-like intelligence, like pattern recognition, prediction, and decision making, using computational systems including machine learning, deep learning and natural language processing. The AI in this study is defined as a data-driven infrastructure for analyzing financial processes that improves financial monitoring, fraud detection, and governance.

2.2 Financial Fraud Detection

Financial fraud detection involves a set of analytical methods and systems that enable the detection, prevention, and response of financial frauds in the shape of transaction fraud, identity theft, and accounting manipulation. In this research, it is particularly used to describe anomaly detection systems powered by AI, which are set to detect anomalies and behavioural deviations in real-time financial data.

2.3 Financial Risk Management

Financial risk management is the systematic process of identifying, assessing and mitigating financial risk, which comprises credit risk, market risk and operational risk. For this study, AI models are used in financial institutions to increase the precision of their forecasts, automate their risk evaluation process, and facilitate proactive decision-making.

2.4 Corporate Governance (Digital Governance Context)

Corporate governance is the governance of organisations, the rules and practices by which they are governed and directed and the processes by which they are governed. This study defines digital corporate governance as the use of AI and digital technology to improve transparency, accountability, regulatory compliance and decision making in the financial sector.

2.5 Explainable Artificial Intelligence (XAI)

XAI is a type of AI that generates comprehensible and coherent results, allowing stakeholders to understand the logic behind the AI's decision making. In this study, XAI is viewed as a system that accountability, promotes trust, and regulation of AI-based financial systems.

2.6 RegTech (Regulatory Technology)

RegTech is the use of cutting-edge AI and big data technologies to enhance regulatory compliance operations. For this study, it is considered as a system which automates the process of compliance monitoring, reporting, and risk management in financial institutions using artificial intelligence.

2.7 SupTech (Supervisory Technology)

SupTech is the application of technology by various regulators to strengthen the regulation and supervision of financial institutions in recent year. For the purpose of this study, it is understood to be AI-powered machines supervisory systems that allow for real-time data monitoring, data-driven regulations, and more effective enforcement.

2.8 Cloud Computing

Cloud computing is the provision of computing services like storage, processing power and analytics over the Internet. For the purpose of this study, it is described as an infrastructure that is scalable to enable the deployment of AI, real-time analytics, and processing massive volumes of financial data.

2.9 Financial Inclusion

Financial Inclusion is the availability and accessibility of financial services to under-served and unbanked populations. For this study, it is identified as the application of AI-based systems that create information symmetry, credit access and enhance financial services for marginalized groups.

2.10 Algorithmic Bias

Algorithmic bias is the discrimination that is built into the algorithms, as a result of biased training data or biased design. In this study, it is defined as a risk that comes from ethics, which could result in unfair financial decisions, and needs to be monitored in the governance process.

2.11 Data Privacy

Data privacy is when personal data and sensitive information are kept safe from unauthorised access and misuse. In this research, it is defined as the regulatory and ethical obligation to secure the management of financial information in AI-based systems.

2.12 Theoretical Foundation

The Agency Theory, Risk Governance Theory and the Technology-Organisation-Environment (TOE) perspective are the foundations for this study. Agency Theory is relevant because it can help improve information symmetry between the managers, boards, auditors, regulators and shareholders due to AI powered monitoring. In traditional systems of governance, monitoring is usually done at regular intervals and relies on reports that come after the fact. While AI tools like anomaly detection can transform governance from a reactive to a proactive process, continuous auditing and real-time dashboards can help shift the burden from retrospective to real-time review. On the other hand, algorithmic systems can give rise to new agency problems if the board does not know what is going on in the algorithms, what their assumptions are, what limitations and what biases they contain. So, AI cannot solve governance issues by itself, but rather it's changing the form of governance that is required.

The theory of Risk Governance is applicable to this research since AI transforms the financial institutions risk identification, assessment, communication, and management. AI driven risk models can bolster early-warning systems by identifying credit, market and operational risks earlier. But AI brings with it new risk scenarios, such as model risk, cyber risk, data quality risk, algorithmic transparency risk, and responsibility risks for AI decisions. Thus, independent model validation, explainable decision processes, robust audit trails, clear escalation procedures and ongoing human oversight are key to effective AI-based risk governance.

This is where the TOE explains why there are differences between the financial institutions and the adoption of AI. Technological factors are data quality, algorithmic capability, cloud infrastructure and cyber security. Organisational factors are board literacy, skilled personnel, culture of internal control, culture of the board. Factors affecting the environment are regulatory pressure, competition, the development of fintech and data protection requirements. These theories are combined to look at AI as a governance structure linking fraud detection, financial risk management and digital corporate governance outcomes.

3. Literature Review

3.1 AI in Financial Fraud Detection

AI has revolutionized financial fraud and risk detection with its ability to adapt, scale, and leverage data for detection of fraud where rule-based systems fall short apart. Traditional fraud and risk detection methods that are simply based on static rules and manual oversight identification may fail to identify the advanced and evolving fraud schemes regularly. Moreover, AI-powered methods such as deep learning (DL), machine learning (ML), and natural language processing (NLP), can shift through vast amounts of data to uncover the subtle patterns and anomalies to make them much more effective at detection (Jnr et al., 2024; Nwankwo et al., 2024; Kumar et al., 2024). In the financial sector credit card processing, accounting, insurance and banking, supervised learning models and have proven to be broadly

applicable in India. As models can continuously learn from transactional data and adapt to seek changes new techniques, allowing for real-time fraud detection tools (Adelakun et al., 2024; Hafez et al., 2025). Recently deep learning architectures, such as recurrent neural networks (RNNs) and long short-term memory (LSTM) models, have shown impulsive technique and capabilities in discovering temporal data patterns in transaction data enabling the identification of fraudulent transactions at an early stage in AI (Johora et al., 2024).

AI models can also shift through the historical data to identify patterns, graphs and anomalies that not to be immediately apparent to humans, and machines learners, which minimizing false alarms and response delays (Ismaeil, 2024; Islam & Rahman, 2025). However, predictive analytics can help prevent fraud detection before it happens, as cybercrime tactics become more sophisticated in recent year (Veldurthi, 2025).

There are still some challenges that remain with AI. Algorithmic biasness is still a significant issue in recent year, as biased training data can result in biased outcomes simply in fraud detection. Similarly, there are concerns about the lack of interpretability in complex AI models, such as those using deep learning and machine learning (Jnr et al., 2024). The situation of AI systems for financial institutions is also complicated by data privacy concerns and regulatory compliance requirements, which require strong governance frameworks and structures (Islam & Rahman, 2025).

3.2 Financial Risk Management using AI and data analytics.

AI has become a game-changer in financial risk management that enhance the predictability of risk, decision-making and operational efficiency in credit, market and operational risk among others AI tools. Traditional risk management systems make static assumptions and anomalies that use incomplete data AI models leverage data and sophisticated analytics to offer dynamic risk evaluation technique (Xu et al., 2024; Shen, 2024).

Finance companies leverage machine learning and deep learning algorithms to analyze vast amounts of data in large to uncover and intricate relationships between risk factors. These capabilities holds not only complement but the credit risk assessment but also can help to better predict the default system probability and facilitate better lending decisions to stakeholders (Arsic, 2021). AI can facilitate scenario analysis and stress testing by simulating various economic outcomes allowing for proactive risk mitigation measures regularly (Fritz-Morgenthal et al., 2021).

Explanatory Artificial Intelligence (XAI) has become vital financial institutions having to ensure adaptability and transparency that adhere to regulatory norms regularly. By giving insights into the model's decision-making process in XAI techniques can improve trust and enable regulatory approval (Misheva et al., 2021). Similarly, incorporating AI and large language models (LLMs) has expanded the capabilities of risk management and fraud detection to further automate data analysis and enhance reporting efficiency (Joshi, 2025).

The reliability of AI systems in real can be compromised by problems with data quality, data accuracy, over fitting, and ethical issues. Similarly, overreliance on automated models could lead to less human oversight in conclusions, which may lead to higher systemic risk (Daiya, 2024).

3.3 Generative AI and Regulatory Compliance

Generative AI has created a new opportunities and risk challenges for financial risk management. Generative models can streamline all compliance tasks by providing real-time

regulatory insights framework, automated tool reporting, and better understanding of intricate financial information (Lagasio et al., 2025; Haeri et al., 2025).

These models can be used to make predictions, which helps financial institutions to prepare for regulatory changes with adjustment and their strategies accordingly. Though generative AI systems offer significant potential benefits to analyse the data, they also come with certain challenges, including the risk of bias, hallucination, and transparency issues that can pose risks if not managed effectively (Bhattacharyya et al., 2025). Reason being, there is a need for stronger model risk management practices, such as model testing, validation, and human oversight, to guarantee safe deployment (Joshi & Satyadhar, 2025).

To address these risks assessment bodies and regulatory authorities have placed a growing emphasis on the importance of explainability and ethical use of artificial intelligence (AI) in data analysis. To tackle these all risks, regulators are increasingly focusing on the need for explainability and ethical AI use. Governance mechanisms like algorithm audits and accountability frameworks structures are important for maintaining trust and ensuring compliance in AI systems that operate in financial systems (Essien et al., 2025).

There is a lack of transparency in corporate governance systems in India recently. Indian corporate governance systems are opaque in real.

Digital technologies and AI integration have brought a fundamental change in corporate governance practices in India currently. AI, big data and blockchain, technologies have improved transparency, responsibility, accountability, and efficiency in the decision-making process. The Companies Act 2013 has further fixes governance structures especially in the field of financial reporting and compliance (Sharma & Singh, 2023).

AI is impactful on corporate governance by facilitating real-time monitoring process, fraud detection, and risk assessment measures. Governance inefficiencies are pertains particular that being tackled by blockchain technology, which offers secure and transparent transaction records (Kanojia, 2023). Despite the adoption of these AI, machine learning technologies, it is not uniform because of the ambiguity of the regulations, issues of cybersecurity is the vast challenge for government, and the unwillingness of stakeholders to change (Aneja & Gavrilenko, 2025).

3.5 Role of Big Data and Cloud Computing

Big data, Machine learning and cloud computing are essential enablers for AI systems as they support the infrastructure for processing the large amounts of data AI models. Cloud platforms usually provide scalable and cost-effective resources which enable real-time analytics and enhance the efficiency of AI applications (Jamaludin et al., 2024).

Leveraging big data analytics, AI becomes more effective in deriving insights from a wide range of data, boosting the accuracy and reliability of predictive models and decision-making processes (Hassan & Zeebaree, 2025). Similarly, both combination of cloud and AI allows for the use of other advanced technologies such as federated learning and edge computing, which process data at the edge of the network without transferring it to a central cloud in real time (Murthy et al., 2025).

However, AI-powered big data analytics is essential tools for improving cybersecurity for identifying threats in real time (Middae, 2025).

3.6 Ethical and Legal considerations

Though AI becomes more prevalent in finance, and various industry there are major ethical and legal issues surrounding accountability, fairness, transparency and privacy of data. One of the significant challenges is algorithmic biasness, which can result in discriminatory practices in lending and fraud detection with risk (Agu et al., 2024).

Maintaining transparency and explainability is vital for fostering trust among stakeholders. The intricate nature of AI models poses a challenge in understanding how they make decisions (Thakur & Sharma, 2024). Similarly, privacy concerns come into because of the particular amount of data utilized in AI systems for personal use, which requires powerful data protection measures (Wang, 2024). The current regulatory systems may not be sufficient to tackle these problems but, there is a need for improved structured governance frameworks that encourage ethical use of AI (Ridzuan et al., 2024). Proposed solutions involve algorithm ethical guidelines, audits, and the involvement of multiple stakeholders for responsible use of AI (Uzougbo et al., 2024).

3.7 RegTech and SupTech

Regulatory technology (RegTech) and supervisory technology (SupTech) are changing the financial regulation through the power of AI and data analytics to boost compliance burden insight and oversight. Though RegTech can help financial institutions with compliance automation, lower costs, and efficient risk management, SupTech can help regulators to monitor and enforce in real-time (Grassi&Lanfranchi, 2022). The technologies help to share and automate data, hence making regulatory work more transparent and efficient (Arner et al., 2022). Despite this, obstacles like operational hurdles, regulatory complexity, and cybersecurity concerns persist as hurdles for adoption (Bagherifam et al., 2025).

3.8 AI and Financial Inclusion

AI can play a vital role in improving financial inclusion by tackling the challenges faced by inaccessible financial markets. AI can also use alternative data sources to make more accurate credit decisions and alleviate information asymmetry, which increases access to credit for small businesses and low-income people (Mhlanga, 2020).

AI-driven solutions like chatbots and virtual assistants enhance customer engagement and financial education, especially in rural areas (Okeke et al., 2024). Cross-country research suggests that the adoption of AI is correlated with an increase in financial inclusion, thus contributing to economic development (Subramaniam et al., 2024). But data privacy, algorithmic bias, and infrastructure challenges need to be overcome to unlock the potential of AI to drive financial inclusion (Adeoye et al., 2024).

3.9 Literature Matrix

Author(s) & Year	Domain	Methodology	Key Findings	Limitations / Research Gap	Contribution to Current Study
Jnr et al. (2024)	Fraud Detection	Review	AI enhances fraud detection accuracy and scalability	No empirical validation	Establishes foundation for AI-based fraud systems
Nwankwo et al. (2024)	Fraud Detection	Systematic Review	Real-time fraud detection using adaptive ML models	No governance integration	Supports dynamic fraud detection capability
Kumar et al. (2024)	Fraud Detection	Conceptual/Review	ML/DL outperform traditional rule-based systems	Lack of cross-domain integration	Highlights technological superiority of AI
Adelakun et al. (2024)	Fraud Detection (Accounting)	Case-based	AI improves anomaly detection in financial records	Limited generalizability	Provides sector-specific validation
Hafez et al. (2025)	Fraud Detection	Systematic Review	Deep learning improves detection performance	Limited explainability	Supports advanced AI model usage
Ismaeil (2024)	Fraud Detection	Conceptual	Reduces false positives, improves efficiency	No empirical backing	Strengthens performance argument
Islam & Rahman (2025)	Fraud Detection	Review	Improves detection but raises transparency concerns	Weak governance linkage	Connects performance with ethical issues
Veldurthi (2025)	Fraud + Ethics	Conceptual	AI introduces bias and ethical risks	No structured framework	Supports ethical dimension
Xu et al. (2024)	Risk Management	Review	AI improves predictive accuracy and decision-making	No governance linkage	Supports risk analytics capability
Shen (2024)	Risk Management	Analytical	Enhances operational efficiency and forecasting	Limited ethical discussion	Supports performance improvement
Arsic (2021)	Risk Management	Conceptual	AI improves credit risk assessment	Outdated empirical base	Provides theoretical grounding
Fritz-Morgenthal et al. (2021)	Risk + XAI	Conceptual	Explainable AI enhances trust and compliance	Limited empirical support	Critical for governance integration
Misheva et al. (2021)	Risk + XAI	Technical	Improves transparency in credit models	No fraud integration	Supports explainability requirement

Joshi (2025)	Generative AI	Review	LLMs improve risk analysis and reporting	Requires human oversight	Introduces emerging AI perspective
Daiya (2024)	Risk Management	Conceptual	AI improves decisions but increases dependency	No governance perspective	Highlights automation risks
Lagasio et al. (2025)	Gen AI & Compliance	Conceptual	Enhances regulatory reporting and analysis	Hallucination risk	Supports compliance automation
Haeri et al. (2025)	Gen AI	Technical	Improves regulatory information retrieval	Limited real-world testing	Adds technical depth
Bhattacharyya et al. (2025)	Model Risk	Analytical	Identifies risks (bias, hallucination)	No empirical validation	Strengthens risk governance need
Essien et al. (2025)	AI Governance	Conceptual	AI enables compliance automation	No implementation model	Supports governance framework
Joshi & Satyadhar (2025)	Model Risk Mgmt	Review	Emphasizes validation and oversight	No integration model	Reinforces governance necessity
Aneja & Gavrilenko (2025)	Corporate Governance	Conceptual	Digital tech improves transparency	Limited empirical evidence	Core governance context
Sharma & Singh (2023)	Governance (India)	Empirical	Improves firm performance	Limited AI integration	Policy relevance
Kanojia (2023)	Blockchain Governance	Conceptual	Enhances transparency	Regulatory uncertainty	Complements AI governance
Sharmin & Chowdhury (2025)	E-Governance	Comparative	Improves accountability	No AI linkage	Broader governance understanding
Jamaludin et al. (2024)	Big Data & Cloud	Technical	Cloud enhances AI scalability	No governance link	Infrastructure support
Hassan & Zeebaree (2025)	Big Data	Review	Improves predictive analytics	Limited financial focus	Supports data-driven AI
Murthy et al. (2025)	Edge AI	Technical	Enables real-time processing	Complex deployment	Supports real-time fraud detection
Middae (2025)	Cloud Security	Conceptual	AI improves threat detection	Limited scope	Supports cybersecurity dimension

Agu et al. (2024)	Ethics	Review	Bias affects fairness in AI systems	No governance framework	Ethical foundation
Thakur & Sharma (2024)	Ethics	Conceptual	Need for explainability	No empirical support	Supports governance relevance
Uzougbo et al. (2024)	Legal	Conceptual	Legal ambiguity in AI accountability	No solution model	Highlights regulatory gap
Ridzuan et al. (2024)	Regulation	Review	Regulation lags innovation	No integration model	Policy relevance
Wang (2024)	Privacy	Conceptual	Data privacy concerns critical	Limited financial depth	Compliance dimension
Mhlanga (2020)	Financial Inclusion	Conceptual	AI improves credit access	Limited empirical validation	Social impact
Adeoye et al. (2024)	Inclusion	Review	Reduces information asymmetry	Infrastructure issues	Development relevance
Subramaniam et al. (2024)	Inclusion	Empirical	AI improves inclusion globally	No governance link	Broad impact
Okeke et al. (2024)	Inclusion	Case-based	Improves accessibility via AI tools	Limited scalability	Practical application

The literature shows that AI can greatly improve fraud detection and financial risk management by offering a more accurate, scalable, and predictive approach to the problem; however, there are still many overlapping areas of study across both the technological, regulatory, and governance realms. There is a distinct absence of systems that link the outcomes of AI-driven financial systems with those of corporate governance, especially in emerging economies like India. This study aims to fill this gap by formulating a common conceptual model that connects the dots between AI, fraud detection, risk management, and governance.

4. Research Gap

Existing scholarship has examined AI-enabled fraud detection, financial risk management and digital governance, but these domains are often studied separately. Technical studies generally focus on model accuracy, anomaly detection and predictive performance, while governance-oriented studies focus on transparency, accountability, board oversight and regulatory compliance. As a result, limited attention has been given to how AI-enabled fraud detection and financial risk management jointly influence corporate governance outcomes.

A second gap concerns the emerging-economy context. Much of the available literature is either global, technology-centred or based on developed financial markets. India presents a distinctive context because digital financial adoption, fintech expansion and regulatory digitisation have progressed rapidly, while institutional readiness, board-level AI literacy, data-governance capacity and model-risk oversight remain uneven across organisations.

A third gap relates to the conceptual treatment of AI. Prior studies frequently present AI as a predictive or operational tool, but relatively few conceptualise it as a governance-enabling infrastructure. In AI-driven financial systems, fraud detection models, credit-risk tools, compliance analytics and real-time dashboards do not merely support operations; they influence accountability, oversight, risk reporting and strategic decision-making. Therefore, there is a need for an integrated conceptual framework that links AI capabilities, fraud detection efficiency, financial risk management effectiveness and digital corporate governance outcomes.

This study addresses these gaps by synthesising recent literature and proposing a unified framework in which AI capabilities influence governance outcomes through improved fraud detection, risk analytics, regulatory compliance and explainable decision-support mechanisms.

5. Methodology

This study adopts a PRISMA-informed structured literature review and conceptual synthesis approach. The purpose of the review is not to conduct statistical meta-analysis, but to identify, evaluate and synthesise recent academic evidence on the role of AI in fraud detection, financial risk management and digital corporate governance. The design is appropriate because the field is interdisciplinary and contains conceptual, review-based, empirical and technical studies across finance, accounting, governance, information systems and regulatory technology.

5.1 Data Sources and Search Strategy

The literature search was conducted using Scopus, Web of Science and Google Scholar. The search focused on peer-reviewed academic literature published between 2020 and 2025. The search terms were developed around four core constructs: artificial intelligence, fraud detection, financial risk management and corporate governance. Boolean operators were used to combine related terms and improve both relevance and coverage.

Database	Search String	Purpose
Scopus	TITLE-ABS-KEY(("artificial intelligence" OR AI OR "machine learning" OR "deep learning" OR "explainable AI" OR "generative AI") AND ("fraud detection" OR "financial fraud" OR "anomaly detection") AND ("financial risk management" OR "credit risk" OR "market risk" OR "operational risk") AND ("corporate governance" OR "digital governance" OR RegTech OR SupTech OR "model risk governance"))	To identify peer-reviewed interdisciplinary studies.
Web of Science	TS= (("artificial intelligence" OR AI OR "machine learning" OR "deep learning" OR "explainable AI") AND ("fraud detection" OR "financial fraud" OR "risk management") AND ("corporate governance" OR "regulatory compliance" OR RegTech OR SupTech))	To cross-check high-quality indexed journal literature.
Google Scholar	"artificial intelligence" "fraud detection" "financial risk management" "corporate governance" India; "AI" "RegTech" "SupTech" "financial services"; "explainable AI" "credit risk" "governance"	To capture additional relevant studies and policy-linked academic work.

5.2 Inclusion and Exclusion Criteria

The inclusion and exclusion criteria used for screening are presented in Table 2.

Criterion	Inclusion Criteria	Exclusion Criteria
Publication period	Studies published from 2020 to 2025.	Studies outside the selected period, unless used as seminal theoretical background.
Document type	Peer-reviewed journal articles, systematic reviews, conceptual papers, empirical papers and high-quality technical studies relevant to AI in finance.	Non-academic blogs, opinion pieces, non-verifiable sources, duplicate records and unrelated technology papers.
Language	English-language publications.	Non-English publications unless directly relevant and properly translated.
Topical relevance	Studies addressing AI, ML, DL, XAI, GenAI, fraud detection, risk management, RegTech, SupTech, corporate governance or financial inclusion.	Studies discussing AI without connection to finance, fraud, risk, compliance or governance.
Contextual relevance	Global studies and India/emerging-economy studies relevant to digital financial governance.	Studies with no transferable relevance to financial institutions or governance.

5.3 Screening and Selection Procedure

The initial database search yielded 214 records. These records were screened in three stages: title screening, abstract screening and full-text eligibility assessment. During title screening, studies unrelated to AI, financial services, fraud detection, risk management or governance were removed. During abstract screening, studies lacking conceptual or empirical relevance to the research objectives were excluded. During full-text assessment, studies were retained only if they directly contributed to at least one of the core themes of the study: AI-enabled fraud detection, AI-enabled financial risk management, model risk governance, RegTech/SupTech, digital corporate governance or ethical/legal concerns. After completion of the screening process, 61 studies were selected for final qualitative synthesis.

5.4 Data Extraction and Coding

A structured data-extraction sheet was prepared to record the author(s), year, domain, research method, AI technique, financial application, governance implication, key findings and limitations of each selected study. The extracted studies were coded thematically. First, open coding was used to identify recurring concepts such as anomaly detection, predictive modelling, explainability, algorithmic bias, regulatory compliance and board oversight. Second, related codes were grouped

into broader categories: fraud detection efficiency, financial risk management effectiveness, regulatory and compliance mechanisms, ethical/legal concerns and governance outcomes. Finally, these categories were synthesised into the proposed conceptual framework.

Theme	Codes Included	Use in Framework
AI capabilities	Machine learning, deep learning, NLP, generative AI, XAI, network analytics	Independent technological layer
Fraud detection efficiency	Anomaly detection, transaction monitoring, false-positive reduction, real-time alerts	Operational mechanism
Financial risk management effectiveness	Credit risk, market risk, operational risk, stress testing, early-warning signals	Risk-control mechanism
Governance mechanisms	Transparency, accountability, auditability, compliance monitoring, board oversight	Governance pathway
Risks and safeguards	Bias, opacity, privacy, cyber risk, model validation, human oversight	Moderating/contextual concerns

5.5 Quality Appraisal

To improve methodological transparency, each selected article should be assessed using a simple quality-appraisal rubric. The appraisal should consider relevance to the research objectives, clarity of methodology, credibility of source, contribution to theory or practice and explicit discussion of limitations. Studies that scored low on relevance or methodological clarity should be used cautiously and should not form the basis of major claims.

Quality Criterion	Scoring Logic
Relevance	High = directly addresses AI and finance/governance; Medium = partially relevant; Low = weak connection.
Methodological clarity	High = clear method and evidence; Medium = partially clear; Low = unsupported or purely descriptive.
Source credibility	High = indexed peer-reviewed journal or recognised publisher; Medium = emerging journal; Low = unclear quality.
Contribution	High = strong conceptual/empirical contribution; Medium = limited but useful; Low = repetitive.
Limitations	High = limitations stated clearly; Medium = partially stated; Low = not stated.

5.6 Methodological Limitations

The review is structured and transparent but is limited. First, the study is based on secondary literature and there is no empirical testing of the proposed framework. Second, Google Scholar also expands coverage and could make the reproduction of the results difficult due to the time-varying nature of the results. Thirdly, the review is based on literature published between 2020-2025, which elevates the author's review, but may not include older seminal literature. Fourth, in the case of a search log that does not maintain detailed reasons for exclusion, caution is urged in interpreting the results from stage-wise exclusion counts. These restrictions are recognized and open for empirical test in the future.

5.7 PRISMA Diagram

Identification of studies via databases and registers

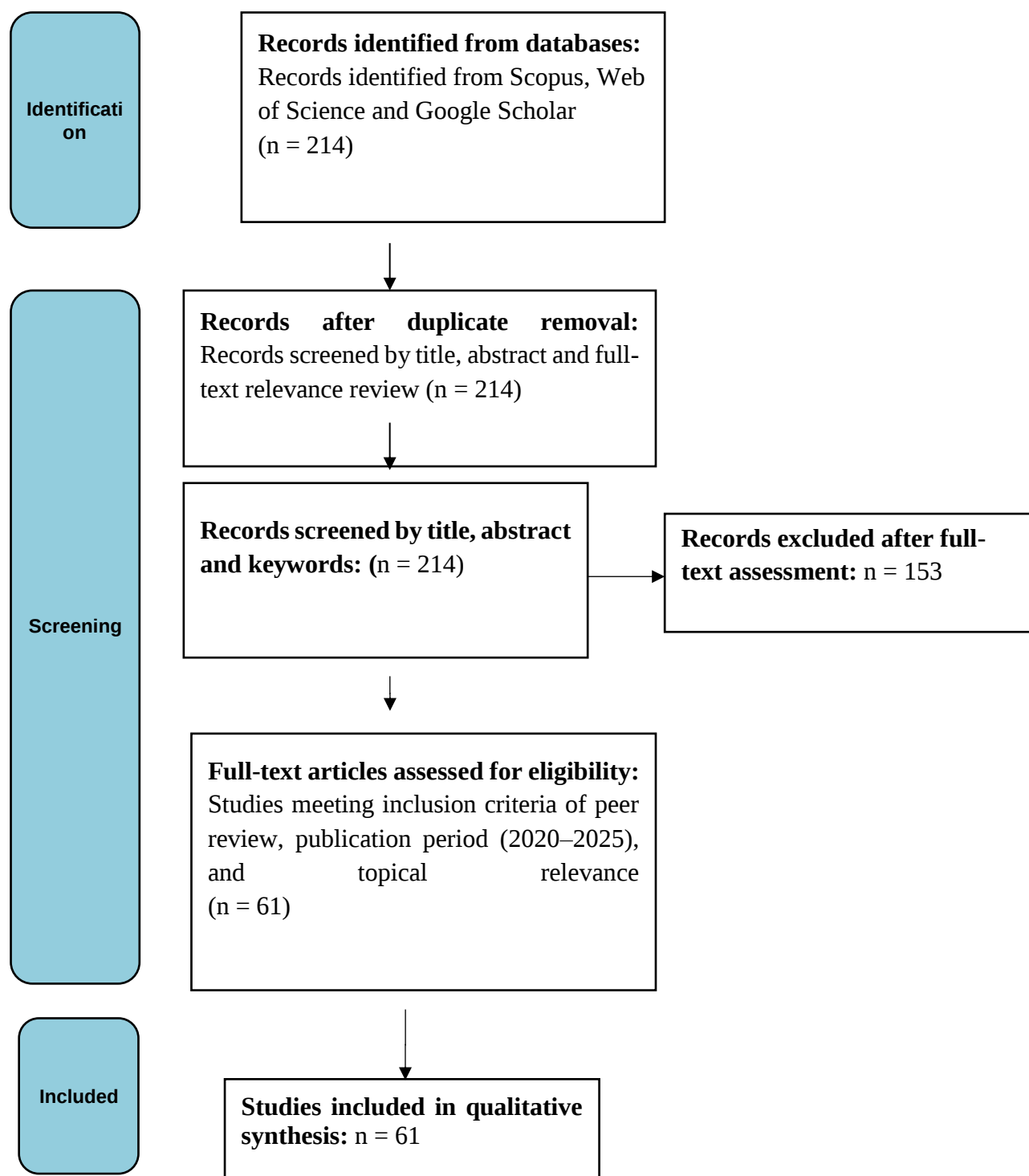


Figure-1: PRISMA-Informed Literature Selection Flow

6. Discussion and Findings

The thematic synthesis identifies four major findings. First, AI strengthens fraud detection by enabling anomaly detection, behavioural pattern recognition, network analysis and real-time transaction monitoring. Second, AI improves financial risk management by supporting credit-risk assessment, market-risk forecasting, stress testing and operational-risk monitoring. Third, AI helps to with information asymmetry and enhance the timeliness of information available to the board, auditors, and regulators, in the context of digital corporate governance. Fourthly, there are governance risks associated with AI adoption, such as the opacity of models, algorithmic bias, data privacy risks, cyber vulnerability and uncertainty of responsibility for decisions made by algorithms. The results indicate that AI can enhance governance in the absence of explainability, independent checks, auditability, and oversight, which are essential factors.

Algorithmic accountability is an other key challenge. With increasingly autonomous AI, it becomes more difficult to hold individuals accountable for the decisions made by AI. This requires creating explainable AI models as well as accountability frameworks. Ethical considerations are also of great importance. AI models can be biased, which can result in discriminatory outcomes, such as in credit scoring and lending decisions. Breadth, fairness, and transparency in the use of AI are critical for institutions. Fairness, transparency, and inclusivity in the use of AI are essential for institutions.

6.1 AI as a monitoring Multiplier.

The results prove that AI provides enhanced fraud detection capabilities by utilizing network analysis, anomaly detection and predictive modelling. These tools help to reduce the information gap between oversight and management bodies. The governance structure as a result is more knowledgeable and flexible. Continuous auditing systems using AI change the way that internal control is assessed, from a retroactive approach to a proactive approach. Instead of relying only on periodic audit reports, AI-enabled alerts allow boards, audit committees and risk committees to respond to suspicious transactions and emerging risks in real time.

6.2 Financial Risk Management Transformation

The predictive accuracy of credit scoring and volatility forecasting is improved by AI based risk models. Compared to using the conventional models, institutions that implement these systems frequently identify stress sooner. Sometimes, even better prediction fails to eliminate governance risk. Explainability and transparency remain a big challenge. The more robust the governance, the more a business is likely to have regular audits and to have independent validation of its models, and to have an organised review committee. Predictive power without accountability subsequently leads to instability, instead of stability.

6.3 Governance Implications in India

The role of a board and the use of AI are closely intertwined in India with rising regulatory expectations. It is the responsibility of directors to supervise algorithmic decision systems and provide satisfactory assurance. This often requires new committee structures and is enhanced with digital literacy at the board level. The study mainly identifies the three very important keys. First, establishing AI oversight committees. Second, mandating the rigorous model validation process. And the third one, strengthening the digital competence among the directors.

6.4 Challenges and Risks (Critical Analysis)

Although AI brings many benefits to fraud detection and financial risk management, it also presents some crucial challenges that need to be taken on board. The "black box" problem known as lack of transparency in complex data AI models is one of the main concerns in recent era. In real classical statistical models, AI systems, and tools specifically deep learning models, function

in very complex structures, which are hard to interpret and repudiate. This opacity pose difficulty for decision-makers who may be making decisions based on these outputs without an understanding of the underlying logic in real.

One of the other big problems is algorithmic bias happening in AI Systems. The models that use AI can be subject to biases based on past data that might result in discriminatory action for various financial institutions, like in credit-scoring and lending. This may have business ethical issues that foster mistrust in financial institutions among stakeholders. Moreover, traditional models are less accurate in comparison of current AI tools, but can be more transparent and easier to audit.

The risk of the model is another large hurdle. Predictions can be unreliable if there is an overfitting, poor data quality or lack of proper validation. These mistakes can lead to significant economic consequences and systemic risk in an environment with high financial stakes. Moreover, the growing use of AI systems also comes with operational risks, such as cyber threats and system failures.

The uncertainty of regulations is an additional complicating factor. The regulatory landscape is lagging behind the rapidly changing world of AI technologies. This is especially confusing for financial institutions, as to what is required for compliance and what are the standards of accountability. AI, therefore, can be useful in improving efficiency and predictive capabilities, but it needs to be backed by robust governance models, constant monitoring and regulation to ensure it reduces and counteracts the risks involved.

6.5 India-Specific Regulatory

The Indian context is particularly important because AI adoption in finance is developing alongside an expanding digital regulatory architecture. The Reserve Bank of India has recognised the relevance of AI and machine learning for ongoing customer due diligence and monitoring in regulated entities, while also emphasising risk-based monitoring in KYC compliance. SEBI has issued reporting requirements for AI and machine-learning applications used by market intermediaries, mutual funds and market infrastructure institutions, indicating that algorithmic systems are increasingly treated as matters of regulatory oversight. In addition, SEBI's Cybersecurity and Cyber Resilience Framework for regulated entities strengthens the relevance of cyber-risk governance in digitally mediated financial systems. The Digital Personal Data Protection Act, 2023 further makes data protection central to AI-enabled finance because AI models often process sensitive digital personal data for credit assessment, fraud monitoring, customer profiling and compliance analytics. Developments shows that AI-based fraud detection and risk management cannot be evaluated only as technical tools; they must also be examined as governance systems that require accountability, data protection, transparency, explainability and regulatory auditability.

6.6 Challenges in AI Adoption in India

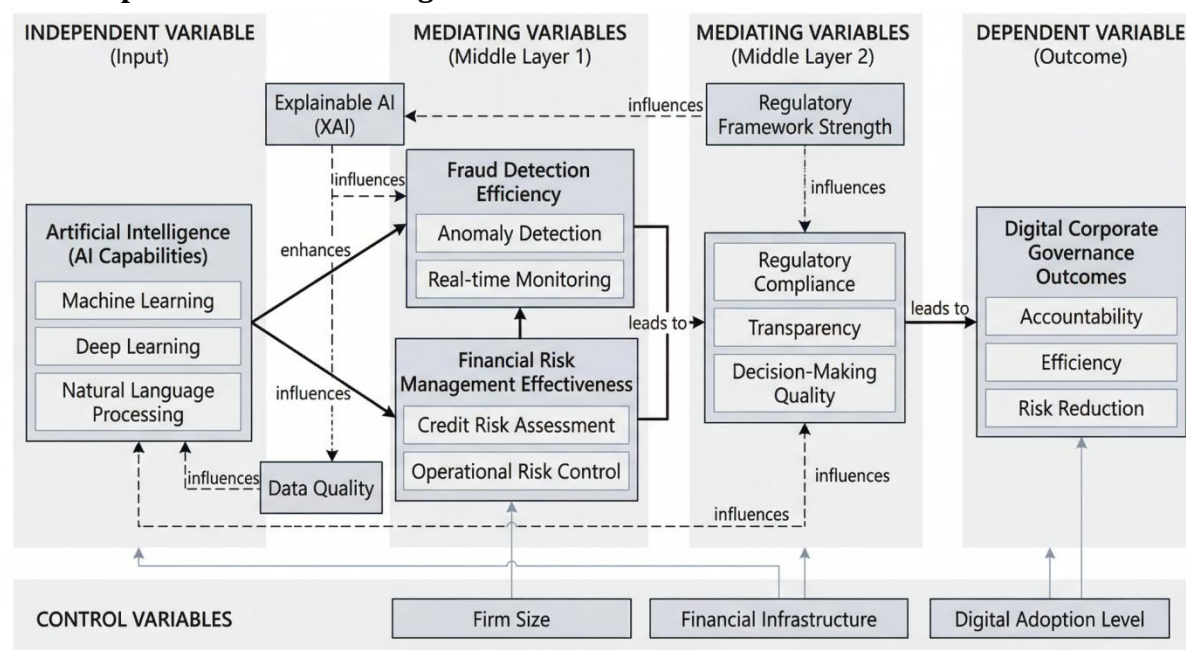
In financial sector in India, the integration of Artificial Intelligence is important to encounters numerous structural and operational hurdles regularly. A significant obstacle is the shortage of skilled personnel proficient in AI, Machine learning, deep leaning, data science, and financial analytics. Various organizations, especially banks and fintech companies, find it challenging to hire and keep professionals who are adapt at creating and overseeing AI systems.

A further obstacle is the expense associated with implementation of this type of structured financial tools. Building and launching AI systems demand considerable funding for technology, infrastructure, and training all together. This financial burden can help smaller institutions with limited resources from adopting these type of systems.

Regulatory and governance deficiencies present further challenges to the adoption of AI in India. Though regulatory bodies such as the RBI and SEBI have issued guidelines regarding all these, the development of a comprehensive and standardized framework for AI governance remains in progress and keeping the updated changes in the world. Similarly, institutions frequently encounter uncertainty when attempting to align their AI strategies with regulatory expectations.

These issues however underscore the necessity for joint initiatives by financial institutions, regulators, and technology providers regularly to establish a supportive environment for the responsible integration of AI in India.

7. Conceptual Framework Diagram



This research suggests that Artificial Intelligence (AI) serves, in this study, as an orchestrating mechanism of central integration within data inputs, analytics, financial applications and governance outcomes of a digital financial system. The framework starts with a variety of data inputs that are the building blocks of AI-powered analysis, such as transactional data, behavioural data, market data, and regulatory data. These data pieces undergo sophisticated AI analysis, including machine learning models, deep learning algorithms, and natural language processing, among others, which assist in spotting patterns, anomalies, and signals.

To build on these technological foundations, the framework identifies important functional applications of AI in financial systems that are well established as being practical such as fraud detection, credit risk modeling, market risk forecasting and compliance monitoring. These applications run on a real-time basis, which could optimize financial decision-making processes by providing improved efficiency, accuracy and real-time response. The knowledge and data gained through these AI-powered systems go into corporate governance systems, feeding into the actions of the Board of Directors, audit committees, risk management committees, and regulatory reporting systems.

At the governance level, AI minimizes information asymmetry as it can be used to provide real-time and continuous information on the performance of the organisation and the risk exposure of that same organisation. This allows for more effective monitoring, the more robust internal control systems and a boost to accountability throughout the organisation hierarchy.

The final phases of the framework lead to desired outcomes such as greater transparency, better risk management, lower level of fraud and financial stability. In this way, it indicates that the role of AI is not just as a technology, but as a governance structure that shifts the focus from operations to strategy and from mere technology to institutions. The conclusions of this research study have policy, theoretical, and practical significance with regards to Artificial Intelligence's influence in the detection of fraud, financial risk management and digital corporate governance.

8. Implications

The research findings demonstrate that AI must be considered beyond simply a technical tool of automation and is a governance enabling tool that affects monitoring, accountability, risk reporting, compliance and Board level decision making. Meanwhile, the use of AI brings with it governance challenges around algorithmic transparency, bias, model risk, cyber security, and data privacy. This means that successful implementation of AI in financial services must go hand-in-hand with robust governance protections and controls. This paper builds upon the literature from governance and risk management in order to bring the topic of AI into the area of governance and risk management.

8.1 Theoretical Implications

First, it extends Agency Theory by introducing algorithmic monitoring procedures, which in turn have the ability to handle information asymmetry between management and stakeholders by continuously processing data and providing real-time monitoring. This would change the governance from periodic to dynamic. Second, the study combines the principles of Risk Governance Theory with AI-based analytics, shedding light on the application of predictive models and anomaly detection in strengthening the resilience of institutions. Third, the research proposes to model AI as a governance infrastructure (as opposed to just a predictive tool) and therefore fills a key lacuna in literature that views fraud detection and risk management as two distinct areas of governance. This whole ecosystem can serve as a platform for further academic research on corporate governance in the digital world.

8.2 Practical Implications

The study also calls for a change in financial institutions' governance and risk management frameworks in relation to the adoption of AI from a management perspective. AI governance committees need to be created at an organisational level as part of existing board structures, with the specific responsibilities of developing, validating and deploying a model. Moreover, AI-driven continuous auditing should complement regular financial audits to facilitate ongoing monitoring of transactions and risks. There is also a need to strengthen the digital literacy of board and senior management, highlighted in the study. Decision makers need to have enough knowledge about the AI system for output interpretation, questions of making judgements on model assumptions, and to hold them to account. Moreover, there is a need to involve institutions in applying explainable AI technologies to increase transparency and gain trust from stakeholders. Building a strong data foundation, securing data systems and employing strong personnel is also necessary to ensure successful AI use.

8.3 Policy and Regulatory Implications

The study highlights the need for robust AI governance policies and regulations for policymakers and regulators. Institutions like the Securities and Exchange Board of India (SEBI) and the Reserve Bank of India (RBI) can help further standardization of the procedure for model validation in AI, transparency standards, and accountability measures. Based on the results, standards for

explainable AI and for using AI in an ethical way, as well as data protection, should be established, to minimize the risks of algorithmic bias and data privacy breaches.

Moreover, the implementation of Regulatory Technology (RegTech) and Supervisory Technology (SupTech) has the potential to further strengthen monitoring by providing real time surveillance of financial institutions by regulators. Last but not least, the capacity of regulators and institutional stakeholders requires strengthening with the support of capacity development programmes in order to have a strong and efficient oversight activity. To maintain AI's financial systems transparent, fair, and resilient, a collaborative approach, encompassing financial institutions, technology providers, and regulatory bodies, is essential.

9. Limitations and Future Research

9.1 Limitations

The data presented in this study are subject to certain limitations that should be considered when interpreting the results of this study. Second, the study is largely driven by a systematic literature search and secondary data sources, potentially reducing the capacity to reflect practices in the industry and overall differences in how larger firms use AI differently than smaller ones. Second, the study is not based on empirical research; thus, the framework proposed cannot be generalised to other financial institutions and regulatory settings. Third, although the study is contextual/explanatory, it focuses narrowly on the Indian financial system and the effectiveness of this approach for other emerging and developed financial systems may be limited. Also, some insights gained from this mapping may not be applicable when new AI technologies and governance become available.

9.2 Future Research

The limitations of the present study indicate new lines of inquiry for future research: What would be the effects of implementing the proposed conceptual framework by undergoing empirical analysis with the primary data of banks, fintech companies and the government bodies? Research and analysis can be enriched by comparative studies across countries that can further offer insights into the impact of different regulatory environments on AI governance and risk management. The study may also include examining the potential of XAI to improve accountability and trust, and its broader effects on financial inclusion, ethical decision making and system stability in the long term when it comes to AI adoption. Lastly, inter-disciplinary and highly integrative approaches to finance, technology and law can help to create strong governance models, more suitable for innovation and regulation, that satisfy ethical and regulatory considerations.

10. Conclusion

The aim of this study was to explore how Artificial Intelligence (AI) can be used to detect fraud and financial risks, as well as its overall impact on digital corporate governance in India. This study is blending three, traditionally separate, fields, namely fraud analytics, financial risk management and digital corporate governance, in a unified framework. Statistics reveal that artificial intelligence is more than just a technological tool; it's a strategic governance system that is transforming the way financial institutions govern, manage and hold themselves accountable for risk. AI systems can improve fraud detection by identifying anomalies in real time, recognizing patterns and analyzing networks. In the financial risk management sector, AI enhances predictive capabilities for credit risk, market risk, operational risk, and liquidity risk, enabling institutions to shift from a reactive to a proactive stance in financial risk management.

These developments stem from the elimination of information asymmetry, better internal control systems, and better formal and informal decision-making by the management and board. The

prospects and threats of AI bring opportunities or complications from the corporate governance point of view. It improves transparency in several ways, by means of continuous auditing, real-time dashboards and automated reporting systems, thereby enhancing the oversight and accountability. On the one hand it improves transparency through possible means of continuous auditing, real-time dashboards and automated reporting systems, thus leading to an improvement in the oversight and accountability. Conversely, it brings to the fore several pertinent issues of model transparency, algorithmic bias, ethical issues and the principle of collective responsibility in automated decision making. Amidst these challenges, there is a growing need for strong governance structures to accompany these models, ensuring a degree of transparency and accountability, through an independent validation system, while explaining the workings of the models.

The booming development of digital financial infrastructure in India has quickened the pace of adopting AI technologies. Institutional bodies like RBI and SEBI have now started to push the concept of technologically driven governance, thus raising the bar to make the time of a more structured and proactive regulatory watch. The study, however, reveals that preparation of the institutions is still not uniform, due to the variety of technical capacity, governance frameworks, and implementation capacity of institutions. The conceptual framework proposed in this study will help advance theory and practice within the field of enterprise architecture by introducing AI as a key element in bridging the gap between operational analytics and governance intelligence. It builds upon agency theory with algorithmic monitoring, and connects the concepts of risk governance with algorithmic decision systems. From a practical perspective, it highlights the need of creating committees for AI governance, improving the capacity of board members to handle digital governance, and embedding periodic auditing processes into existing control and audit regimes.

In Conclusion, AI can significantly use for financial stability, fraud detection and risk management capabilities, yet it's effectively execute in reliant on the development of solid AI administration, regulation, moral guards, and administrative consistency in all respect. The future will be digital in the financial markets, and this will important for the governance of AI. The challenges in the future lie in striking a balance between innovation and accountability to maintain the fairness, transparency, and resilience of AI-supported financial systems.

References

1. Abirami Dasu Jegadeesh & Gaurav Samdani. (2023). Integration of cloud computing, big data, artificial intelligence and internet of things: Review and open research issues. *World Journal of Advanced Engineering Technology and Sciences*, 9(1), 456–464. <https://doi.org/10.30574/wjaets.2023.9.1.0123>
2. Akanfe, O., Bhatt, P., & Lawong, D. A. (2025). Technology Advancements Shaping the Financial Inclusion Landscape: Present Interventions, Emergence of Artificial Intelligence and Future Directions. *Information Systems Frontiers*, 27(5), 2189–2212. <https://doi.org/10.1007/s10796-025-10597-z>
3. Al-Harbi, A. (2025). Navigating Ethics and Regulation: The Role of AI in Modern Financial Services. *Asian Journal of Economics, Business and Accounting*, 25(1), 325–335. <https://doi.org/10.9734/ajeba/2025/v25i11653>
4. Aneja, A., & Gavrilenko, V. (2025). DIGITAL TRANSFORMATION OF CORPORATE GOVERNANCE: INDIAN EXPERIENCE. *LAW. SAFETY. EMERGENCY SITUATIONS*, 2025(4), 66–81. <https://doi.org/10.61260/2074-1626-2025-4-66-81>

5. Anil Kumar Veldurthi. (2025). The Role of AI and Machine Learning in Fraud Detection for Financial Services. *Journal of Computer Science and Technology Studies*, 7(4), 757–771.<https://doi.org/10.32996/jcsts.2025.7.4.88>
6. ApeejayStya University, Thakur, N., Sharma, A., &ApeejayStya University. (2024). Ethical Considerations in AI-driven Financial Decision Making. *Journal of Management & Public Policy*, 15(3), 41–57.<https://doi.org/10.47914/jmpp.2024.v15i3.003>
7. Arner, D. W., Ahmed, S. M., &Gazi, S. (2022). Building Regulatory and Supervisory Technology Ecosystems: For Asia’s Financial Stability and Sustainable Development. *SSRN Electronic Journal*.<https://doi.org/10.2139/ssrn.4212276>
8. Artificial Intelligence and GANs in Regulatory Compliance- Enhancing Risk Management in Financial Services. (2024). *INTERANTIONAL JOURNAL OF SCIENTIFIC RESEARCH IN ENGINEERING AND MANAGEMENT*, 08(04), 1–7.<https://doi.org/10.55041/IJSREM30282>
9. Asian Development Bank. (2022). *Building Regulatory and Supervisory Technology Ecosystems: For Asia’s Financial Stability and Sustainable Development* (0 edn). Asian Development Bank.<https://doi.org/10.22617/TCS220330-2>
10. Bagherifam, N., Naghdi, S., Ahmadian, V., Fazlzadeh, A., &BaghalzadehShishehgarkhaneh, M. (2025). Digital Regulatory Governance: The Role of RegTech and SupTech in Transforming Financial Oversight and Administrative Capacity. *International Journal of Financial Studies*, 13(4), 217.<https://doi.org/10.3390/ijfs13040217>
11. Beatrice OyinkansolaAdelakun, Ebere Ruth Onwubuariri, GbengaAdeniyiAdeniran, &AfariNtiakoh. (2024). Enhancing fraud detection in accounting through AI: Techniques and case studies. *Finance & Accounting Research Journal*, 6(6), 978–999.<https://doi.org/10.51594/farj.v6i6.1232>
12. Bhattacharyya, A., Yu, Y., Yang, H., Singh, R., Joshi, T., Chen, J., &Yalavarthy, K. (2025). *Model Risk Management for Generative AI In Financial Institutions* (Version 1). arXiv.<https://doi.org/10.48550/ARXIV.2503.15668>
13. BogojevicArsic, V. (2021). Challenges of Financial Risk Management: AI Applications. *Management:Journal of Sustainable Business and Management Solutions in Emerging Economies*.<https://doi.org/10.7595/management.fon.2021.0015>
14. Chernihiv Polytechnic National University, Kholiavko, N., Kolotok, M., Chernihiv Polytechnic National University, Ostrovska, N., &YuriyFedkovych Chernivtsi National University. (2021). REGTECHANDSUPTECH: ADVANTAGES AND DIRECTIONS OF IMPLEMENTATION. *Scientific Bulletin of Polissia*, (1(22)), 114–126.[https://doi.org/10.25140/2410-9576-2021-1\(22\)-114-126](https://doi.org/10.25140/2410-9576-2021-1(22)-114-126)
15. Daiya, H. (2024). AI-Driven Risk Management Strategies in Financial Technology. *Journal of Artificial Intelligence General Science (JAIGS)* ISSN:3006-4023, 5(1), 194–216.<https://doi.org/10.60087/jaigs.v5i1.194>
16. Department of Business Administration, Westcliff University, California 90020, USA, Johora, F. T., Hasan, R., Department of Business Administration, Westcliff University, California 90020, USA, Farabi, S. F., Department of Business Administration, Westcliff University, California 90020, USA, Akter, J., Department of Business Administration, Westcliff University, California 90020, USA, Mahmud, M. A. A., & Department of Business Administration, International American University, California 90004, USA. (2024). AI-POWERED FRAUD DETECTION IN BANKING: SAFEGUARDING

- FINANCIAL TRANSACTIONS. *The American Journal of Management and Economics Innovations*, 6(6), 8–22. <https://doi.org/10.37547/tajmei/Volume06Issue06-02>
17. Dept of Computer and Information Sciences Memphis, TN, USA, &Middae, V. L. (2025). Enhancing Cloud Security with AI-Driven Big Data Analytics. *The American Journal of Engineering and Technology*, 07(05), 185–191. <https://doi.org/10.37547/tajet/Volume07Issue05-18>
 18. Edith EbeleAgu, Angela OmozeleAbhulimen, AnwuliNkemchorObiki-Osafiele, OlajideSojiOsundare, Ibrahim AdedejiAdeniran, &ChristianahPelumiEfunniyi. (2024). Discussing ethical considerations and solutions for ensuring fairness in AI-driven financial services. *International Journal of Frontline Research in Multidisciplinary Studies*, 3(2), 001–009. <https://doi.org/10.56355/ijfrms.2024.3.2.0024>
 19. Fazal, A., Ahmed, A., & Abbas, S. (2025). Importance of artificial intelligence in achieving sustainable development goals through financial inclusion. *Qualitative Research in Financial Markets*, 17(2), 432–452. <https://doi.org/10.1108/QRFM-04-2023-0098>
 20. Ficili, I., Giacobbe, M., Tricomi, G., &Puliafita, A. (2025). From Sensors to Data Intelligence: Leveraging IoT, Cloud, and Edge Computing with AI. *Sensors*, 25(6), 1763. <https://doi.org/10.3390/s25061763>
 21. Fritz-Morgenthal, S., Hein, B., &Papenbrock, J. (2022). Financial Risk Management and Explainable, Trustworthy, Responsible AI. *Frontiers in Artificial Intelligence*, 5, 779799. <https://doi.org/10.3389/frai.2022.779799>
 22. GowthamChilakapati. (2025). AI-Driven Fraud Detection: Enhancing Financial Security. *International Journal of Advanced Research in Science, Communication and Technology*, 22–30. <https://doi.org/10.48175/IJAR SCT-24603>
 23. Grassi, L., &Lanfranchi, D. (2022). RegTech in public and private sectors: The nexus between data, technology and regulation. *Journal of Industrial and Business Economics*, 49(3), 441–479. <https://doi.org/10.1007/s40812-022-00226-0>
 24. HadjiMisheva, B., Hirs, A., Osterrieder, J., Kulkarni, O., & Fung Lin, S. (2021). Explainable AI in Credit Risk Management. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3795322>
 25. Haeri, A., Vitran, J., &Ghelichi, M. (2025). *Generative AI Enhanced Financial Risk Management Information Retrieval* (Version 2). arXiv. <https://doi.org/10.48550/ARXIV.2504.06293>
 26. Hafez, I. Y., Hafez, A. Y., Saleh, A., Abd El-Mageed, A. A., &Abohany, A. A. (2025). A systematic review of AI-enhanced techniques in credit card fraud detection. *Journal of Big Data*, 12(1), 6. <https://doi.org/10.1186/s40537-024-01048-8>
 27. Haosen Xu, KaiyiNiu, Tianyi Lu, &Siyang Li. (2024). Leveraging artificial intelligence for enhanced risk management in financial services: Current applications and future prospects. *Engineering Science & Technology Journal*, 5(8), 2402–2426. <https://doi.org/10.51594/estj.v5i8.1363>
 28. HoHee Jung, J. (2021). REGTECH AND SUPTECH: THE FUTURE OF COMPLIANCE. In J. Madir (Ed.), *FinTech*. Edward Elgar Publishing. <https://doi.org/10.4337/9781800375956.00024>
 29. Ismaeil, M. K. A. (2024). Harnessing AI for Next-Generation Financial Fraud Detection: A Data-Driven Revolution. *Journal of Ecohumanism*, 3(7), 811–821. <https://doi.org/10.62754/joe.v3i7.4248>

30. IswaryaKonasani. (2025). AI-Driven Risk Management: Transforming Financial Decision-Making. *International Journal of Scientific Research in Computer Science, Engineering and Information Technology*, 11(1), 3574–3582.<https://doi.org/10.32628/CSEIT251112382>
31. IT Department, College of Informatics, Akre University for Applied Sciences, Ali Hassan, Y., Zeebaree, S. R. M., & Energy Eng. Dept., Technical College of Engineering, Duhok Polytechnic University, Duhok, Iraq,. (2025). Big Data Cloud Computing and AI-Driven Digital Marketing in Enterprise Systems. *Engineering and Technology Journal*, 10(04).<https://doi.org/10.47191/etj/v10i04.28>
32. Jamaludin, H., Achlison, U., &Rokhman, N. (2024). Enhancing AI Model Accuracy and Scalability Through Big Data and Cloud Computing. *Journal of Technology Informatics and Engineering*, 3(3), 296–307.<https://doi.org/10.51903/jtie.v3i3.203>
33. Joshi, S. (2025). Model Risk Management in the Era of Generative AI: Challenges, Opportunities, and Future Directions. *International Journal of Scientific and Research Publications*, 15(5), 299–309.<https://doi.org/10.29322/IJSRP.15.05.2025.p16133>
34. Kanojia, S. (2023). Application of Blockchain in Corporate Governance: Adaptability, Challenges and Regulation in BRICS. *BRICS Law Journal*, 10(4), 53–67.<https://doi.org/10.21684/2412-2343-2023-10-4-53-67>
35. Md Shakil Islam &Nayem Rahman. (2025). AI-Driven Fraud Detections in Financial Institutions: A Comprehensive Study. *Journal of Computer Science and Technology Studies*, 7(1), 100–112.<https://doi.org/10.32996/jcsts.2025.7.1.8>
36. Mhlanga, D. (2020). Industry 4.0 in Finance: The Impact of Artificial Intelligence (AI) on Digital Financial Inclusion. *International Journal of Financial Studies*, 8(3), 45.<https://doi.org/10.3390/ijfs8030045>
37. Mhlanga, D. (2021). Financial Inclusion in Emerging Economies: The Application of Machine Learning and Artificial Intelligence in Credit Risk Assessment. *International Journal of Financial Studies*, 9(3), 39.<https://doi.org/10.3390/ijfs9030039>
38. Mykytyuk, P., &Mykytyuk, V. (2025). Financial technologies in money management, investments and financial services. *Herald of Economics*, (1), 65–78.<https://doi.org/10.35774/visnyk2025.01.065>
39. Ngozi Samuel Uzougbo, Chinonso Gladys Ikegwu, &AdefolakeOlachiAdewusi. (2024). Legal accountability and ethical considerations of AI in financial services. *GSC Advanced Research and Reviews*, 19(2), 130–142.<https://doi.org/10.30574/gscarr.2024.19.2.0171>
40. NnennaIjeomaOkeke, Olufunke Anne Alabi, Abbey NgochindoIgwe, OnyekaChrisantusOfodile, &Chikezie Paul-MikkiEwim. (2024). AI-Powered customer experience optimization: Enhancing financial inclusion in underserved communities. *International Journal of Applied Research in Social Sciences*, 6(10), 2487–2511.<https://doi.org/10.51594/ijarss.v6i10.1662>
41. OlubusolaOdeyemi, NoluthandoZamanjomaneMhlongo, EkeneEzinwaNwankwo, &Oluwatobi Timothy Soyombo. (2024). Reviewing the role of AI in fraud detection and prevention in financial services. *International Journal of Science and Research Archive*, 11(1), 2101–2110.<https://doi.org/10.30574/ijrsra.2024.11.1.0279>
42. OluwabusayoAdijat Bello &KomolafeOlufemi. (2024). Artificial intelligence in fraud prevention: Exploring techniques and applications challenges and opportunities. *Computer Science & IT Research Journal*, 5(6), 1505–1520.<https://doi.org/10.51594/csitrj.v5i6.1252>

43. Omolara Patricia Olaiya, TemitayoOluwadamilolaAdesoga, Kenneth Pieteron, OmotoyosiQazeemObani, John Odunayo Adebayo, &OlajumokeOluwagbemisolaAjayi. (2024). RegTech Solutions: Enhancing compliance and risk management in the financial industry. *GSC Advanced Research and Reviews*, 20(2), 008–015.<https://doi.org/10.30574/gscarr.2024.20.2.0295>
44. OmotayoBukolaAdeoye, Wilhelmina Afua Addy, AdeolaOlusolaAjayi-Nifise, OlubusolaOdeyemi, ChinweChinazoOkoye, &OnyekaChrisanctusOfodile. (2024). LEVERAGING AI AND DATA ANALYTICS FOR ENHANCING FINANCIAL INCLUSION IN DEVELOPING ECONOMIES. *Finance & Accounting Research Journal*, 6(3), 288–303.<https://doi.org/10.51594/farj.v6i3.856>
45. Owolabi, O. S., Uche, P. C., Adeniken, N. T., Ihejirika, C., Islam, R. B., &Chhetri, B. J. T. (2024). Ethical Implication of Artificial Intelligence (AI) Adoption in Financial Decision Making. *Computer and Information Science*, 17(1), 49.<https://doi.org/10.5539/cis.v17n1p49>
46. PrabinAdhikari, Prashamsa Hamal, & Francis Baidoo Jnr. (2024). Artificial Intelligence in fraud detection: Revolutionizing financial security. *International Journal of Science and Research Archive*, 13(1), 1457–1472.<https://doi.org/10.30574/ijsra.2024.13.1.1860>
47. Ridzuan, N. N., Masri, M., Anshari, M., Fitriyani, N. L., &Syafudin, M. (2024). AI in the Financial Sector: The Line between Innovation, Regulation and Ethical Responsibility. *Information*, 15(8), 432.<https://doi.org/10.3390/info15080432>
48. Sapienza University, Lagasio, V., Pirillo, J., Reply, Belloli, M., & Reply. (2025). Integrating Generative AI and Large Language Models in Financial Sector Risk Management: Regulatory Frameworks and Practical Applications. *Risk Management Magazine*, 20(1), 30–48.<https://doi.org/10.47473/2020rmm0150>
49. Sari, Y., &Indrabudiman, A. (2024). The Role of Artificial Intelligence (AI) in Financial Risk Management. *Formosa Journal of Sustainable Research*, 3(9), 2073–2082.<https://doi.org/10.55927/fjsr.v3i9.11436>
50. Satyadhar Joshi. (2025). Review of Gen AI Models for Financial Risk Management. *International Journal of Scientific Research in Computer Science, Engineering and Information Technology*, 11(1), 709–723.<https://doi.org/10.32628/CSEIT2511114>
51. ShabnamSharmin&Rakibul Hasan Chowdhury. (2025). Digital Transformation in Governance: The Impact of e-governance on Public Administration and Transparency. *Journal of Computer Science and Technology Studies*, 7(1), 362–379.<https://doi.org/10.32996/jcsts.2025.7.1.27>
52. Sharma, C., & Singh, R. (2023). IMPACT OF E-GOVERNANCE REFORMS ON FINANCIAL PERFORMANCE OF INDIAN IT COMPANIES UNDER THE COMPANIES ACT 2013. *ShodhKosh: Journal of Visual and Performing Arts*, 4(MIHCSET).<https://doi.org/10.29121/shodhkosh.v4.iMIHCSET.2023.6067>
53. Shen, Q. (2024). AI-driven financial risk management systems: Enhancing predictive capabilities and operational efficiency. *Applied and Computational Engineering*, 69(1), 134–139.<https://doi.org/10.54254/2755-2721/69/20241494>
54. Subramaniam, Y., Loganathan, N., Khan, F. N. H. T., &Subramaniam, T. (2025). Exploring the Impact of Artificial Intelligence on Financial Inclusion: Cross-Country Analysis. *Social Indicators Research*, 178(3), 1227–1244.<https://doi.org/10.1007/s11205-024-03380-1>

55. Trivax Energy Services Limited, Toronto, Canada, Essien, I. A., OluwagbengaAjayi, J., Reevar AI, Lagos, Nigeria, Daniel Erigha, E., Senior Software Engineer, Mistplay, Toronto, Canada, Obuse, E., Founder & Principal Engineer, F.5 Labs, Toronto, Canada, Ayanbode, N., & Independent Researcher, Nigeria. (2025). AI-Driven Governance Systems for Proactive Regulatory Compliance and Fraud Risk Management in Financial Service Environments. *Engineering and Technology Journal*, 10(09).<https://doi.org/10.47191/etj/v10i09.26>
56. V. S. N. Murthy. (2025). Edge-AI in IoT: Leveraging Cloud Computing and Big Data for Intelligent Decision-Making. *Journal of Information Systems Engineering and Management*, 10(20s), 601–619.<https://doi.org/10.52783/jisem.v10i20s.3194>
57. Veldurthi, A. K. (2025). Ethical Considerations in AI-Driven Financial Decision-Making. *European Journal of Computer Science and Information Technology*, 13(31), 49–64.<https://doi.org/10.37745/ejcsit.2013/vol13n314964>
58. Wang, Y. (2024). Ethical considerations of AI in financial decision. *Computing and Artificial Intelligence*, 2(1), 1290.<https://doi.org/10.59400/cai.v2i1.1290>
59. Yasir, A., Ahmad, A., Abbas, S., Inairat, M., Al-Kassem, A. H., & Rasool, A. (2022). How Artificial Intelligence Is Promoting Financial Inclusion? A Study On Barriers Of Financial Inclusion. *2022 International Conference on Business Analytics for Technology and Security (ICBATS)*, 1–6.<https://doi.org/10.1109/ICBATS54253.2022.9759038>
60. Зінюк, М., Dyeyeva, N., Bogatyrova, K., Melnychenko, S., Fayvishenko, D., & Shevchun, M. (2022). DIGITAL TRANSFORMATION OF CORPORATE GOVERNANCE. *Financial and Credit Activity Problems of Theory and Practice*, 5(46), 300–310.<https://doi.org/10.55643/fcaptop.5.46.2022.3807>
61. Шаповал, Ю. (2024). РЕГУЛЯТИВНІ ТА НАГЛЯДОВІ ТЕХНОЛОГІЇ НА ФІНАНСОВОМУ РИНКУ: СУЧАСНА ПРАКТИКА І ВИКЛИКИ. *Economy of Ukraine*, 63(12 (709)), 21–35.<https://doi.org/10.15407/economyukr.2020.12.021>
62. Government of India. (2023). The Digital Personal Data Protection Act, 2023 (No. 22 of 2023). Ministry of Electronics and Information Technology.
63. Reserve Bank of India. (2019). Opportunities and challenges of FinTech. RBI Speech.
64. Reserve Bank of India. (2016, updated). Master Direction - Know Your Customer (KYC) Direction, 2016.
65. Securities and Exchange Board of India. (2019a). Reporting for Artificial Intelligence (AI) and Machine Learning (ML) applications and systems offered and used by market intermediaries. Circular No. SEBI/HO/MIRSD/DOS2/CIR/P/2019/10.
66. Securities and Exchange Board of India. (2019b). Reporting for Artificial Intelligence (AI) and Machine Learning (ML) applications and systems offered and used by Market Infrastructure Institutions (MIIs). Circular No. SEBI/HO/MRD/DOP1/CIR/P/2019/24.
67. Securities and Exchange Board of India. (2019c). Reporting for Artificial Intelligence (AI) and Machine Learning (ML) applications and systems offered and used by Mutual Funds. Circular No. SEBI/HO/IMD/DF5/CIR/P/2019/63.
68. Securities and Exchange Board of India. (2024). Cybersecurity and Cyber Resilience Framework (CSCRF) for SEBI regulated entities. Circular No. SEBI/HO/ITD-1/ITD_CSC_EXT/P/CIR/2024/113.



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