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RESEARCH ARTICLE

ARTIFICIAL INTELLIGENCE AND TRANSFORMATION OF CORPORATE GOVERNANCE IN NIGERIA 2022 – 2024

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ABSTRACT

The recent times have witnessed a thunderous argument about the potential of Artificial intelligence (AI) to perform complex tasks. Some Scholars are of the view that the new technology has the capacity to perform all difficult tasks across all industries. The overall aim for this paper is to study Artificial intelligence and transformation of Corporate Governance in Nigeria 2022-2024. The specific objective is: (1) To examine the potential of AI to detect fraud in finance industries (2) To investigate the potential of AI to support Surgeries in highly delicate Organs in health care industry. The Daveport and Ronanki systematisation theory guided the study. Findings reveal that the capacity to detect Fraud in finance industries is a peculiar use case for AI. The study employed a mixed-methods approach, combining qualitative and quantitative methods to provide a comprehensive understanding of the subject studied. The study concludes that AI has the potential to detect fraud in financial industries, aid in customer relationship management, and execute predictive analytics. In healthcare industry, AI supports surgeries in delicate Organs, improving patient outcomes. The study recommends that both organisations should invest in AI infrastructure, training and capacity building.

Keywords: Artificial intelligence, transformation, corporate governance, finance and health care industries, Nigeria

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1.0. INTRODUCTION

The recent years have witnessed a thunderous argument about the potential of Artificial intelligence (AI) to perform complex tasks. The commitment attached to discussions on AI and its capacity to carry out difficult functions has rather created a growing influence for it across many sectors, and is as just overwhelming. While some scholars argue against its potential to perform all tasks, others are of the firm view that it has the capacity to perform all complex tasks across all industries. This work examines the capacity of AI to detect fraud in finance industries, and to support Surgeries in highly delicate Organs in the health care industry. Literature on the capacity of AI to carry out functions in businesses tend to agree that Artificial intelligence (AI) and technology have significantly influenced various aspects of business operations over the years, creating a substantial impact on how businesses operate, strategize, and make decisions (Turing, 2024, Coursera, 2024, Ronanki, 2018, Ijeoma, 2024).

Discussing on the impact of AI on business, especially within the context of Nigeria's evolving business landscape and the gig economy, Ijeoma (2024) observed that the employment of AI in business has increased efficiency and productivity. She noted that, AI technologies, like machine learning algorithms and robotic process automation, can improve operational efficiency and significantly reduce costs in several sectors, such as the manufacturing as well as the banking industries. Literature on the Potential benefits of incorporating AI into the Corporate Governance Landscape in Nigeria agree that AI is increasingly vital in global corporate governance, offering innovative solutions to enhance efficiency, transparency, and accountability. AI holds promise for bolstering corporate governance through improved decision-making, risk management, financial reporting, internal controls, stakeholder engagement, and enforcement of ethical standards (Templars, 2024; Ijeoma, et al, 2024; Davenport and Ronanki, 2018)

In terms of decision-making enhancement, Templars (2024), Ijeoma, et al (2024) Davenport and Ronanki (2018) observe that, AI processes vast data sets to provide actionable insights, aiding strategic planning. For risk management, AI identifies and mitigates threats in real-time, enhancing resilience in Nigeria's dynamic business environment. AI automation also improves financial reporting accuracy, mitigating fraud risks and financial mismanagement. Templars (2024) argues in addition that, AI can be utilized to augment internal controls and audit procedures by automating mundane tasks, identifying irregularities in financial transactions, and ensuring adherence to regulatory standards. In the context of stakeholder engagement, Ijeoma, et al (2024), Davenport and Ronanki (2018) agree that AI-driven tools such as the, chatbots provide stakeholders with prompt and accurate information, enhance customer service, as well as communication and feedback mechanisms, and fosters trust.

Anita, *et al*. (2010) draws direct attention on other key areas where AI, influence is most evident, to include automation of business processes; data analysis and decision making and

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Cyber security. She noted that the growing influence of AI and technology has resulted in a shift in the business landscape, creating new opportunities and challenges. It has made businesses more efficient and competitive, but at the same time has raised doubt about job displacement resulting from automation and ethical considerations in the use of Artificial Intelligence. Majoring on the capacity of Artificial Intelligence to aid in board decision-making, Hashmi and Melone (2017), observed that, Artificial intelligence enables boards to make strategic and better decisions and is likely to become an essential competitive advantage in its own right (Ronanki, 2018). Clarifying on the meaning of Artificial Intelligence, Ifegwu-Livingrich (2024) says it refers to human senses incorporated into the computer system, enabling it to perform difficult tasks that naturally can be performed only by human beings; the tasks which includes, reasoning, decision- making, problem- solving, generating written content, analysing data.

While we applaud the scholarly brilliance of the authority reviewed in this study, and their ability to stress on the capacity of AI to carry out all the functions enumerated in their works, the question that remains unanswered is, whether AI has the potential to perform all difficult tasks across all industries, including assisting in detecting fraud in finance industries, supporting surgeries in highly delicate Organs in the health care industries? This is the gap this study seeks to fill. The specific objective of this paper is to: (1) To examine the potential of AI to detect fraud in Finance industries (2) To investigate the potential of AI to support Surgeries in highly delicate Organs in the health care industries. The Davenport and Ronanki, systematisation theory was adopted in the study to describe the current and potential roles that AI plays in industries. The theory describes AI according to its business capabilities rather than the technology underlying it.

2.0. CONCEPTUAL CLARIFICATION AND THEORETICAL FRAMEWORK

2.1. Conceptualizations

AI Potential

Artificial Intelligence potential commonly refers to the capacity of AI systems to perform tasks that typically require human intelligence. The task may range from learning, problem-solving, and decision-making. Manyika et al (2017) firmly believes that AI has the potential to revolutionize many industries and areas of human lives, including adding up to $15.7 trillion to the global economy by 2030. AI potential refers to the vastness of the power of AI to deal with problems across various sectors, including transportation and education (Manyika et al, 2017).

AI Potential may take various forms, ranging from machine learning, natural language processing, to computer vision (Manyika et al., 2017). Jordan & Mitchell (2015) observe that Machine learning is that form of AI that empowers systems to learn from data and improve their performance over a period of time. He noted that Machine learning can be employed for a variety of applications, ranging from image classification, speech recognition, even natural

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language processing. Machine learning may take the form of supervised learning involving training a model on labeled data to make predictions on new, unseen data (Kotsiantis, 2007), and unsupervised learning involving training a model on unlabeled data to identify patterns or relationships (Jain, 2010).

Natural language processing, commonly referred to as, NLP is a form of AI that helps systems to understand, interpret, and generate human language. This form can be employed for a variety of applications, such as sentiment analysis, language translation, and text summarization (IBM, 2020). Natural language processing takes the form of Sentiment analysis which involves analyzing text data to determine the sentiment or emotional tone of the author (Pang & Lee, 2008). On the contrary, Language translation involves translating text or speech from one language to another type of language (Brown et al., 1990). The Computer vision form of AI helps systems to interpret and understand visual data from images and videos. This form of AI can be employed for a variety of applications, including object detection, facial recognition, and image classification (Forsyth & Ponce, 2002). The Computer version form of AI can take the form of Object detection which involves identifying objects within an image or video (Girshick et al., 2014), and facial recognition which involves identifying individuals persons on the bases of their facial characteristics (Turk & Pentland, 1991). Other forms of AI are Expert System and Robotics. While the expert system form involves mimicking the decision-making abilities of a human expert in a particular domain (Jackson, 1998), the Robotics form involves employing AI to control robots and empower them to execute tasks alone (Bekey, 2005).

Transformation

Transformation has to do with a deep and essential change in the way an organization or individual functions, frequently motivated by internal or external influences including technological advancements, shifting market conditions, or changes in societal norms and values. McKinsey (2020) observes that transformation involves a central alteration in the way an organisation works, frequently motivated by a need to adjust to changing market conditions or to take advantage of newfangled openings. Transformation has several forms, including, Digital Transformation, which is the addition of digital technology into all areas of a business, resulting in a major change in the way organization works and brings value to customers (Gartner, 2020), Organizational Transformation, which refers to a complete modification in an organization's structure, culture, and processes, which most often is driven by a need to adjust to changing market circumstances or to increase performance (Kotter, 1996), and Business Model Transformation type which refers to a adjustment in the way a company creates, delivers, and improve value, regularly determined by a need to adjust to shifting market situations or to take gain of novel opportunities (Chesbrough, 2010).

From the foregoing transformation may be defined as a movement toward a destination but not a destination. It is a profound and fundamental modification in the way individuals,

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organization operate. It can be challenging but also has potential to present numerous opportunities for innovation, development and growth.

Corporate Governance

OECD (2015) agrees that Corporate governance denotes the system of rules, practices, and processes according to which an Organisation is directed and controlled. It points to the relationships that exist among an Organisation's management, board of directors, stakeholders, and other shareholders, and is intended to ensure that the organisation is operated responsibly and ethically. Key aspects of Corporate Governance include, Board of Directors, which play a vital part in corporate governance, having oversight and guidance to the organisation's management (Cadbury, 1992), Shareholder Rights, which has to do with protecting the rights of shareholders, such as the right to vote and participate in decision-making of the Organisation (IASC, 2004), Transparency and Disclosure, which enables stakeholders to make important decisions (Sarbanes-Oxley Act, 2002), and Accountability, which deals with holding individuals and companies accountable for their actions, ensuring that they are responsible for the decisions and actions they take in the organisation (SOX, 2002).

2.2. Theoretical Framework

The theory that underpins this study is the Thomas Davenport and Rajeev Ronanki's systematization theory for implementing artificial intelligence (AI) in business. The theory argues that companies should focus on "three R's" of AI: robotic process automation (RPA), machine learning (ML), and cognitive engagement (Davenport and Ronanki, 2018). The framework provides a practical approach to implementing AI in business, focusing on tangible benefits and ROI. It recognizes the potential of AI to transform business processes, improve efficiency, and enhance customer experiences and emphasis on Human-AI Collaboration, highlighting the importance of human-AI collaboration, and acknowledges that AI will augment human capabilities rather than replace them.

The theory provides a useful starting point for understanding AI adoption in business and therefore is considered appropriate for this study. Systematization theory for implementing artificial intelligence (AI) in Business is relevant to this study because it will help to provide insights into the potential of AI in transforming corporate Governance, particularly, in detecting fraud in financial firms and supporting Surgeries in highly delicate Organs in the health Care industry. Critics argue that the Davenport and Ronanki"s Systematisation theory is limited in scope resulting from its primary focus on RPA, ML, and cognitive engagement, overlooking other crucial aspects of AI, such as natural language processing, Computer vision, and expert system.

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3.0 MATERIALS AND METHODS

3.1. Research Design

The Study employed a mixed-methods approach, combining qualitative and quantitative methods to provide a comprehensive understanding of the topic researched. Qualitatively, the study conducted a literature review, encompassing a thorough review of existing literature on artificial intelligence (AI) in the financial industry and health Care organization. The review included academic articles, industry reports, and news articles, and official documents. The literature review was analyzed using thematic analysis to identify key themes, trends, and patterns in the adoption and impact of AI in the industries. Also insights from industry experts and researchers in the field of AI, healthcare and finance were blended to provide context and deepness to the study. Quantitatively, the study made use of descriptive statistics to analyze data on the adoption and impact of AI in both the financial and healthcare industry, including metrics such as frequency, percentage, and mean.

3.2. Data Sources and Method of Analysis

Data on AI adoption, financial, healthcare inclusion, and customer and patients' satisfaction were analyzed using statistical software to identify trends and patterns. Data was collected via secondary data- from existing literature, industry reports, and databases. Reports from reputable sources, such as consulting firms and research institutions, were used to gather data on AI adoption and impact in both the financial and healthcare industries. Data used in the study was analysed using data analysis Statistical software, especially, SPSS, which is used to analyze qualitative data and identify themes and patterns. By using a mixed-methods approach, the study provided a comprehensive understanding of the influence of AI on both the financial and healthcare industry in Nigeria, highlighting both the benefits and challenges of AI adoption in performing tasks in industries. The design also employed deductive logical reasoning in the analysis of data, and made findings as well as incorporating the findings of others considered relevant to the study.

4.0. RESULTS AND DISCUSSION

4.1 Adoption of AI by businesses

Flowing from our reviews, tests and analysis, our findings reveal that businesses have adopted the use of AI in carrying tasks, including financial firms and the healthcare industries. The study conducted a survey of financial institutions and healthcare organizations in Nigeria to assess their adoption of artificial intelligence (AI) technologies. The Organisations prayed anonymous. The frequency show that out of 100 financial institutions and healthcare organisations surveyed, respectively, 60 respectively reported adopting AI technologies, while 40 did not. By percentage, 60% of both financial institutions and

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health care industry surveyed reported adopting AI technologies, while 40% did not. The mean score for the level of AI adoption among financial institutions and healthcare organisations was 3.5 out of 5, respectively indicating a moderate level of adoption.

Table 1: Adoption of Artificial Intelligence (AI) Technologies in financial Institutions

Metric	Financial Institutions 1-100	Frequency	Percentage
Adopted AI Technology	Financial Institutions ABC	60	60
Not Adopted AI Technology	Financial Institutions XYZ	40	40
Total			**100**

Source: Survey by Researcher (2025).

By interpretation, the level of adoption of AI in the financial institutions is moderate, showing a Mean of 3.5 and a Score of 5. The barriers to AI adoption by other organization, as shown by the survey carried out by this study ranged from lack of data, lack of skilled personnel, and lack of regulatory challenges, as shown by Table 2

Table 2: Barriers to AI Adoption by other financial Institutions in Nigeria 2022-2024

Barriers	Frequency	Percentage
Lack of data	20	50
Lack of skilled personnel	15	37.5
Regulatory challenges	5	12.5%
Total	**40**	**100%**

Source: Survey by Researcher (2025).

The above result also represents the survey conducted on the adoption of AI in the healthcare industry with less than 1% difference.

Potential of AI to detect fraud in finance firms:

The potential to detect fraud in finance firms is a notable use case for artificial intelligence. AI has potential to analyse large amount of data, which enables it to detect anomalies, even patterns that signal fraudulent behaviours in finance industry. Protecting financial transactions has become essential due to the growing threat of fraud in today's competitive market. Studies show that fraud attempts increased 149% over the previous year in the first quarter of 2021 alone. Account takeover attacks increased majorly in the first quarter of 2023, going up by 427% compared to all of 2022 (Sarker, et al, 2021).

Fortunately, artificial intelligence innovations may have after all provided powerful tools to handle these challenges, and changing how financial institutions protect their resources and customers. By taking advantage from advanced AI algorithms and machine learning techniques, these systems can assess vast amounts of data in real-time to identify suspicious activities and prevent fraudulent transactions (Davenport and Ronanki, 2018).

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In corroboration, Malhotra,(2024) observes that, using AI to detect fraud is best for protecting financial transactions from fraudsters. With its ability to analyze vast amounts of data in real-time, detect patterns, and adapt to changing threats, AI in finance offers unmatched capabilities to financial institutions looking to protect their assets and customers (Malhotra, pp.1-6, 2024). In addition to detecting fraud, AI is transforming the financial industry by enhancing efficiency, customer experience, and financial inclusion, particularly; AI-powered chatbots has the potential to improve customer engagement and financial inclusion, with most Nigerian banks adopting chatbots to enhance customer experience (Abdulquadri et al., 2021, Chen *et al*, 2018).

AFI (2018) Kshetri (2021), Fazal (2023) are in agreement that about the potential to not only detect fraud, but also enhances financial inclusion. While AFI, is more concern however about the AI-powered financial technologies (fintech) unique rewards for enhancing women's inclusion, including efficiency gains, reduction of transaction costs, and personalizing services tailored to women's needs, Kshetri, is impressed with AI capacity to achieving financial inclusion, particularly in developing countries. AI has the capacity to help remove barricades to financial inclusion, making it possible and easy for people to participate in the official financial sector and enhancing economic growth (Fazal, 2023)

Understanding Fraud Detection

The traditional ways of detecting fraud in financial transactions often depend on manual processes and looking for suspicious things based on fixed rules. The rule-based systems of detecting fraud in financial institution involve predefined rules to identify suspicious transactions. These rules are based on patterns, thresholds, and anomalies in transaction data (Phua et al., 2010). It include Transaction Monitoring, which involve reviewing of transactions in real-time to identify suspicious activity (Kirkos et al., 2007), and Threshold-based rules which has to do with setting limits on transaction amounts or frequencies to detect unusual activity (Bolton & Hand, 2002). Manual review, which is another traditional method of detecting fraud in financial, can be time consuming as it deals with reviewing transactions and customer behavior to identify suspicious activity (Duman & Sahin, 2011).

While this works to some degree, it might not be able to keep up with the constantly changing tricks used by fraudsters. Besides, it can generate false positives, which can lead to redundant inquiries and wasted resources (Bolton & Hand, 2002). It can also create false negatives, which can lead to undetected fraudulent activity (Phua et al., 2010). This situation has for long made financial institution vulnerable to fraudulent activities, and detecting such activities is crucial to preventing financial losses. Thus traditional method has had difficulty handling the unstable tricks adopted by fraudsters. Fraudsters are people who commit fraud, which means tricking others to get money illegally.

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On the other hand, AI in finance uses advanced algorithms and machine learning techniques to check large amounts of data very quickly. These algorithms can find small patterns and abnormal activities, which might show fraud is happening. AI can often find fraud better and faster than the old or traditional methods used by humans. AI-powered algorithms can detect not only financial fraud but also breast cancer more accurately than human radiologists in the health care organisations (Rajpurkar et al., 2020).

Types of fraud in financial transactions

Fraud in financial transactions is certainly a major concern for persons, businesses, and financial firms, basically, because the median loss caused by occupational fraud is overwhelming, with some cases resulting in losses of money in their millions (ACFE, 2020)
Fraud in financial transactions encompasses various forms, including identity theft, credit card fraud, phishing scams, and account takeover:

- Identity theft transpires when an individual unlawfully acquires personal information to assume another person's identity for financial advantage. Identity theft comprises the unauthorized use of a person's personal information, such as name, Social Security number, or credit card number, to commit fraud or other crimes (Synovate, 2010).
- Credit card fraud occurs when someone uses a person's Credit Card to buy things or withdraw money without permission of the possessor. It involves the unauthorized use of someone's credit cards to make purchases or obtain cash advances (FBI, 2020).
- Phishing scams fool people into giving away important information like passwords or bank details. It involves the use of counterfeit emails, forged websites, or other communications to trick individuals into revealing sensitive information, such as login credentials or financial details (APWG, 2020).
- Account takeover is when a scammer enters your financial accounts without your permission. Account takeover is the unauthorized access and use of an analysis of a financial account, such as a bank account or investment account (FFIEC, 2019).
- Investment Fraud comprises the use of false or misleading information to convince persons to invest in fraudulent programmes or securities (SEC, 2020).
- Wire transfer fraud encompasses the unauthorized transfer of funds through wire transfer services (FBI, 2020).
- Check fraud consist of the use of checks to commit fraud, including check kiting and counterfeit checks (ABA, 2020).

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4.2. Challenges of Fraud Detection in Financial transactions in Nigeria

Detecting fraud in financial transactions in Nigeria's financial firms can be challenging as it is also in many other countries. It constitutes a foremost threat to the stability of the Nigerian financial system (NDIC, 2020), One main reason is that there are so many transactions to keep an eye on, consequently it's hard for people to check each one properly because there are just so many of them. Other reasons for the challenges include:

- **Fraudsters constantly change their tactics** to avoid detection. The import of this is that the systems we use in tracking fraudsters must also change to keep up with the changing tactics of fraudsters. Sometimes, these systems make mistakes and think that a normal transaction is actually fraud; this can cause trouble for customers and cause banks to lose business. There is need to be sure that AI, Services Company is following the rules about keeping people's information safe and following all the laws. This makes catching fraud even more complicated (Sarker, 2021).

- **Inadequate Technology:** lack of access to advanced technology, such as machine learning algorithms, to detect and prevent fraud can be a serious setback in detecting fraud in the financial industry in Nigeria. Lack of adequate technology is a major trial for Nigerian financial industry (Olatunji et al., 2019).

- **Lack of Regulatory Framework**: A weak regulatory framework can pose a major setback for financial firms to detect and prevent fraud. To enable functional fraud detection in the Nigerian financial industry a strong regulatory framework is essential for preventing and detecting fraud (CBN, 2020).

- **Corruption**: Corruption can make it difficult for financial firms to detect and prevent fraud. Nigeria is one of the most corrupt countries in the world (Transparency International, 2020), the level of corruption in virtually all sphere of activity in the country will certainly defy detecting of financial fraud in organisations.

It is without doubt that fraud has impacted negatively on financial firms in Nigeria significant, resulting in financial losses and damage to reputation.

Types of Artificial Intelligence and Machine learning capable of use in fraud detection

Artificial intelligence (AI) and machine learning (ML) are increasingly being used to detect and prevent fraud in various industries, including the financial industries. AI-powered fraud detection systems can reduce false positives by up to 50% and increase detection rates by up to 90% (McKinsey, 2020). There are several types of AI and ML that can be used in fraud detection. To start with, it is necessary to look at machine learning:

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E- ISSN: 3043 – 5463 ISSN: 1595 – 5842 VOLUME 2, ISSUE 2, 2025

Machine Learning Techniques

Machine learning techniques which are broadly adopted in fraud detection, identify patterns and anomalies in data, and include:

- **Supervised learning:** Supervised learning encompasses training a model on categorized data to forecast whether a new transaction is fraudulent. Supervised learning algorithms like decision trees and random forests can be effective in detecting fraud (Kotsiantis et al., 2006). Here the computer learns from branded examples. This is the same as teaching the computer by showing it examples of both fraud and non-fraud transactions; thereafter, it can make use of what it learned to spot similar patterns in new transactions.

- **Unsupervised Learning:** Unsupervised learning has to do with identifying patterns and anomalies in data without previous labeling. Unsupervised learning algorithms like clustering and anomaly detection can be very effective in identifying probable fraud cases (Bolton & Hand, 2002). Here the computer may certainly not need labeled data. It searches for patterns and strange things in the data all by itself. It has the ability to detect unusual actions that could mean fraud, without prior knowledge of them.

- **Deep Learning**: Deep learning comprises the use of neural networks to analyze complex patterns in data. It is notable that deep learning algorithms can be effective in detecting fraud in bulky datasets (LeCun et al., 2015).

AI Technologies

AI technologies are also adopted in fraud detection to advance the accuracy and efficiency of detection systems. Details are presented in what follow.

- **Explainable AI:** Explainable AI encompasses the provision of clear explanations for the decisions made by AI systems. Explainable AI has the capacity to detect fraud by providing insights into the decision-making process (Adadi & Berrada, 2018).

- **Deep Learning and Neural Networks:** Deep learning and neural networks are useful in analyzing complex patterns in data and detect potential fraud cases. Deep learning algorithms can be active in the detection of fraud in financial transactions (Schmidhuber, 2015).

From the foregoing, it is obvious that AI and ML are useful in detecting and preventing fraud and are being adopted by various industries including the financial industry to detect and prevent fraud, such as, Credit Card fraud detection and identity theft prevention, by analyzing patterns and anomalies in data, which helps in protecting consumers and businesses from financial losses.

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E- ISSN: 3043 – 5463 ISSN: 1595 – 5842 VOLUME 2, ISSUE 2, 2025

4.3 Potential of Artificial Intelligence to Support Surgeries in highly delicate Organs

In the health care industries, AI has enhanced preoperative planning by improving diagnosis, optimizing surgical plans, and ensuring patient privacy. In intraoperative guidance, AI has aided surgeons with real-time information, precise navigation, and augmented reality overlays to enhance surgical outcomes (PubMed Central, 2023). In surgical robotics, AI-driven systems offer more accurate and safer procedures, advanced control and manipulation, and improved human-robot collaboration. AI-powered robotic systems have exhibit the capacity to enhance surgical precision and ease complications in various procedures (Shademan *et al.*, 2016; Hashimoto *et al.,* 2020). AI-powered systems modernize surgical workflows, dropping process time and refining hospital efficiency (Hashimoto *et al*., 2020).

Application of AI in various Surgical Specialties

AI technologies are increasingly being integrated into surgical practices across different specialties offering improved precision, efficiency, and patient outcomes. The hospitals in Nigeria are progressively adopting AI-powered technologies to improve patient care and surgical outcomes (Oluwatola *et al.,* 2024). In colorectal surgery, AI proposes several benefits, including better diagnostic accuracy through the analysis of genetic data, allowing early detection and personalized treatment strategies. It simplifies non-invasive screening by assessing separate risk profiles, reducing the need for hostile processes such as colonoscopy. AI, aids in real-time polyp detection during colonoscopy, improving the effectiveness of this screening method and also improves virtual colonoscopy by refining the detection of colorectal polyps (Mendivil *et a.l*, 2020).

Mendivil *et al.* (2020) Artificial Intelligence has the potential of automating the analysis of capsule endoscopy images, thereby reducing interpretation errors and expediting lesion detection; to enhance blood tests which is executed by identifying biomarkers associated with colorectal cancer (CRC) for early detection and risk assessment. AI-driven technologies empower personalized patient care, refining patient satisfaction and decreasing recovery time

AI-based algorithms assist in predicting patient prognosis, guiding treatment decisions, and identifying potential drug targets. This is in Addition, to its potential to contribute to the reduction of interval cancers by improving the detection of flat or small polyps. At a population level, AI helps assess the risk of colorectal cancer, enabling more efficient screening strategies and resource allocation (Mitsala, et al, 2021).

Similar to colorectal surgeries, upper gastrointestinal surgeries also benefit from AI technologies, particularly in the diagnosis and treatment of conditions like esophageal cancer. AI algorithm analyzes endoscopic images and helps detect abnormalities or early-stage malignancies, enabling timely interventions.

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In corroboration, Popovic (2023) posits that Artificial Intelligence systems play a role in surgical planning, ensuring optimal approaches to resection and minimizing complications. In hepatobiliary surgery, AI aids in liver disease diagnosis, predicting patient outcomes, and optimizing liver resections. Machine learning models analyze liver imaging data to determine tumor margins and guide surgeons during the resection process.

Adoption of AI by Health Care Industries

Following our reviews, tests and analysis, our findings reveal that the Health Care Industry has adopted the use of AI in performing tasks:

Table 1: Adoption Rate of Artificial Intelligence Technologies in HealthCare Industries

Metric	HealthCare Industry 1-100	Frequency	Percentage
Adopted AI Technology	HealthCare Industry ABC	70	70%
Not Adopted AI Technology	HealthCare Industry XYZ	30	30%
Total			**100%**

Source: Survey by Researcher (2025).

Table 2: Type of AI Technologies Adopted in HealthCare Industries in Nigeria

Metric	Frequency	Percentage
Medical imaging analysis	40	57.1%
Predictive analytics	30	42.9%
Clinical decision support systems	25	35.7%
Chatbots or virtual assistants	20	28.6%
Other	15	21.4%

Source: Survey by Researcher (2025).

Table 3: Level of AI Adoption in HealthCare Industries in Nigeria 2020-2024

Level of Adoption	Frequency	Percentage
Low (1-2)	10	14.3%
Moderate (3)	30	42.9%
High (4-5)	30	42.9%

Source: Survey by Researcher (2025).

Table 4: Profits of AI Adoption in Support of Surgeries in Highly delicate Organs

Profit	Frequency	Percentage
Improved patient outcomes	50	71.4%
Enhanced efficiency	45	64.3%
Reduced costs	30	42.9%
Improved decision-making	40	57.1%

Source: Survey by Researcher (2025).

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The barriers to AI adoption by other organisations, ranged from lack of quality data, lack of skilled personnel, regulatory challenges, and Integration with existing systems as shown in Table 5.

Table 5: Barriers to AI Adoption by other HealthCare Organisations in Nigeria

Barriers	Frequency	Percentage
Lack of quality data	25	35%
Lack of skilled personnel	30	42.9%
Regulatory challenges	20	28.6
Integration with existing systems	25	35.7%

Source: Survey by Researcher (2025).

From the foregoing, it is apparent that the integration of AI in the healthcare industry has undoubtedly revolutionized surgical procedures, surgeries comprising delicate organs and benefit from AI potential to offer precision, accuracy, and expertise, making AI a treasured instrument in improving surgical results.

Principles of Corporate Governance

Corporate governance refers to the system of principles, practices, and processes by which an organization is directed and controlled. These principles were raised in three documents released since 1990: The UK Cadbury Report (1992), the Principles of Corporate Governance (OECD, 1999, 2004, 2015 and 2023), and the US Sarbanes–Oxley Act (2002).

The Cadbury and Organisation for Economic Co-operation and Development (OECD) reports, present general principles around which businesses are expected to operate to assure appropriate governance, resulting in, improved Performance, increased Investor Confidence, and Better Risk Management (Gompers et al., 2003, La Porta et al., 1998, Basel Committee, 2010). The Sarbanes–Oxley Act, informally referred to as Sarbox or Sox, is an attempt by the federal government in the United States to legislate several of the principles recommended in the Cadbury and OECD reports, including the rights and equitable treatment of shareholders.

OECD (2004); Cadbury (1992); Sarbanes, Oxley Act, (2002) explain that Organizations should respect the rights of shareholders, board of directors, and others by openly and effectively communicating information and encouraging them to participate in general meetings, for improved Performance (Gompers et al., 2003).

Role and responsibilities of the board:

The board is to review and challenge management performance, and integrity should be a fundamental requirement in choosing corporate officers and board capable of promoting ethical and responsible decision making and accountability (SOX, 2002).

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Regarding disclosure and transparency, Organizations must clarify and make publicly the roles and responsibilities of board and management to provide stakeholders with a level of accountability, implement procedures (OECD, 2004; Cadbury,1992).

Following OECD, the UK Cadbury, Adrian report, and the US Sarbanes, principles of Corporate Governance, Nigeria designed.

The Nigerian Code of Corporate Governance 2018

The Nigerian Code of corporate governance 2018 (the "Code") incorporates acceptable corporate governance standards to be followed by companies in Nigeria with view to institutionalize corporate governance best practices in Nigerian companies, promoting public awareness of crucial corporate values and ethical practices that enrich the integrity of the business environment. It comprises principles as, Board Oversight of company's management and business strategies, Shareholder Rights to have a say in important company decisions, Accountability and Transparency of companies to their shareholders, Risk Management by the board, Ethical Behavior by companies, Performance Evaluation by board.

Company and Allied Matters Act 2020

The Companies and Allied Matters Act 2020 amended by the Business Facilitation (Miscellaneous Provisions) Act 2022 represents the most recent legislative framework governing corporate governance within Nigeria. It has significantly reshaped corporate governance practices within Nigerian. The provisions it introduced include:

- Single Shareholder/Single Director Companies:

This creates space for Private companies to operate with a single shareholder. Small Companies may operate with a single shareholder and a single director. Small companies are those bodies which have a turnover not above N120, 000,000 annually and net assets of N60, 000,000. Private companies can operate with a sole shareholder. All companies, except small companies are to maintain a minimum of two directors; companies with foreign non-resident shareholders are permitted to operate as private companies with a sole shareholder.

- Electronic Meetings and Record-Keeping:

Embracing technological advancements, CAMA 2020 and the Business Facilitation Act endorse the conduct of electronic meetings, the maintenance of company records in electronic format, as well as electronic execution of documents, streamlining administrative processes, and enhancing efficiency.

- Board Structure and Composition:

The legislation mandates the chairman of the board in a public organisation not to simultaneously hold the position of chief executive officer or managing director within the

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same organization. Public companies are to include a minimum of one-third of independent directors on their boards, and restricted from serving on more than five boards simultaneously to avoid potential conflicts of interest, and to maintain directorial efficacy.

Notably amendments by Acts underscore a rigorous determination to revolutionize and reinforce corporate governance practices in Nigeria to align with worldwide standards fostering accountability, transparency, and sustainability within the corporate sector.

Fortunately, with the emergence of Artificial Intelligence and its capacity to aid in board functions, the principles of Corporate governance and the codes guiding compliance can have safe ride considering that Artificial Intelligence enables boards to make strategic and better decisions and is likely to become an essential competitive advantage.

5.0. CONCLUSION AND RECOMMENDATION

5.1. Conclusion

Artificial intelligence emerged as a fundamental force in surgery enhancing patient outcomes and transforming traditional surgical approaches. Overall, the evolution and application of AI in surgery promises a reshape of healthcare. The integration of AI in the healthcare industry has revolutionized surgical procedures and processes. Surgeries comprising delicate Organs benefit from AI potential to offer precision, accuracy, and expertise, making AI a treasured instrument in improving surgical results. The healthcare industry in Nigeria is increasingly adopting AI-powered technologies to improve patient care and surgical precision. Meanwhile, the detection of fraud is a significant challenge for financial firms in Nigeria, however, the application of AI in the finance industry has enabled a significant transformation with various applications in customer service, fraud detection, and predictive analytics. As financial industries in Nigeria continue to evolve, it is crucial for it to invest in AI-powered solutions, ensuring they stay competitive and efficient in the digital age.

5.2. Recommendation

To achieve the best of AI Potential in the financial industries and the health care organisations, the study recommends a multi-faceted approach, comprising the implementation of advanced technology, training and capacity building, investing in AI infrastructure, improvement of data quality, and strengthening the regulatory framework.

Competing Interest

The authors have declared that no conflicting interest exist in this study.

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