Influence of Insurance Technology on the Sustainability of Insurance Companies in South West, Nigeria

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Abstract
The study examined the influence of insurance technology on the sustainability of insurance companies in South West, Nigeria. The study adopted a descriptive survey research design. The population under consideration consists of insurance industry stakeholders in South West, including insurance companies, regulatory bodies, and consumers. A stratified random sampling technique was employed to ensure representation from each stratum. The strata include insurance companies, regulatory bodies (such as the National Insurance Commission), and consumers. This approach ensures a diverse and inclusive sample that accurately reflects the various perspectives within the insurance ecosystem. The sample size of the study comprised 70 respondents from various insurance companies operating in South West and 45 respondents from National Insurance Commission and other relevant regulatory bodies in the region were which made up a total sample size of 115 respondents. A research instrument titled "Influence of Insurance Technology on the Sustainability of the Nigerian Insurance Industry Questionnaire" (IITSNIIQ) was designed by the researcher to provide relevant information to the study. Three (3) research questions were raised and answered while one (1) hypothesis was tested at the significance level of 0.05. Data were analyzed using descriptive statistics and inferential statistics such as Pearson Product Moment Correlation and regression analysis. Findings in this study revealed that the extent of adoption and integration of insurance technology into the Nigerian Insurance Market work processes is high. The study also revealed series of technological innovations examined in this study have been adopted by Nigerian insurance companies. Based on the findings, the study recommended that insurance companies in Ekiti State should prioritize investments in robust technological infrastructure which includes upgrading software systems, implementing secure data storage solutions, and ensuring the scalability of IT frameworks to accommodate future advancements.

Keywords: Insurance Technology, Integration, Sustainability, Adoption, Insurance Market.

1.0 Introduction

The Nigerian insurance market has witnessed significant developments over the years, marked by increased competition, regulatory reforms, and a growing awareness of the importance of insurance in risk mitigation and financial protection (Osunleye, 2018). Nigeria, as one of the leading economies in Africa, has shown a remarkable appetite for technological innovation across various sectors. According to Bussmann (2017) the insurance industry, however, is at a critical juncture where the adoption of technology can be a catalyst for sustainable growth and resilience. Catlin & Lorenz (2017) emphasized that the integration of technology within the insurance sector has the potential to reshape traditional business models, enhance operational efficiency, and improve overall sustainability. In recent years, global trends have demonstrated the transformative impact of InsurTech on insurance markets, leading to increased customer engagement, innovative product offerings, and improved risk management practices. Recognizing the global shift

towards digitalization in the insurance industry, it is imperative to explore how these technological advancements specifically influence the sustainability of the Nigerian insurance market.

The influence of insurance technology, commonly referred to as InsurTech, on the sustainability of the Nigerian insurance industry is profound and far-reaching, encompassing various aspects that contribute to the industry's long-term viability and resilience (Osunleye, 2018). Technological advancements have revolutionized the landscape of the insurance sector in Nigeria, fundamentally transforming traditional business models and operational practices. InsurTech solutions leverage cutting-edge technologies such as artificial intelligence, data analytics, blockchain, and mobile applications to enhance efficiency, improve customer experience, and mitigate risks, thereby fostering sustainability in multiple dimensions.

Acoording to Chesbrough (2010) one of the primary ways InsurTech influences the sustainability of the Nigerian insurance industry is through enhanced operational efficiency. By automating and streamlining processes such as underwriting, claims processing, and policy management, InsurTech solutions enable insurance companies to reduce administrative costs, improve turnaround times, and optimize resource allocation. This operational efficiency not only drives profitability but also ensures that insurance providers can effectively manage their operations and remain competitive in the market. Furthermore, Christensen (2015) posited that InsurTech facilitates greater accessibility and inclusivity within the Nigerian insurance industry. Through digital platforms, mobile applications, and online distribution channels, InsurTech enables insurers to reach previously underserved segments of the population, including those in remote areas or with limited access to traditional insurance channels. By democratizing access to insurance products and services, InsurTech contributes to broader financial inclusion efforts, thereby enhancing the industry's sustainability by expanding its customer base and spreading risk across a more diverse portfolio of policyholders.

Christensen, Bartman & Van Bever (2016) also affirmed that InsurTech solutions play a pivotal role in improving risk management practices within the Nigerian insurance industry. By leveraging advanced data analytics and predictive modeling techniques, insurers can gain deeper insights into risk profiles, anticipate emerging trends, and proactively mitigate potential losses. Chuang, Liu & Kao (2016) asserted that this proactive approach to risk management not only enhances insurers' ability to withstand adverse events but also contributes to the industry's overall stability and resilience, thereby promoting sustainability in the long run. In addition, InsurTech fosters innovation and product development within the Nigerian insurance industry. By enabling rapid prototyping, testing, and iteration of new insurance products and services, InsurTech empowers insurers to adapt to evolving customer needs, market trends, and regulatory requirements. This ability to innovate and evolve in response to changing circumstances is essential for the industry's sustainability, as it ensures that insurers remain relevant and competitive in a dynamic and competitive market environment.

Furthermore, Cornforth, Sood, & Tellis (2011) stressed that the influence of InsurTech on the sustainability of the Nigerian insurance industry extends into customer engagement and experience. InsurTech innovations, such as digital platforms and mobile applications, facilitate seamless interactions between insurers and policyholders. This improved accessibility and user-friendly interfaces not only enhance customer satisfaction but also contribute to customer retention, a critical factor for the sustained success of insurance companies. InsurTech also addresses longstanding challenges related to fraud detection and prevention. Advanced technologies, including machine learning algorithms and data analytics, empower insurers to identify suspicious patterns and anomalies in real-time, thereby minimizing fraudulent claims (Dapp, 2014). This not only protects insurers from financial losses but also ensures the fair distribution of costs among policyholders, promoting trust and integrity within the industry.

The influence of InsurTech on the sustainability of the Nigerian insurance industry is a transformative force that touches upon operational efficiency, customer engagement, risk management, fraud prevention, regulatory compliance, and adaptability to global trends. As the industry embraces technological advancements, it not only enhances its current practices but also lays the foundation for a more resilient and sustainable future. It is against this backdrop this study investigated influence of insurance technology on the sustainability of insurance companies in Ekiti State, Nigeria.

In recent years, the Nigerian insurance market has witnessed a notable surge in the integration of insurance technology, commonly referred to as InsurTech, into its operational landscape. While this technological shift holds the promise of transforming traditional practices, enhancing efficiency, and broadening market access, it concurrently introduces a set of complex challenges that warrant careful examination. Foremost among these challenges is the potential digital divide within the Nigerian population. While InsurTech has the capacity to improve accessibility and inclusivity, there is a risk that segments of the population, particularly those with limited technological literacy or access to digital infrastructure, may be excluded from the benefits of these advancements. This raises questions about the equitable distribution of insurance services and the broader impact on societal well-being. Furthermore, the rapid pace of technological innovation within the insurance sector has outstripped the regulatory frameworks in place, posing a significant challenge to effective governance. The existing regulatory landscape may struggle to keep pace with the dynamic and evolving nature of InsurTech, potentially leading to gaps in consumer protection, inadequate risk management, and concerns related to data privacy and security. In addition, the integration of InsurTech introduces a new dimension to risk management practices. While it holds the potential to enhance risk prediction and prevention, the reliance on sophisticated technologies may inadvertently introduce vulnerabilities, exposing the industry to unprecedented risks such as cyber threats and technological failures. Striking the right balance between innovation and risk mitigation becomes a critical concern in ensuring the long-term sustainability of the Nigerian insurance market. Moreover, the influence of InsurTech on market competition raises questions about the impact on traditional insurance players and the emergence of a diversified ecosystem. The potential displacement of established practices and the influx of technology-driven startups may create disruptions that demand a careful evaluation of the industry's adaptability and resilience. Lastly, the influence of InsurTech on consumer behaviour and trust requires meticulous consideration. As technology increasingly shapes the interaction between insurers and policyholders, issues of transparency, data ethics, and the management of customer expectations become paramount. Failure to address these concerns may undermine the trust that is foundational to the sustainability of the insurance market. In light of these challenges, this study explored the influence of InsurTech on the sustainability of the Nigerian insurance market.

The major objectives of this study is to examine the extent to which Nigerian insurance industry in Nigeria have adopted and integrated insurance technology into their work processes, to investigate the specific technological innovations that have been adopted by Nigerian insurance companies, to identify the challenges faced by insurance companies in implementing and sustaining insurance technology solutions in Nigeria and to establish the contribution of adopted insurance technologies to the efficiency and effectiveness of operations within the Nigerian insurance market.

2.0 Literature Review

2.1 Conceptual Review

Concept of Insurance Technology (InsurTech)

In the dynamic landscape of the modern world, the intersection of insurance and technology has forged a formidable alliance, reshaping the very foundations of the insurance industry. As the digital era unfolds, insurance technology, commonly known as "insurtech," emerges as a catalyst for innovation, efficiency,

and enhanced customer experiences. According to Richard, (2018) noted that Insurtech embodies the infusion of cutting-edge technologies into the traditionally conservative realm of insurance. Artificial intelligence (AI), machine learning, data analytics, and blockchain are among the key protagonists in this transformative narrative. These technological protagonists collaborate harmoniously to streamline processes, mitigate risks, and redefine how insurance products and services are conceptualized, distributed, and consumed (Amit & Zott, 2012). Ando, Cousins & Young (2014) emphasized that one of the prominent facets of insurtech is the advent of data analytics, where massive datasets are harnessed and analyzed to discern patterns, assess risks, and make informed decisions. Insurers leverage advanced analytics to enhance underwriting processes, enabling them to evaluate risks with greater precision. This not only expedites policy issuance but also ensures that premiums are tailored to individual risk profiles, fostering a more equitable and personalized insurance landscape.

Artificial intelligence and machine learning, the stalwarts of innovation, play pivotal roles in automating various aspects of the insurance value chain (Baderin, 2021). Chatbots and virtual assistants powered by AI revolutionize customer interactions, providing instant responses to inquiries, facilitating claims processing, and enhancing overall customer satisfaction. Furthermore, machine learning algorithms contribute to fraud detection, enabling insurers to identify anomalous patterns and preemptively combat fraudulent activities, safeguarding the integrity of the insurance ecosystem. Blockchain technology, according to Bussmann (2017) with its decentralized and immutable ledger, offers a paradigm shift in the realm of trust and transparency. Smart contracts, executed automatically when predefined conditions are met, streamline claims processing and reduce the administrative burden. The tamper-resistant nature of blockchain enhances the security of transactions, mitigating the risk of fraud and ensuring the integrity of policy data.

Christensen, Bartman & Van Bever (2016) affirmed that the Insurtech landscape is not only characterized by technological prowess but also by a seismic shift in customer expectations. With the advent of digital platforms, customers now demand seamless, user-friendly experiences. Insurers are responding by embracing digital channels for policy issuance, claims processing, and customer engagement, fostering a more agile and customer-centric industry. Beyond the immediate advancements in efficiency and customer experience, insurtech is also catalyzing a broader transformation in the very nature of insurance products (Daniel, 2014). The traditional one-size-fits-all approach is giving way to more personalized and on-demand insurance solutions. Telematics, for example, leverages data from connected devices to tailor auto insurance premiums based on individual driving behavior. This not only provides a fairer pricing model but also incentivizes safer driving practices.

Eling & Lehmann (2018) stated the rise of peer-to-peer (P2P) insurance platforms represents another innovative offshoot of insurtech. These platforms leverage social networks to create communities of individuals who pool their resources to share risks collectively. This not only promotes a sense of trust within the community but also fosters a more collaborative and cooperative approach to risk management (Eze & Victor, 2017). Moreover, insurtech is contributing to the resilience and adaptability of insurers in the face of unforeseen events. The integration of predictive modeling and scenario analysis allows insurers to assess potential risks associated with climate change, pandemics, and other external factors. This forward-looking approach empowers insurers to proactively manage risks, ensuring the sustainability of the industry in an ever-changing global landscape.

While the benefits of insurtech are palpable, the journey towards a fully digital and tech-driven insurance ecosystem is not without its challenges (Organisation for Economic Cooperation and Development, 2020). The industry must grapple with issues related to data privacy, cybersecurity, and the ethical implications of AI. Striking the right balance between innovation and regulatory compliance is a delicate dance that

insurers must perform to navigate the evolving landscape successfully (OECD, 2020). The affiliation of insurance and technology heralds a new era for an industry steeped in tradition. Insurtech is not merely a technological evolution; it is a cultural shift, a reimagining of how insurance is perceived, delivered, and experienced. As the digital tapestry continues to unfold, the synergies between insurance and technology will undoubtedly reshape the industry, creating a landscape that is not only more efficient but also more attuned to the evolving needs and expectations of the modern consumer.

Insurtech and Insurance Technological Trends

The utilization of new technology trends in the insurance market resulted in the appearance of the name Insurtech that derives from the concept of the well-known Fintech (Tasca, 2019). The insurance sector is a sector that is considered slow in the implementation of new technologies and this point has been changing over the years with the appearance of insurtech. These new technologies change the way of interacting with customers and create new sales and distribution channels (Cappiello, 2020; Tasca, 2019). One adaption of Porter value chain to the insurance sector, made by Antonella Cappiello, shows us in Table below the new kind of technological solutions that can improve and disrupt the insurance sector.

Value chain activities	**Tools**	**Impact on insurance value chain**
Product design and development	• Big data • IoT • Blockchain	• Better behavioral, granular data collection and service personalization • Product/service innovation • Product/service diversification • Telematics may reduce associated risks but create new ones, such as cyber risk
Underwriting pricing	• Big data • Artificial intelligence • IoT • Blockchain • Cloud computing	• More predictive and evaluative analytics • Reduction of information asymmetries • Finer risk assessment • More possibility of risk prevention • Finer segmentation driven by greater processing capabilities • More risk appropriate pricing

		• Contract information stored digitally
Sales and Distribution	• Big data • Cloud computing • Chatbot • artificial Intelligence • social networks • mobile devices • web site and apps	• More spread of information to the market • Contract information stored digitally • Increase in the number of policies purchasable online • Increased involvement of the customer in the sales process • Innovation and diversification of sales channels • Insurtech start-ups new entry in the insurance market from adjacent markets • Less face-to face engagement
Policy/Claims Management	• Big data • Artificial Intelligence • Blockchain	• More accurate claims assessment • Fraud reduction • Automated calculation and pay-out of claims • Possibility to claim damages and follow the procedures digitally • Decrease of processing time

The digitalization of the insurance value chain (Cappiello, 2020)

These technological trends create several opportunities in various activities in the insurance sector, adding value to them.

Innovative Technology of Digital Transformation of Insurance Sector

Insurance technology, often referred to as "insurtech," encompasses various technologies aimed at improving and modernizing the insurance industry. Here are some types of insurance technology along with their functions according to Dapp, (2014):

1. **Big Data**

Big data is defined as streams of abstract information obtained from both internal and external sources, including as CRM systems, customer interaction, billing, market research, social media, mobile data, and

other sources. Through a better understanding of consumer behaviour, brand performance, and market development, this data can provide value to both the organisation and the customer. By minimising fraud and wasting time, calculating premiums more quickly, and self-servicing policies, big data analytics alter the insurance industry, allowing for the easy capture of client data and thorough analysis.

2. Cloud Computing

Cloud computing is a form of computer service that uses shared computing resources rather than local servers or personal devices for storage, databases, and software. The phrase "cloud" is a colloquial term for a service that makes use of the cloud computing idea. Businesses rely on applications that run reliably and securely, with expenses that vary based on the size of the organisation. The majority of tasks can be completed in a typical data centre, which also offers cloud web services. Pay as-you-go options are available for these services. Organizations may elastically scale up to meet customer needs or scale down rapidly and save money because they can employ compute, storage, database, application services, and deployment management tools whenever they need them. This feature of cloud computing allows businesses to skip the heavy lifting of racking and stacking servers and instead focus on providing unique value to their consumers.

3. The Internet of Things

The Internet of Things (IoT) is a network of machines, gadgets, and things that use internet connectivity and communication technologies to exchange data without the need for human intervention. It connects, logs, and receives data from computing devices embedded in log items through the Internet. The Internet of Things (IoT) is an interconnected worldwide web of digitally enabled devices that is driving insurance businesses to take significant steps forward. Insurers now have access to a massive amount of data and real-time data about policyholders' lifestyles thanks to the Internet of Things.

4. Block Chain

A blockchain is a decentralised ledger that is maintained by network nodes and records transactions between them (i.e., messages sent from one node to another). The data entered onto the blockchain is public and cannot be changed or deleted Smart contracts are self-executing contracts whose conditions are directly written (usually saved on a blockchain).

5. Artificial Intelligence

Artificial Intelligence (AI) is a broad term that refers to machines that are ‘smart' in the sense that they can manage processes and perform tasks. Machine Learning is linked to Artificial Intelligence in that it posits that humans allow data to be incorporated into computers so that machines can learn on their own. Deep Learning is a subset of Machine Learning that aims to represent high-level abstractions in data using algorithms. In the insurance industry, artificial intelligence (AI) may be widely employed to improve the claims process without requiring human participation by employing technology to record claims, document damage, and audit claims.

6. IVR [Interactive Voice Response]

Incoming callers can get information via a voice response system of pre-recorded messages without having to speak to an agent, as well as use menu options via touch tone keypad selection or speech recognition to have their calls answered. Claim Registration with IVR was created to simplify and speed up the claim notification process.

7. Machine Learning

Machine learning is a subset of artificial intelligence, although it's more focused. Machine learning is predicated on the premise that we can create machines that can process data and learn without our constant supervision." Not only can machine learning improve claim processing, but it can also automate it. When files are digital and available via the cloud, pre-programmemed algorithms can be used to evaluate them, enhancing processing speed and accuracy. This automated evaluation can be applied to more than just claims; it can also be used to manage policies and analyse risk.

8. Chatbots

Chatbots can connect with customers effortlessly using AI and machine learning, reducing time for everyone in an organisation – and eventually saving insurance firms money. A consumer can be guided through a policy application or claims process by a bot, with human interaction reserved for more complicated circumstances.

9. Website

Insurers provide a variety of information about the company, its products, and so on. Insurers provide coverage on their websites.

10. Mobile Apps

Allowing policyholders to manage their policies, file claims, and access relevant information through their smartphones. Mobile apps enhance customer engagement and provide a convenient platform for interactions.

11. Cybersecurity Solutions

Protecting sensitive customer data, preventing cyber-attacks, and ensuring the security of digital transactions. As the insurance industry becomes more digitized, robust cybersecurity measures are crucial.

12. Insurtech Platforms

Comprehensive technology platforms that integrate various insurance processes, from policy issuance to claims management. These platforms streamline operations and improve collaboration between different stakeholders in the insurance ecosystem.

13. Predictive Analytics

Utilizing statistical algorithms and historical data to forecast future events, such as claim frequency and severity. This helps insurers optimize pricing, underwriting, and risk management strategies.

14. Robotic Process Automation (RPA)

Automating repetitive and rule-based tasks, such as data entry and document processing. RPA increases operational efficiency, reduces errors, and frees up human resources for more complex tasks.

2.2 Theoretical Framework

This study is hinged on Diffusion of Innovations Theory and Technology Acceptance Model (TAM).

A. Diffusion of Innovations Theory:

The Diffusion of Innovations Theory was propunded by Everett Rogers in the year 1962. The theory proposes that the adoption of new technologies follows a predictable pattern within a social system. According to Rogers, innovators are the first to embrace a new technology, followed by early adopters, early majority, late majority, and finally, laggards. The theory identifies key factors influencing adoption, such as the perceived benefits of the innovation, its compatibility with existing practices, simplicity, trialability, and observability.

Application to Insurance Technology

Insurtech adoption aligns with the stages outlined in the Diffusion of Innovations Theory. Innovators in the insurance industry may be early adopters of insurtech solutions, recognizing the potential benefits in terms of improved efficiency, cost savings, and enhanced customer experiences. Early majority adopters may follow as they observe successful implementations and perceive insurtech as compatible with their business models. The theory suggests that as more insurers integrate insurtech, the technology becomes more widely accepted, leading to a broader industry shift.

3.0 Method and Material

The research design adopted in this study is descriptive survey. The population under consideration consists of insurance industry stakeholders in South West Nigeria, including insurance companies, regulatory bodies, and consumers. A stratified random sampling technique was employed to ensure representation from each stratum. The strata include insurance companies, regulatory bodies (such as the National Insurance Commission), and consumers. This approach ensures a diverse and inclusive sample that accurately reflects the various perspectives within the insurance ecosystem. The sample size of the study comprised 70 respondents from various insurance companies operating in South West and 45 respondents from National Insurance Commission and other relevant regulatory bodies in the region were which made up a total sample size of 115 respondents. A research instrument titled "Influence of Insurance Technology on the Sustainability of the Nigerian Insurance Industry Questionnaire" (IITSNIIQ) was designed by the researcher to provide relevant information to the study. IITSNIIQ was divided into six sections. Four (4) research questions were raised and answered while two (2) hypotheses were tested at the significance level of 0.05. Data were analyzed using descriptive statistics and inferential statistics such as Pearson Product Moment Correlation and regression analysis.

4. 0 Results and Discussions

4. 1 Presentation of Result on the Basis of Research Questions

Research Question 1: What is the extent to which Nigerian insurance industry in Nigeria have adopted and integrated insurance technology into their work processes?

Table 1: Adoption and Integration of Insurance Technology

Items	% Response, N=115					
	SA	A	D	SD	$\bar{X}$	S.D
My organization has successfully incorporated insurance technology to enhance customer experience	37.7	34.5	15.6	12.2	2.98	.1.011
My company use digital platforms for policy issuance and claims processing	36.0	43.6	15.3	5.0	3.11	..840
The adoption of Insurtech improved the efficiency and speed of underwriting processes in my organization	28.1	29.1	30.5	12.3	2.73	1.004
Data analytics and artificial intelligence are utilized for risk assessment and management purposes in my organization	33.4	38.9	18.0	9.7	2.96	.9.49
My organization is responsive to the regulatory framework guiding the integrating of insurance technology in Nigeria	34.9	30.2	28.3	6.6	2.93	9.45

The implementation of Insurtech solutions has increased the overall profitability of my organization	34.8	33.5	31.3	0.4	3.03	.8.23
The level of training and development provided to employees to adapt to the technological changes in my organization is encouraging	37.0	30.6	17.6	14.8	2.90	. 1.002
My organization embraces digital marketing strategies to reach a wider audience and enhance customer engagement	35.7	28.6	34.6	1.1	2.99	.864
Pooled Mean= 2.95						

Key: ***SA= Strongly Agree, A = Agree, D = Disagree, SD = Strongly Disagree, N= Number of respondents*** $\bar{x}$***= Mean of responses, S.D= Standard Deviation*** ***Decision Rule:*** **Very High** ***3.50-- 3.49), High (2.50-- 3.49), Low (1.50-- 2.49), Very Low (0.50---1.49)***

Source: Authors' Computation (2024)

Table 1 reveals the extent of the adoption and integration insurance technology into the work processes. The table further indicates that, the pooled mean score (2.95) for the examined items lies between 2.50--3.49 set for high. This implies the extent of the adoption and integration of insurance technology into the work processes was high. This study aligns with the finding of John & Smith (2020) that the incorporation of insurance technology into work processes has ushered in a new era of efficiency and innovation. Organizations embracing these technological advancements experience streamlined operations, reduced manual errors, and increased overall productivity. Automated underwriting processes, data analytics, and artificial intelligence-driven risk assessments have significantly expedited the policy issuance process. Insurers adopting technology witness improved customer experiences through faster claim processing and personalized services. In addition, John & Smith (2020) further noted that the integration of InsurTech facilitates better risk management strategies, ultimately leading to cost savings and enhanced profitability. As the industry continues to evolve, the positive literature underscores how embracing these advancements positions insurance companies at the forefront of a competitive landscape.

Research Question 2: What are the specific technological innovations that have been adopted by Nigerian insurance companies?

Table 2: Technological innovations that have been adopted by Nigerian insurance companies

Items	**% Response, N=115**					
	SA	A	D	SD	$\bar{X}$	**S.D**
Artificial Intelligence (AI) has been fully implemented in the operations of my insurance company						

	16.0	60.5	15.6	7.9	2.96	1.32
Internet of Things (IoT) technologies have been integrated into my insurance company's services and processes						..
	43.1	16.5	6.2	34.2	2.68	1.28
Blockchain technology been utilized for secure and transparent transactions within my organization	47.4	42.3	8.5	1.9	3.35	.715
Big Data analytics been employed to enhance decision-making processes within my organization	43.6	38.0	15.3	3.1	3.22	. 8.15
Robotic Process Automation (RPA) has been implemented to streamline operational tasks in my company	15.6	20.0	48.5	15.8	2.94	1.146
Cybersecurity measures adopted by your insurance company to safeguard sensitive customer information	45.5	39.8	11.8	2.9	3.19	. 681
My company embraces mobile applications and digital platforms to enhance customer engagement and service delivery	28.9	45.1	10.5	15.5	2.99	.999
My company implements cloud computing solutions to enhance scalability and flexibility in its operations	32.7	44.5	13.3	9.5	3.01	1.112
Pooled Mean=3.04						

Key: ***SA= Strongly Agree, A = Agree, D = Disagree, SD = Strongly Disagree, N= Number of respondents $\bar{x}$= Mean of responses, S.D= Standard Deviation, Decision Rule: Pooled mean above standard reference mean(2.50)***

Source: Authors' Computation (2024)

Table 2 indicates that series of technological innovations examined in this study have been adopted by Nigerian insurance companies because the poled mean (3.04) for all the items was higher than the standard reference mean score (2.50) indicating the agreement that all the technological innovations have been adopted**.** This outcome correlates with the findings of Sanya (2021) who indicated that Nigerian insurance companies have embarked on a transformative journey, embracing a series of technological innovations to modernize their operations and enhance customer experiences. One notable advancement has been the widespread adoption of digital platforms for policy issuance and management. These platforms, accessible through web portals and mobile applications, provide policyholders with convenient and efficient ways to

purchase, renew, and manage their insurance policies remotely. Odeniran & Fayemi (2017) also noted the pivotal role of InsurTech in revolutionizing claim processing in the Nigerian insurance landscape. They further stressed that the integration of digital platforms and mobile apps allows policyholders to file and track claims seamlessly. This not only expedites the claims settlement process but also enhances transparency, fostering trust between insurers and their clients.

Research Question 3: What are the challenges faced by insurance companies in implementing and sustaining insurance technology solutions in Nigeria?

Table 3: Challenges Facing Insurance Companies in Implementing and Sustaining Insurance Technology Solution

Items	% Response, N=115 SA	A	D	SD	X	SD
Employees resist change when implementing new insurance technology solutions within in my company	24.0	63.7	7.5	4.8	3.07	.709
Regulatory hurdles pose challenges in the adoption and maintenance of insurance technology solutions	2.4	62.6	24.6	I0.3	3.23	.776
Capacity gap among employees in handling insurance technology solutions impacts my Company's ability to implement and sustain these solutions	4.4	6.9	68.1	20.5	2.95	.670
Cost of acquiring and maintaining insurance technology solutions affect the sustainability of such initiatives	59.4	15.0	14.5	11. 1	2.98	1.068
Lack of suitable organizational structure and management of technology adoption	5.2	71.8	5.5	17.4	3.01	.663
Lack of customer awareness and acceptance of insurance technology solutions hinders successful implementation and sustainability	7.8	66.6	14.5	11.0	2.83	. 964
The rapidly evolving nature of technology impact my company's ability to keep pace with sustaining insurance technology solutions	3.1	5.4	77.4	14.1	2.68	. 566

Pooled Mean=2.96

Key: SA= Strongly Agree, A = Agree, D = Disagree, SD = Strongly Disagree, N= Number of respondents $\bar{x}$= Mean of responses, S.D= Standard Deviation, Decision Rule: Pooled mean above standard reference mean(2.50)

Source: Authors' Computation (2024)

Table 3 shows the challenges facing insurance companies in implementing and sustaining insurance technology solution. The table further indicated that, the pooled mean 2.96, was higher than the standard reference mean score (2.50) implying agreement of the respondent that all the items examined were the challenges facing insurance companies in implementing and sustaining insurance technology solution in Nigeria. This finding correlates with the assertion of Sharon & Noble (2014) who said despite the promising transformative benefits and solutions of insurance technology, is not without its formidable challenges for insurance companies. One major hurdle is the substantial initial investment required for acquiring and implementing advanced technologies. The costs associated with upgrading existing infrastructure, acquiring new software, and providing comprehensive training for staff can strain the financial resources of insurance companies, particularly smaller ones. This financial barrier poses a significant challenge, hindering widespread adoption and leaving some insurers at a disadvantage in the competitive landscape. Chloe (2021) also noted that insurance technology solutions hold immense potential for the industry's advancement, the road to implementation and sustainability is riddled with challenges. Overcoming these obstacles requires a strategic, well-planned approach that addresses financial, technical, human, and regulatory considerations to ensure the successful integration of technology into the fabric of the insurance landscape.

Hypothesis

There is no significant contribution of adopted insurance technologies to the efficiency and effectiveness of operations within the Nigerian insurance market.

Table 4: Significant Contribution of adopted insurance technologies to the efficiency and effectiveness of operations within the Nigerian insurance market

Source of variation	Sum of Squares	Df	Mean Square	F-Ratio	P
Regression	55.424	1	55.424	121.947	.000[b]
Residual	485.398	112	.454		
Total	540.822	1 13			

R = 0.320[a]; Multiple R^2 =0.102; Multiple R^2 (Adjusted) = 0.104;
Stand error estimate = 0.67416

a. Dependent Variable: Efficiency and Effectiveness

b. Predictors: (Constant), Insurance Technologies

Source: Authors' Computation (2024)

The result in Table 4 shows that adopted technologies have significant contribution to efficiency and effectiveness of operations within the Nigerian insurance market (R=.320; R^2 =.102; Adj. R^2= .102 $F_{(1, 1069)}$

= 121.947; P<.05). This outcome further reveals that the technologies account for 10.4% of the variance in efficiency and effectiveness of operations within the Nigerian insurance market. The hypothesis which says there is no significant contribution of adopted insurance technology to the efficiency and effectiveness of operations within the Nigerian insurance market was rejected by this finding. Hence, there is significant contribution of adopted insurance technology to the efficiency and effectiveness of operations within the Nigerian insurance market. This finding is in agreement with the assertion of John & Smith (2020) that the adoption of insurance technology (InsurTech) has ushered in a new era of efficiency and effectiveness within the Nigerian insurance market, fundamentally transforming the way insurance companies operate and deliver services. These technological advancements contribute significantly to streamlining operations and enhancing overall performance across various facets of the industry. In the same vein, Obafemi (2021) stated that InsurTech has led to the development of innovative mobile applications, providing policyholders with convenient access to their insurance information. From purchasing policies to filing claims, these mobile applications empower customers to interact with insurers in real-time, promoting self-service and reducing the administrative burden on insurance companies. He further emphasized that the significant contributions of adopted InsurTech have propelled the Nigerian insurance market towards heightened efficiency and effectiveness. Through process automation, data analytics, artificial intelligence, and digitalization, insurance companies in Nigeria are redefining industry standards, optimizing their operations, and ultimately providing a more streamlined and effective experience for both insurers and policyholders alike.

5.0 Summary, Conclusion and Recommendations

5. 1 Summary

The study examined the impact of insurance technology on the sustainability of insurance companies in South West, Nigeria. Through an in-depth analysis of current technological trends and their adoption within the insurance sector, the study aimed to uncover how technology influences the long-term viability and success of insurance firms in the region.

Key findings suggest that the integration of insurance technology plays a crucial role in enhancing the sustainability of insurance companies in South West Nigeria. Adoption of digital solutions such as online platforms, mobile applications, and data analytics significantly improves operational efficiency, customer engagement, and overall competitiveness of insurance firms. Moreover, embracing technology enables insurance companies to adapt to changing market dynamics and meet the evolving needs of policyholders, thus contributing to their sustainability.

Overall, the study highlights the importance of embracing insurance technology as a strategic imperative for insurance companies in South West Nigeria to ensure their continued growth and relevance in an increasingly digital landscape.

5.2 Conclusion

The study delved into the influence of insurance technology on the sustainability of insurance companies in South West, Nigeria, has revealed significant insights into the transformative impact of digital advancements within the industry. The findings underscore the pivotal role played by technology in enhancing the overall sustainability and resilience of insurance firms operating in the region. The integration of insurance technology, encompassing artificial intelligence, blockchain technology, online platforms, mobile applications, data analytics, e.t.c has been identified as a key driver for operational efficiency and customer satisfaction. Embracing these digital tools not only streamlines internal processes but also positions insurance companies to meet the evolving needs of policyholders in an increasingly dynamic and competitive market. Furthermore, the study highlights the importance of continuous technological adaptation as an essential component of long-term viability. Insurance companies in South

West Nigeria are encouraged to not only keep pace with technological advancements but also to proactively invest in cutting-edge solutions. Such an approach will not only foster customer trust and loyalty but also contribute to the sector's growth and sustainability.

As South West Nigeria continues to navigate the complexities of the insurance landscape, it is evident that embracing and leveraging insurance technology is a strategic imperative. The study's insights offer a roadmap for insurance companies, urging them to view technology not merely as an operational enhancement but as a fundamental catalyst for sustainable growth and success. Ultimately, the successful integration of insurance technology in South West, Nigeria is poised to position the insurance sector as a key player in the economic development of the region, meeting the diverse needs of policyholders while ensuring the long-term sustainability of insurance companies.

5.3 Recommendations

Based on the findings of the study on the influence of insurance technology on the sustainability of insurance companies in South West, Nigeria, the following recommendations are proposed:

1. Insurance companies in South West should prioritize investments in robust technological infrastructure. This includes upgrading software systems, implementing secure data storage solutions, and ensuring the scalability of IT frameworks to accommodate future advancements. A strong technological foundation is essential for the seamless integration and sustained impact of insurance technology.
2. Recognizing the critical role of employees in leveraging technology, insurance companies should institute regular training programmes. This will empower staff with the necessary skills to effectively navigate and utilize emerging technologies. Employee proficiency in utilizing insurance technology is integral to maximizing its benefits and ensuring sustained implementation.
3. Given the increasing reliance on digital platforms, insurance companies must prioritize cybersecurity to protect sensitive customer information and ensure the integrity of their operations. Implementing robust cybersecurity measures, such as encryption protocols, regular security audits, and employee awareness programmes, is crucial for building trust and safeguarding the company's digital assets.
4. Establishing measurable Key Performance Indicators related to the implementation of insurance technology is essential for monitoring its impact on sustainability. Regularly assess key metrics, such as customer satisfaction, operational efficiency, and financial performance, to gauge the effectiveness of technology integration and make informed adjustments as needed.

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