

# The Role of Artificial Intelligence and Machine Learning in Healthcare: Implications for Actuarial Models and Predictive Analytics in Lagos State Nigeria

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## ABSTRACT

This paper examined the role of artificial intelligence and machine learning in healthcare using implications for actuarial models and predictive analytics in Lagos State, Nigeria. Four research questions guided the study. The descriptive survey research design was adopted for this study. The population of this study comprised of all the healthcare professionals in Lagos State University Teaching Hospital (LASUTH) and all actuarial managers from the 27 insurance companies in Lagos State, Nigeria. The purposive sampling technique was used to select an actuarial manager from each of the 27 insurance companies in Lagos State, making a total of 27 actuarial managers that participated in the study. Purposive sampling technique was also used to select 30 healthcare professionals in LASUTH. In total, the sample size consisted of 57 respondents. The study used a structured questionnaire called "Role of Artificial Intelligence and Machine Learning in Healthcare Questionnaire" (RAIMLHQ) to gather data on the application of AI and ML in healthcare. The questionnaire was divided into two sections and responses were based on a 4-point Likert scale. The researchers administered the questionnaire directly, and descriptive statistics were used to analyze the bio-data. The results showed that healthcare professionals and actuarial managers had low knowledge of AI and ML's application in healthcare. However, they rated AI and ML technologies as effective in improving healthcare outcomes in Lagos State. Furthermore, they agreed on the implications of integrating AI and ML into actuarial models for healthcare insurance in Lagos State.

**Keywords:** Artificial intelligence, Machine Learning, Healthcare, Actuarial Models, Predictive Analytics

## INTRODUCTION

Technology is currently revolutionizing every facet of life in that it is gradually changing perspectives of how different tasks are carried out in recent times presenting more effective solutions to problems and inevitably cutting through several industries. The healthcare sector is however not left in the dark as technology is seeping through to make healthcare delivery very safe, efficient, accessible, cheap and reliable (Adeyemi, Adesokan, Adediran & Ige, 2018) However, despite the numerous successes in healthcare so far in the world, it should be noted that utilizing technology in healthcare is by far one of the most complex tasks compared to other industries. Mohammed and Shehu (2023) opined that healthcare is a complex adaptive system. This, presumably, may be the reason some developing countries including Nigeria are yet to fully adopt the use of technology in healthcare delivery, especially the artificial intelligence and machine learning.

In recent years, the healthcare industry has witnessed a significant transformation through the integration of Artificial Intelligence (AI) and Machine Learning (ML) technologies. Nigeria, as the most populous country in Africa, faces several challenges in its healthcare sector, including inadequate infrastructure, limited access to quality healthcare services, and high disease burden. Within Nigeria, Lagos State serves as a key economic hub and faces unique healthcare challenges due to its densely populated urban areas and diverse healthcare needs. Artificial Intelligence can be described as the simulation of the human mind to make computers think and act like humans by performing tasks like learning and problem-solving (Zhang & Lu, 2021)

In simple terms, artificial intelligence (AI) can be defined as the thinking behaviour by machines as opposed to that of the human innate thinking ability of natural intelligence. AI is designed to simulate cognitive behavior that is as close to that of the human brain in its ability to receive commands and perform various tasks (Adejumo, Alegbejo-Olarinoye, Akanbi, Ajamu, Akims & Koroye, 2023). AI has been applied to healthcare settings to create individualized treatment programs and diagnostic tools. It is essential to make sure that AI is created ethically and for the good of mankind as it continues to advance (Madhusudana, Kolin, Senthil & Nirmal, 2019). Artificial Intelligence (AI) is developing at a rapid pace, which opens up possibilities for its use in clinical settings and might completely transform healthcare delivery. In order to give healthcare professionals, the information and resources they need to successfully apply AI in patient care, it is critical to record and distribute information about the technology's application in clinical settings. According to Eli-Chukwu (2019), AI algorithms can analyze vast amounts of patient data, including medical imaging scans, Electronic Health Records (EHRs), and genetic information, to assist healthcare professionals in making more accurate diagnoses. In Lagos State, AI-powered tools can help doctors identify diseases at an early stage, leading to better treatment outcomes for patients.

On the other hand, machine learning is a good enough statistical mode which involves the use of observed clinical data to predict outcomes and or categorize observations in future data. In the past decade, machine learning (ML) for healthcare has been marked by particularly rapid progress. Initial groundwork has been laid for many healthcare needs that promise to improve patient care, reduce healthcare workload, streamline healthcare processes and empower the individual (Jovel & Greiner, 2021). Machine learning is an aspect of Artificial Intelligence which utilizes computers to detect unseen perception of healthcare data without using any computer programming (Daniel & Adkins, 2017). In a recent research by Orion Health, it was stated that there are two essential requirements for machine learning to thrive in healthcare (Adeyemi, et al., 2018). The first is an intelligent algorithm and the other is rich datasets. These intelligent algorithms are able to interface and investigate clinical the enormous amount of data present and predict recommended treatment plans for each unique patient. According to Adigwe, Onavbavba and Sanyaolu (2024), AI and ML models can analyze historical healthcare data to predict health trends, disease outbreaks, and patient outcomes. By leveraging predictive analytics, healthcare providers in Lagos State can optimize resource allocation and better plan for future healthcare needs in the region.

Studies of Adigwe et al. (2024), Abdullahi and Fakieh (2020) emphasized that AI and ML have significant implications for actuarial models and predictive analytics in a dynamic and diverse healthcare landscape. AI and ML improve the accuracy and effectiveness of predictive analytics models in healthcare. By leveraging advanced algorithms, actuarial models can better predict healthcare utilization, disease prevalence, and other factors that impact insurance claims and cost projections in Lagos State. In the opinion of Adeoye, Okoye, Ofofode, Odeyemi, Addy and Ajayi-Nifise (2024), AI technologies facilitate the development of personalized insurance products tailored to individual health profiles. By incorporating ML algorithms into actuarial models, insurance providers in Lagos State can offer more customized coverage options based on the specific healthcare needs and risks of their policyholders. Rolsan and Ahmad (2023) averred that AI and ML tools help insurers identify fraudulent claims and irregularities within their systems. By integrating these technologies into actuarial models and predictive analytics processes, insurance companies in Lagos State can enhance fraud detection capabilities and minimize financial losses due to fraudulent activities.

In the context of Lagos State, Nigeria, where healthcare challenges are complex and diverse, the integration of AI and ML technologies holds immense potential for transforming the delivery of healthcare services and shaping the future of actuarial models and predictive analytics in the region. With a growing population and increasing demand for quality healthcare services, Lagos State faces significant pressures in managing healthcare resources effectively and efficiently. The application of AI and ML in healthcare has the potential to address these challenges by enabling healthcare providers and insurance companies to leverage data-driven insights for better decision-making and resource allocation. In a diverse and dynamic healthcare landscape like Lagos State, the implications of AI and ML for actuarial models and predictive analytics are far-reaching. By incorporating advanced technologies into their operations, insurance companies in the region can unlock new

opportunities for improving risk assessment, optimizing resource allocation, and delivering tailored insurance products to meet the evolving needs of their policyholders.

The current use of AI and ML in actuarial models in Lagos State is limited, with many insurance companies relying on traditional methodologies for risk assessment and pricing strategies. This study aims to highlight the potential benefits of integrating AI and ML algorithms into actuarial processes to enhance accuracy and efficiency in predicting healthcare costs and trends. This information therefore formed the need to investigate this study.

### Statement of the Problem

In an ideal scenario, the healthcare system in Lagos State, Nigeria, would be characterized by efficient resource allocation, accurate risk assessment, and personalized insurance coverage tailored to individual health profiles. Actuarial models and predictive analytics would leverage cutting-edge Artificial Intelligence (AI) and Machine Learning (ML) technologies to optimize healthcare delivery, mitigate risks, and enhance patient outcomes.

However, the current healthcare landscape in Lagos State faces challenges in achieving this ideal state. Limited access to quality healthcare services, inconsistent risk assessment methodologies, and outdated predictive analytics models hinder the ability of insurance companies and healthcare providers to meet the evolving needs of the population effectively. Without advanced technologies like AI and ML integrated into actuarial models and predictive analytics, the healthcare sector in Lagos State may struggle to keep pace with rapid advancements in healthcare data analysis and risk management practices. This paper aims to bridge the gap between the ideal situation and the present reality in healthcare delivery and insurance services in Lagos State. The researchers' observed that existing insurance products in Lagos State lack personalization and customization based on individual health profiles and risk factors. By exploring the role of AI and ML in developing personalized insurance coverage, this paper seeks to address the gap in tailored healthcare solutions that align with the diverse healthcare needs of the patients in Lagos State, Nigeria. The following research questions guided the study:

1. What are the knowledge of the application of artificial intelligence and machine learning in healthcare?
2. How effective will AI and ML technologies in improving healthcare outcomes and patient care in Lagos State?
3. What are the implications of integrating AI and ML into actuarial models for healthcare insurance in Lagos State?
4. How can predictive analytics utilizing AI and ML enhance healthcare planning and resource allocation?

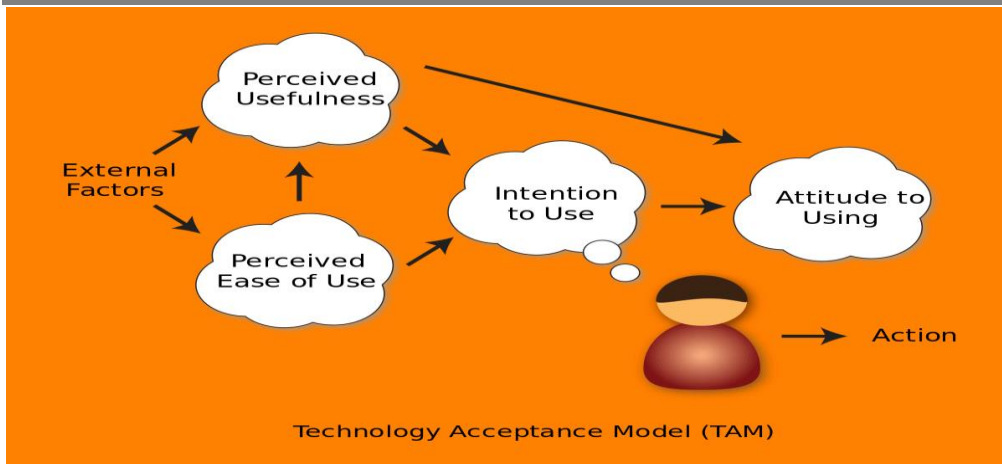
### Theoretical Underpinning

#### Technology Acceptance Model

The Technology Acceptance Model (TAM) was propounded by Fred Davis in 1985. It is a theory that models how users come to accept and use a technology. The model suggests that when users are presented with a new technology, a number of factors influence their decision about how and when they will use it. It has since been widely used in various fields to understand the factors that influence individuals' acceptance and adoption of technology. The main factors are perceived usefulness (PU) and perceived ease of use (PEOU).

**Perceived Usefulness (PU):** This is the degree to which a person believes that using a particular system would enhance their job performance. If a user perceives a technology as useful, they are more likely to adopt it.

**Perceived Ease of Use (PEOU):** This is the degree to which a person believes that using a particular system would be free from effort. If a technology is perceived as easy to use, it is more likely to be adopted.



According to TAM, these two factors significantly influence users' attitudes towards and intentions to adopt a new technology. TAM is a simple and straightforward model that focuses on key determinants of technology acceptance, making it easy to understand and apply. Research has shown that perceived usefulness and perceived ease of use are strong predictors of users' actual behavior and adoption of technology, making TAM a reliable model for studying technology acceptance. TAM has been widely applied across various contexts and technologies, providing valuable insights into users' behavioral intentions towards adopting new technologies.

TAM primarily focuses on individual-level factors and may not capture broader contextual influences that can affect technology acceptance, such as organizational, social, or cultural factors. The original TAM does not explicitly consider factors that may change over time, such as user experience, external influences, or evolving technology features, which may limit its ability to account for the evolving nature of technology adoption.

In relation to this study, TAM posits that perceived usefulness plays a crucial role in determining technology adoption. In this study, stakeholders in the healthcare sector in Lagos State will need to perceive AI and ML technologies as useful tools for enhancing healthcare delivery, actuarial modeling, and predictive analytics. For example, healthcare professionals may see AI algorithms as valuable in diagnosing diseases early or predicting patient outcomes, leading to improved healthcare practices and decision-making. Another factor highlighted in TAM is perceived ease of use, which refers to the degree to which individuals believe that using a new technology is effortless. For AI and ML technologies to be effectively integrated into healthcare systems in Lagos State, stakeholders must perceive them as user-friendly and intuitive. This can influence their willingness to learn and adopt these technologies for implementing actuarial models and predictive analytics.

## METHOD

**Research design:** The descriptive survey research design was adopted for this study.

**Population and Sample:** The population of this study comprised of all the healthcare professionals in Lagos State University Teaching Hospital (LASUTH). Data derived from the Lagos State Ministry of Health indicated that Lagos State only has one tertiary health facility which is the Lagos State University Teaching Hospitals (LASUTH). All the 30 healthcare professionals formed in the hospital formed the population of the study. More so, the population of this study consisted of all actuarial managers from the 27 insurance companies in Lagos State Nigeria. This figure was derived from the National Insurance Commission as at 2024.

The purposive sampling technique was used to select an actuarial manager from each of the 27 insurance companies in Lagos State, making a total of 27 actuarial managers that participated in the study. Purposive sampling technique was also used to select 30 healthcare professionals in LASUTH. In total, the sample size consisted of 57 respondents.

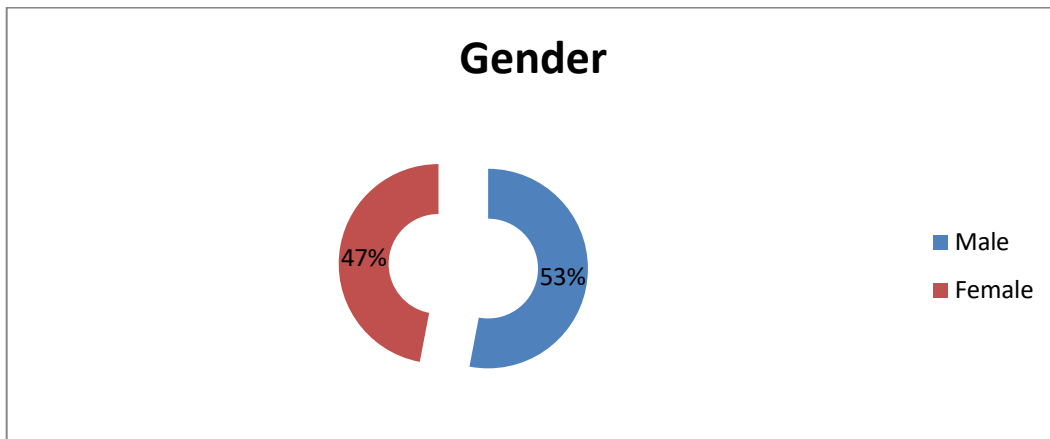
**Data Collection Instrument:** Data for this study were collected by means of structured questionnaire developed by the researcher. The questionnaire is titled "Role of Artificial Intelligence and Machine Learning

in Healthcare Questionnaire” (RAIMLHQ). The questionnaire is sub-divided into two sections; A and B. Section A contains information on the demographic profile of the respondents while section B is sub-divided into four clusters: I – IV addressing the research questions. The response option was structured on a 4-point Likert scale of Strongly Agree (SA); Agree (A); Disagree (D); and Strongly Disagree (SD) with values 4, 3, 2 and 1 respectively.

**Data Collection and Analysis:** The direct delivery strategy was utilized to administer the questionnaire. Using this method, the researchers personally delivered copies of the questionnaire to the respondents. Descriptive statistics of frequency counts and percentages was employed to analyze the bio-data of the respondents while mean score was used to analyze the data to answer the research questions. The benchmark of 2.50 mean score was set for the decision rule for the mean scores. Any mean score below 2.50 is adjudged disagreed/ineffective while any mean score above 2.50 is rated agreed./effective

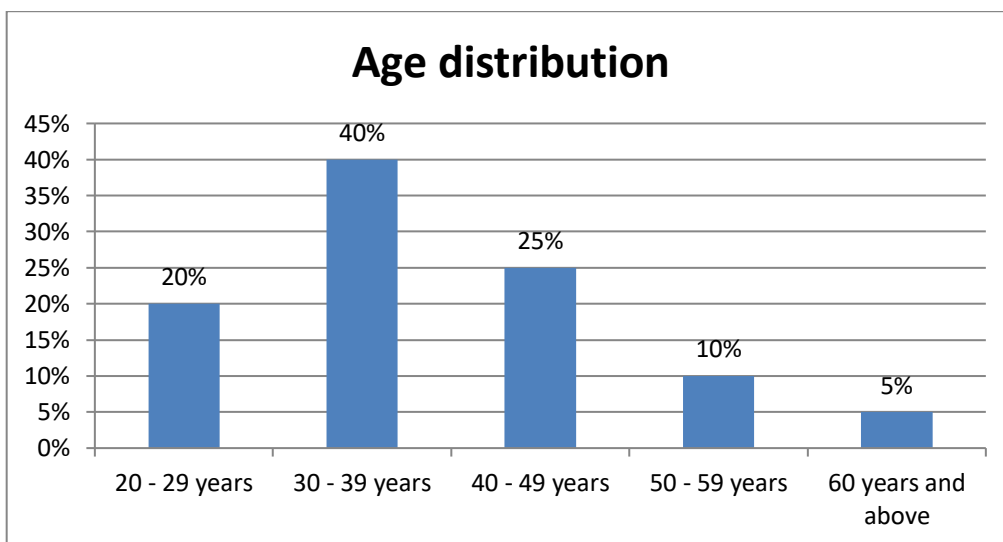
## RESULTS

### Personal Profile of the Respondents



**Figure 1: Respondents’ personal profile based on gender**

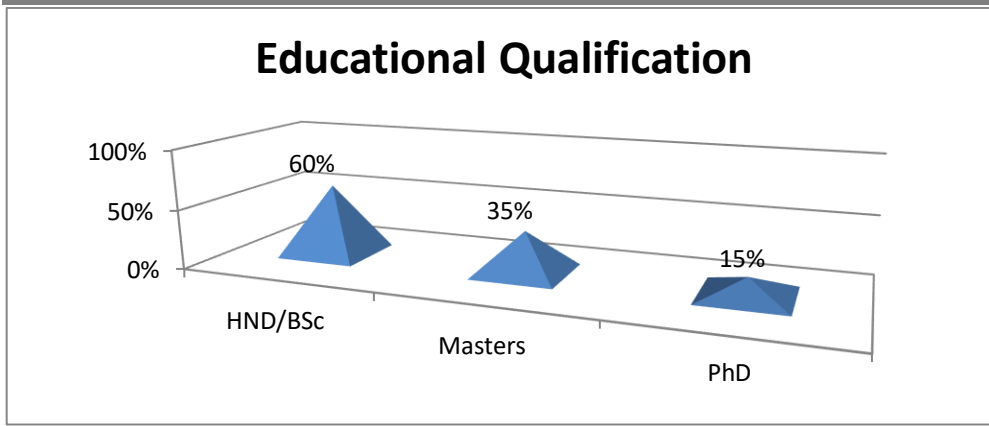
Figure 1 reveals that 53% of the respondents are male while 47% of the respondents are females.



**Figure 2: Respondents’ personal profile based on age**

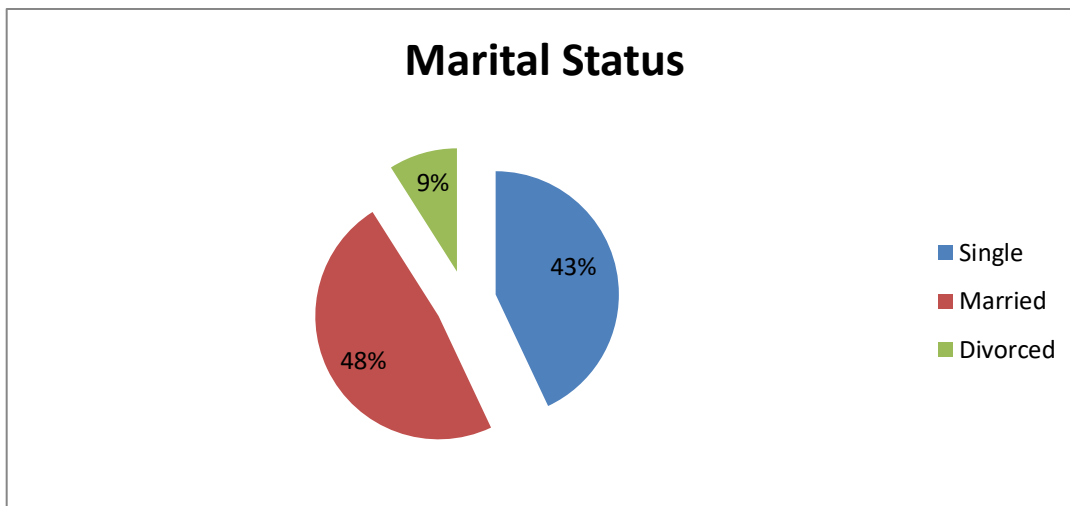
Figure 2 reveals that 20% of the respondents (11 respondents) were between age 20 – 29 years; 40% (representing 23 respondents) were between age 30 – 39 years; 25% (representing 14 respondents) were between ages 40 – 49 years; 10% (representing 6 respondents) were between ages 50 – 59 years and 5% (representing 3 respondents) were above 60 years





**Figure 3: Respondents’ personal profile based on educational qualification**

Figure 3 reveals that 60% of the respondents have HND/BSc certification; 35% of the respondents have masters certification; and 15% of the respondents have PhD certification.



**Figure 4: Respondents’ personal profile based on marital status**

Figure 4 reveals that 43% of the respondents are single; 48% of the respondents are married while 9% of the respondents are divorced.

**Research Question 1:** What are the knowledge of the application of artificial intelligence and machine learning in healthcare?

**Table 1: Respondents’ ratings on the knowledge of the application of artificial intelligence and machine learning in healthcare**

S/N	Items	Healthcare administrators			Actuarial mangers		
		X	SD	Remarks	X	SD	Remarks
1	I understand how AI and ML help in managing healthcare resources efficiently	2.28	0.61	Disagree	2.33	0.65	Disagree
2	I know how ML helps predict healthcare costs	2.39	0.58	Disagree	2.52	1.01	Agree
3	I am aware of AI tools used for analyzing patient data	2.53	0.57	Agree	2.12	0.84	Disagree

4	I understand how AI and ML improve accuracy in healthcare predictions	2.45	0.55	Disagree	2.04	0.62	Disagree
5	I know how AI is applied to optimize healthcare insurance plans	2.42	0.67	Disagree	2.62	0.92	Agree
	<b>Cluster Mean</b>	<b>2.41</b>		<b>Disagree</b>	<b>2.33</b>		<b>Disagree</b>

Data in Table 1 revealed that items 3 with mean score 2.53 was rated agreed while items 1, 2, 4 and 5 with mean scores 2.28, 2.39, 2.45 and 2.42 were rated disagreed by healthcare administrators. Actuarial managers agreed on items 2 and 5 with mean scores 2.52 and 2.62 and disagreed on items 1, 3, and 4 with mean scores 2.33, 2.12 and 2.04. The cluster means of 2.41 and 2.33 summarized that healthcare administrators and actuarial managers had low knowledge of the application of artificial intelligence and machine learning in healthcare.

**Research Question 2:** How effective will AI and ML technologies in improving healthcare outcomes in Lagos State?

**Table 2: Respondents’ ratings on the effectiveness of AI and ML technologies for improving healthcare outcomes**

S/N	Items	Healthcare administrators			Actuarial managers		
		X	SD	Remarks	X	SD	Remarks
6	AI and ML applications will reduce the time needed for diagnostic procedures in Lagos State hospitals	3.52	0.53	Effective	3.33	0.66	Effective
7	Patient treatment outcomes will improve due to the use of AI and ML in Lagos State healthcare institutions	3.49	0.56	Effective	3.35	0.63	Effective
8	AI and ML technologies will reduce the occurrence of medical errors in Lagos State healthcare systems	3.52	0.50	Effective	3.47	0.58	Effective
9	The integration of AI and ML will improve patient monitoring and follow-up care in Lagos State	3.48	0.64	Effective	3.42	0.68	Effective
10	AI and ML will contribute to better management of healthcare resources in Lagos State.	2.65	0.72	Effective	3.46	0.74	Effective
	<b>Cluster Mean</b>	<b>3.33</b>		<b>Effective</b>	<b>3.41</b>		<b>Effective</b>

Data in Table 2 shows that items 6 – 10 with their respective mean scores of 3.52, 3.49, 3.52, 3.48, and 2.65 were rated effective by healthcare administrators while scores 3.33, 3.35, 3.47, 3.42, and 3.46 were rated effective by actuarial managers. The cluster means of 3.33 and 3.41 summarized that healthcare administrators and actuarial managers rated that AI and ML technologies will be effective in improving healthcare outcomes in Lagos State.

**Research Question 3:** What are the implications of integrating AI and ML into actuarial models for healthcare insurance in Lagos State?

**Table 3: Respondents’ ratings on the implications of integrating AI and ML into actuarial models for healthcare insurance**

S/N	Items	Healthcare administrators			Actuarial managers		
		X	SD	Remarks	X	SD	Remarks
11	The use of AI and ML in actuarial models will reduce the cost of healthcare insurance in Lagos State	3.28	0.87	Agree	3.01	0.62	Agree
12	AI and ML technologies will enhance the predictive capabilities of actuarial models in healthcare insurance	3.42	0.52	Agree	3.43	0.48	Agree
13	AI and ML will contribute to more efficient claims processing in healthcare insurance	2.55	0.74	Agree	3.42	0.76	Agree
14	The adoption of AI and ML in actuarial models will improve patients’ satisfaction with healthcare insurance services	3.22	0.83	Agree	2.65	0.63	Agree
15	AI and ML applications in actuarial models will facilitate more accurate pricing of healthcare insurance premiums	3.05	0.87	Agree	2.84	0.78	Agree
	<b>Cluster Mean</b>	<b>3.10</b>		<b>Agree</b>	<b>3.07</b>		<b>Agree</b>

Data in Table 3 reveals that items that items 11 – 15 have respective mean scores of 3.28, 3.42, 2.55, 3.22, and 3.05 as rated by healthcare administrators while mean scores 3.01, 3.43, 3.42, 2.65 and 2.84 were rated by actuarial managers. The cluster mean of 3.10 and 3.07 means that healthcare administrators and actuarial managers agreed on the implications of integrating AI and ML into actuarial models for healthcare insurance in Lagos State

**Research Question 4:** How can predictive analytics utilizing AI and ML enhance healthcare planning and resource allocation in Lagos State?

**Table 4: Respondents’ ratings on the predictive analytics utilizing AI and ML to enhance healthcare planning and resource allocation**

S/N	Items	Healthcare administrators			Actuarial managers		
		X	SD	Remarks	X	SD	Remarks
16	Predictive analytics using AI and ML can improve the allocation of medical resources	3.46	0.72	Agree	3.34	0.67	Agree
17	AI and ML can make it easier to	2.56	0.62	Agree	3.38	0.58	Agree



	plan for future healthcare demands						
18	Predictive analytics can help identify areas needing more healthcare resources	3.39	0.61	Agree	3.31	0.71	Agree
19	Using AI and ML can improve emergency response planning in healthcare	2.55	0.63	Agree	3.36	0.82	Agree
20	AI and ML can help manage patient flow in hospitals more effectively	3.27	0.73	Agree	3.32	0.73	Agree
	<b>Cluster Mean</b>	<b>3.05</b>		<b>Agree</b>	<b>3.34</b>		<b>Agree</b>

Data in Table 4 reveals that items 16 – 20 with their respective mean scores of 3.46, 2.56, 3.39, 2.55 and 3.27 were rated agreed by healthcare administrators while mean scores 3.34, 3.38, 3.31, 3.36 and 3.32 were rated agreed by actuarial managers. The cluster means of 3.05 and 3.34 summarized that predictive analytics utilizing AI and ML will enhance healthcare planning and resource allocation in Lagos State

## DISCUSSION OF FINDINGS

The finding in research question one revealed that healthcare administrators and actuarial managers had low knowledge of the application of artificial intelligence and machine learning in healthcare. This means that healthcare administrators and actuarial managers are not very familiar with how artificial intelligence (AI) and machine learning (ML) are being used in the healthcare sector. This suggests a gap in their understanding or awareness of these technologies' applications in their field. This finding supported the finding of Amaro (2022) that participants had a basic knowledge of artificial intelligence, but they lacked a strong grasp of its technical aspects. Efforts to educate health providers regarding artificial intelligence may be targeted at a thorough classification of its subsets and their peculiarities. Conversely, the finding was opposed by Adigwe et al. (2024) that more than half of the respondents (57.8%) disagreed with the notion that the adoption of artificial intelligence in the Nigerian healthcare sector could result in job losses. Two-thirds of the participants (66.7%) were of the view that the integration of artificial intelligence in healthcare will augment human intelligence. Three-quarters (77%) of the respondents agreed that the use of machine learning in Nigerian healthcare could facilitate efficient service delivery.

The finding in research question two revealed that healthcare administrators and actuarial managers rated that AI and ML technologies will be effective in improving healthcare outcomes in Lagos State. Healthcare administrators and actuarial managers—believe that the use of artificial intelligence (AI) and machine learning (ML) technologies has the potential to significantly enhance the quality and efficiency of healthcare services in Lagos State. They have a positive perception of the impact these technologies can have on healthcare outcomes. This finding agreed that respondents were confident that the adoption of artificial intelligence in healthcare will augment human intelligence and generate new jobs as opposed to the popular belief that its use can lead to job loss (Butcher and Beridze, 2019; Abdullah and Fakieh, 2020). This is similar to a study undertaken in Korea (Oh, Kim, Choi, Lee, Hong & Kwon 2019)

The finding in research question three showed that healthcare administrators and actuarial managers agreed on the implications of integrating AI and ML into actuarial models for healthcare insurance in Lagos State. This means that both healthcare administrators and actuarial managers have a shared understanding regarding the effects and potential benefits or challenges of using artificial intelligence (AI) and machine learning (ML) in actuarial models for healthcare insurance. They likely see similar outcomes or impacts that this integration could have on the healthcare insurance industry in Lagos State. This was in line with Hoyer, Kroschke, Schmitt, Kraume and Shankar (2020) that chatbots and virtual assistants powered by AI technologies offer real-time assistance and support to customers throughout their insurance journey. By leveraging natural

language processing and machine learning algorithms, chatbots can engage with customers in natural language conversations, answer queries, provide information, and assist with policy inquiries, claims processing, and other insurance-related tasks, enhancing the overall customer experience and satisfaction (Nuruzzaman & Hussain, 2020; Akindote, Adegbite, Dawodu, Omotosho, Anywawu & Maduka, 2023).

The finding in research question four revealed that predictive analytics utilizing AI and ML will enhance healthcare planning and resource allocation in Lagos State. This finding was in tandem with the finding of Adeoye, et al., (2024) that through predictive analytics, AI algorithms can anticipate customer needs and preferences, allowing insurers to offer timely and relevant services, thereby enhancing customer satisfaction and loyalty. Moreover, AI-powered chatbots and virtual assistants serve as accessible and responsive touchpoints for customers, providing instant support, guidance, and personalized recommendations throughout the insurance lifecycle. By streamlining communication channels and offering seamless interactions, AI technologies strengthen the bond between insurers and customers, fostering long-term relationships built on trust and transparency. The integration of AI in personalized insurance products represents a transformative pathway towards enhanced customer engagement.

## CONCLUSION

The role of artificial intelligence and machine learning in healthcare holds tremendous potential for revolutionizing healthcare systems in Lagos State, Nigeria. By harnessing these technologies, actuarial models and predictive analytics can be significantly enhanced, leading to more accurate risk assessments, better resource allocation, and improved patient outcomes. Implementation of AI and ML in healthcare can also help in early disease detection, personalized treatment plans, and overall cost reduction for both healthcare providers and patients. However, it is important to address challenges such as data privacy concerns, regulatory frameworks, and ensuring equitable access to these technologies for all individuals in Lagos State. Overall, the integration of AI and ML in healthcare in Lagos State has the potential to greatly benefit the healthcare ecosystem and improve the quality of care for its residents.

## RECOMMENDATIONS

Based on the findings, the following recommendations were made:

1. Healthcare centers in Lagos State should invest in training their staff, including healthcare professionals on how to effectively utilize AI and ML technologies in healthcare. This will ensure that they can leverage these tools to improve patient care and optimize predictive analytics.
2. Actuarial managers should embrace AI and ML as powerful tools to enhance actuarial modeling and predictive analytics, enabling more accurate risk assessment and better financial planning.
3. Healthcare professionals should advocate for investment in AI and ML technologies within healthcare centers to drive innovation and enhance the quality of care for patients in Lagos State.
4. Lagos State University Teaching Hospital should provide continuous training and education to healthcare staff on how to effectively utilize AI tools and interpret machine learning outputs for better decision-making.

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