EFFECT OF DIGITALIZATION ON THE PERFORMANCE OF SELECTED INSURANCE COMPANIES IN NIGERIA.

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Abstract
This study examined the effect of digitalization on the performance of listed insurance companies in Nigeria. Specifically, the study investigated the effect of cloud computing on the performance of listed insurance companies in Nigeria and determined the effect of the Internet of Things (IoT) on their performance. A survey research design was adopted for the study. The population consisted of 1,083 senior and mid-level employees from the headquarters of the sixteen (16) insurance companies listed on the Nigeria Exchange Group (NGX). Using Taro Yamane's (1967) formula, a sample size of 292 respondents was determined. The study employed a proportional stratified sampling technique alongside simple random sampling to ensure adequate representation across the insurance firms. Primary data was collected using a structured questionnaire designed on a five-point Likert scale with response options ranging from strongly agree to strongly disagree. Data analysis and hypothesis testing were carried out using Partial Least Squares Structural Equation Modeling (PLS-SEM). The results revealed that cloud computing has a significant positive effect on organisational performance, while the Internet of Things (IoT) has a significant negative effect on organisational performance among listed insurance companies in Nigeria. Based on these findings, the study recommends that insurance companies invest in reliable cloud computing infrastructure and staff training to optimize operational performance. Furthermore, insurance firms are advised to adopt a phased approach to IoT implementation, ensuring adequate technical readiness, risk management, and integration support to prevent potential negative impacts on performance.
Keywords: *Digitalization, Cloud Computing, Internet of Things (IoT), Organisational Performance*

INTRODUCTION

The performance of insurance companies has increasingly become a subject of global attention, as the sector plays a pivotal role in risk management, financial stability, and economic development (Swiss Re Institute, 2022). Insurance companies not only provide financial security to individuals and organizations but also contribute to economic growth by mobilizing long-term funds for investment (OECD, 2021). In developed economies, the performance of insurance firms is often evaluated based on profitability, operational efficiency, market expansion, customer satisfaction, and their ability to adapt to technological advancements (Deloitte, 2023). Globally, the insurance industry has experienced significant disruption and transformation driven by digitalization. According to PwC (2022), insurers in North America, Europe, and Asia have increasingly leveraged digital technologies to enhance service delivery, streamline operations, and improve financial performance. The COVID-19 pandemic further accelerated digital adoption in the insurance sector, with companies integrating advanced technologies to remain competitive and meet changing customer expectations (Accenture, 2021).

In Africa, the insurance sector continues to grapple with challenges such as low penetration rates, regulatory complexities, and operational inefficiencies. Nevertheless, digital transformation is emerging as a critical enabler of performance improvement across the continent (KPMG, 2022). Many African insurers are beginning to explore digital solutions to overcome infrastructural barriers, enhance product accessibility, and improve customer engagement. In Nigeria, the insurance industry remains a critical component of the financial sector, though its performance is often hindered by limited technological integration, low awareness, and weak market penetration. According to the National Insurance Commission (NAICOM, 2023), Nigeria's insurance penetration remains below 1% of GDP, reflecting the sector's untapped potential. However, recent developments indicate a growing recognition of digital technologies as strategic tools for boosting operational performance and market competitiveness.

Among the various facets of digitalization, Cloud Computing, and the Internet of Things (IoT) have gained prominence in reshaping business processes within the insurance industry (Marston et al., 2021).

Cloud computing provides scalable and cost-effective infrastructure for data storage, real-time processing, and seamless service delivery (Marston et al., 2021). In the insurance sector, cloud computing enhances operational efficiency, reduces IT overhead costs, and facilitates the development of innovative insurance products tailored to dynamic customer needs (Huang et al., 2022). Similarly, the Internet of Things (IoT) is revolutionizing insurance operations by enabling real-time data collection from connected devices, thereby improving risk assessment, claims management, and personalized service delivery (PwC, 2022). IoT applications, such as telematics in motor insurance or wearable health devices, offer insurers the ability to monitor policyholders' behavior, manage risks proactively, and enhance overall performance (Jiang et al., 2023). Understanding how cloud computing and IoT influence performance metrics such as profitability, market share, and operational efficiency is crucial for the sustainable growth of the Nigerian insurance industry. It is against this backdrop that this study seeks to examine the effect of digitalization, with a focus on cloud computing and IoT, on the performance of selected insurance companies in Nigeria.

Insurance company performance in Nigeria faces significant challenges, with the sector contributing only 0.3% to GDP compared to the global average of 7.2% (KPMG Nigeria, 2023). This underperformance is evident in suboptimal profitability, extended claims settlement periods averaging 45 days versus global best practices of 5-10 days, and elevated expense ratios of 40-45% compared to 25-30% in developed markets (NIA, 2023; PwC Nigeria, 2023). Meanwhile, globally, digitally mature insurers report 23% higher profitability and 18% greater customer retention than their less digitalized counterparts, highlighting a critical performance differential (McKinsey & Company, 2023).

Despite growing investments in digital technologies by Nigerian insurers, increasing from ₦15.2 billion in 2018 to approximately ₦42.7 billion by 2023 (NIA, 2023), limited empirical evidence exists regarding which dimensions yield the most significant performance improvements in the Nigerian context (Oyedotun, 2023). This knowledge gap impedes effective strategic decision-making and risks misallocation of limited resources, underscoring the need for this study to empirically examine the relationship between distinct digitalization dimensions and insurance company performance in Nigeria (Adebayo & Johnson, 2022).

While several studies have examined digitalization impacts across various industries and geographical contexts, specific dimensions relevant to insurance performance in Nigeria remain underexplored. Chaushi et al. (2024) provided a comprehensive literature review on organizational digitalization, identifying conceptual frameworks and general trends. While valuable for theoretical grounding, this work did not empirically test relationships between specific digitalization dimensions and performance metrics, particularly in financial services contexts. Mohamed et al. (2024) studied digitalization impacts on organizational performance within university services in Algeria, but their research cannot be directly applied to the insurance sector or the Nigerian business environment, where unique regulatory, infrastructural, and market conditions prevail. Nadkorokoum and Chakor (2024) analyzed digitalization effects on public service efficiency in Morocco's health system. Though their study used performance frameworks, it did not address the insurance sector or the specific technological dimensions most relevant to insurance operations. This study seeks to address these gaps by empirically investigating the effect of two distinct digitalization dimensions on insurance company performance in Nigeria using PLS-SEM methodology.

The main objective of the study is to examine the effect of effect of digitalization on the performance of selected insurance companies in Nigeria. The specific objectives are to:

i. investigate the effect of cloud computing on the performance of selected insurance companies in Nigeria; and
ii. determine the effect of Internet of Things (IoT) on the performance of selected insurance companies in Nigeria;

This study will test the following hypotheses:

H_{01}: cloud computing has no significant effect on the performance of selected insurance companies in Nigeria

H_{02}: Internet of Things (IoT) have no significant effect on the performance of selected insurance companies in Nigeria

LITERATURE REVIEW

Digitalization

Digitalization refers to the process by which organizations integrate digital technologies into all aspects of their operations, resulting in fundamental changes to how they create value, interact with customers, and compete in the market (Bharadwaj et al., 2023). It involves leveraging technologies such as cloud computing, IoT, artificial intelligence, and data analytics to enhance efficiency and drive innovation. According to Sebastian et al. (2022), digitalization is the use of digital technologies to transform business models, improve operational processes, and deliver better customer experiences, thereby enhancing organizational performance and competitiveness in dynamic environments.

Cloud Computing

Cloud computing is defined as the delivery of computing services including servers, storage, databases, networking, software, and analytics over the internet ("the cloud"), enabling flexible resources, rapid innovation, and economies of scale (Marston et al., 2021). According to Huang, et al (2022), cloud computing represents a paradigm shift in IT resource management, allowing organizations to access scalable, on-demand computing infrastructure and services, which enhances operational efficiency, agility, and performance.

Internet of Things (IoT)

The Internet of Things (IoT) refers to a network of interconnected physical devices embedded with sensors, software, and other technologies that collect and exchange data over the internet, facilitating real-time monitoring, automation, and improved decision-making (Jiang et al., 2023). As defined by Lee and Lee (2022), IoT is the integration of smart devices and communication networks that enables the seamless flow of information between machines, systems, and people, offering organizations opportunities to optimize operations and deliver personalized services.

Organizational Performance

Organizational performance is broadly conceptualized as the ability of an organization to achieve its strategic goals, sustain competitive advantage, and deliver value to stakeholders, measured through indicators such as profitability, operational efficiency, customer satisfaction, and market growth (Richard et al., 2009). According to Kaplan and Norton (2021), organizational performance encompasses both financial and non-financial outcomes, reflecting the effectiveness of an organization in executing its strategy, satisfying customers, and achieving sustainable success in the marketplace.

Empirical Review

Ouma and Gitonga (2023) determined the influence of cloud computing technology on performance at IBM Africa. The study adopted a descriptive research design. The study targeted 184 employees from IBM Africa, and a stratified random sampling technique was used. Analysis was done quantitatively by employing inferential and descriptive statistics. Inferential statistics were in the form of linear regression, correlation, ANOVA, and T-test. The study found a weak positive correlation of 0.343 between cloud computing technology and performance. The results of the model summary indicated 10.9% of the variance in performance. The regression coefficient results indicated that cloud computing technology significantly predicted performance indicated by β of 0.348. The ANOVA results indicated that cloud computing technology significantly affected performance indicated by an F-value of 13.827. Perceived benefits that come with cloud computing led to the adoption of cloud computing indicated by a mean of 4.24. Cloud computing enhanced the efficiency of operations indicated by a mean of 4.22 and improved customer relationships indicated by a mean of 4.2. The study concluded that, a positive

correlation between cloud computing technology and performance. One criticism of the study relates to the disparity in analytical methods, as the present research employs PLS-SEM as opposed to another approach.

Aligarh et al (2023) examined cloud computing adoption and its consequences for MSMEs' performance. This research employs owners or managers of MSMEs as respondents, as the unit of analysis used is the organizational. The research was conducted in Surakarta and Yogyakarta, Indonesia, which have a diverse and significant population of micro and small businesses. These cities are also hubs for creative industries, serving as examples for micro and small enterprises in Indonesia. The study collected data through both direct and online questionnaires. The investigation used the accidental sampling method, a non-probability sampling technique, as several studies on technology adoption employ random sampling. The data for this study was obtained through a structured survey questionnaire administered to 197 owners/ managers of MSMEs in Indonesia. The study concluded that cloud computing has a positive significant effect on MSMEs' performance.

Loso et al (2024) investigated the impact of Internet of Things (IoT) adoption on operational efficiency and competitive advantage within the Information Technology (IT) industry in Indonesia. A quantitative research approach was employed, utilizing a cross-sectional survey design to collect primary data from IT companies operating in Indonesia. The target population for this study comprises IT firms across various segments, including software development, hardware manufacturing, and IT services, operating in Indonesia. A sample size of 170 respondents was used for the survey. The survey questionnaire was the primary instrument for data collection. Structural Equation Modeling (SEM) with Partial Least Squares (PLS) algorithm was utilized to analyze the data and test the research hypotheses. The findings reveal that IoT adoption positively influences both operational efficiency and competitive advantage within the Indonesian IT industry. These results underscore the transformative potential of IoT technologies in enhancing organizational performance and strategic positioning in the digital era. Given that the research was conducted in another country, its findings are not directly applicable to the Nigerian economy hence the need for the present study.

Wong and Mbeki (2023) investigated the effect of the Internet of Things on organisational performance. Specifically, the study examined how IoT implementation affects organizational efficiency in GlobeNet Solutions. The research design is ex post facto. The population of this study consisted of all 267 staff of GlobeNet Solutions Cape Town. Using systematic random sampling, the researcher selected 180 employees, and 165 staff completed a structured questionnaire. Data collected was analyzed using descriptive statistics and both hypotheses were tested using Mann-Whitney U test at a 0.05 level of significance. The result showed that the Internet of Things has a significant positive effect on organizational performance. One criticism of the study relates to the disparity in analytical methods, as the present research employs PLS-SEM as opposed to another approach.

Theoretical Framework

The Resource-Based View (RBV) Initially developed by Wernerfelt (1984) and further expanded by Barney (1991), the RBV posits that an organization's performance is driven by the strategic resources it controls particularly those that are valuable, rare, inimitable, and non-substitutable (VRIN). In this framework, digital technologies and capabilities are considered strategic resources that can significantly enhance the competitive advantage and performance of insurance companies.

Digitalization, from the RBV perspective, can be viewed as an intangible resource that, when properly harnessed, contributes to superior firm performance. Technologies such as artificial intelligence for fraud detection, big data analytics for customer insights, blockchain for secure policy management, and cloud computing for operational flexibility are more than just tools—they become strategic assets. Insurance companies that effectively integrate these technologies are more likely to achieve operational efficiency, reduce claims processing time, improve customer engagement, and ultimately enhance overall performance (Ezekiel & Fagbemi, 2022). However, the possession of digital tools alone does not

guarantee performance; what matters is how these tools are deployed and integrated within the firm's strategic objectives a central tenet of RBV.

In the Nigerian insurance industry, where market penetration is still evolving and competition is increasing, firms that have superior digital capabilities can outperform others. For example, an insurance company that develops an advanced mobile application offering self-service features and personalized policy recommendations can deliver superior value to customers. This not only increases customer satisfaction but also improves internal performance metrics such as customer retention, claim resolution speed, and reduced administrative overhead (Okonkwo & Olaniyi, 2021). These capabilities, if unique and well-protected through organizational culture, skill development, or proprietary systems, fit the RBV criteria for sustainable competitive advantage. Moreover, digitalization enhances a firm's ability to process large volumes of data, forecast trends, and make informed decisions, which are crucial for insurance companies dealing with risk evaluation and premium pricing. These analytical capabilities are increasingly seen as rare and valuable resources in the industry, making them key drivers of performance (Oladipo & Agbaje, 2023). Thus, firms that invest in building strong digital infrastructures and nurturing IT competencies can achieve long-term benefits that competitors may find difficult to replicate.

METHODOLOGY

The survey research design was used for this study. The study's population comprise one thousand and eighty-three (1,083) senior and mid-level employees from the headquarters of the sixteen (16) insurance companies listed on the floor of the Nigeria Exchange Group (NGX). Table 3.1 presents data obtained from the human resource department of these insurance companies.

Table 3.1: Number of Insurance Companies on NGX and senior/ mid-level Employees

	Name of Insurance Company	Number of senior/ mid-level Employees
1	AFRICAN ALLIANCE INSURANCE PLC [MRF]	63
2	AIICO INSURANCE PLC.	78
3	AXAMANSARD INSURANCE PLC [CG+]	73
4	CORNERSTONE INSURANCE PLC [CG+]	79
5	CORONATION INSURANCE PLC [MRF][CG+]	61
6	LASACO ASSURANCE PLC.	67
7	LINKAGE ASSURANCE PLC [MRF]	72
8	MUTUAL BENEFITS ASSURANCE PLC. [MRF]	63
9	NEM INSURANCE PLC [CG+]	61
10	PRESTIGE ASSURANCE PLC [BMF]	74
11	REGENCY ASSURANCE PLC [MRF]	65
12	STACO INSURANCE PLC [DWL]	61
13	STANDARD ALLIANCE INSURANCE PLC. [DWL]	73
14	SUNU ASSURANCES NIGERIA PLC. [CG+]	57
15	UNIVERSAL INSURANCE PLC	73
16	VERITAS KAPITAL ASSURANCE PLC	63
	Total	**1,083**

Source: Human Resource Department of the Insurance Companies

The study adopts Taro Yamane's (1967) formula to obtain the sample size, thus demonstrated as follows:

$$n = \frac{N}{1+N(e)^2}$$

Where n = sample size

N = Population Size (1,083)

e = level of significance at 5% (0.0025)

1 = constant

$$n = \frac{1{,}083}{1 + 1{,}083\ (0.05)^2}$$

$$n = \frac{1{,}083}{1 + 1{,}083\ (0.0025)}$$

n = 292

This study employed proportional stratified sampling and simple random sampling. Proportional stratified sampling will be applied using Bowley's Proportional Allocation Formula to determine the number of respondents selected from different strata within the target population. Following the proportional allocation, simple random sampling was be used to administer the questionnaire to the selected respondents.

Using Bowley's formula for a sample size of 292:

The formula: nh = (Nh × n)/N where:

nh = sample size for bank h

Nh = population of bank h

n = total desired sample size

N = total population (1,083)

Formula: nh = (Nh × 292)/1,083

Table 3.2 Bowley's Proportional Allocation Table

No.	Insurance Company	Employees	Calculation	Sample Size
1	AFRICAN ALLIANCE INSURANCE PLC	63	292 × (63/1083)	17
2	AIICO INSURANCE PLC	78	292 × (78/1083)	21
3	AXAMANSARD INSURANCE PLC	73	292 × (73/1083)	20
4	CORNERSTONE INSURANCE PLC	79	292 × (79/1083)	21
5	CORONATION INSURANCE PLC	61	292 × (61/1083)	16
6	LASACO ASSURANCE PLC	67	292 × (67/1083)	18
7	LINKAGE ASSURANCE PLC	72	292 × (72/1083)	19
8	MUTUAL BENEFITS ASSURANCE PLC	63	292 × (63/1083)	17
9	NEM INSURANCE PLC	61	292 × (61/1083)	16
10	PRESTIGE ASSURANCE PLC	74	292 × (74/1083)	20
11	REGENCY ASSURANCE PLC	65	292 × (65/1083)	18
12	STACO INSURANCE PLC	61	292 × (61/1083)	16
13	STANDARD ALLIANCE INSURANCE PLC	73	292 × (73/1083)	20
14	SUNU ASSURANCES NIGERIA PLC	57	292 × (57/1083)	16
15	UNIVERSAL INSURANCE PLC	73	292 × (73/1083)	20
16	VERITAS KAPITAL ASSURANCE PLC	63	292 × (63/1083)	17
Total		**1,083**		**292**

Source: Researcher's Compilation, 2025

Data was collected through primary sources using a structured questionnaire. The questionnaire employs a five-point Likert scale, with response options ranging from "strongly agree" to "strongly disagree."

To effectively establish the reliability of the construct, it is generally accepted that both Cronbach's Alpha and Composite Reliability (CR) should exceed the benchmark value of 0.7, which is widely regarded as the standard for demonstrating strong internal consistency. The outcomes of Cronbach's Alpha, rho_A, Composite Reliability, and Average Variance Extracted (AVE) are shown in Table 3.3.

Table 3.3: Construct Reliability and Validity of the Indicators

Variables	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Cloud Computing	0.842	0.855	0.881	0.651
Internet of Things	0.874	0.889	0.910	0.714
Organizational Performance	0.861	0.872	0.896	0.682

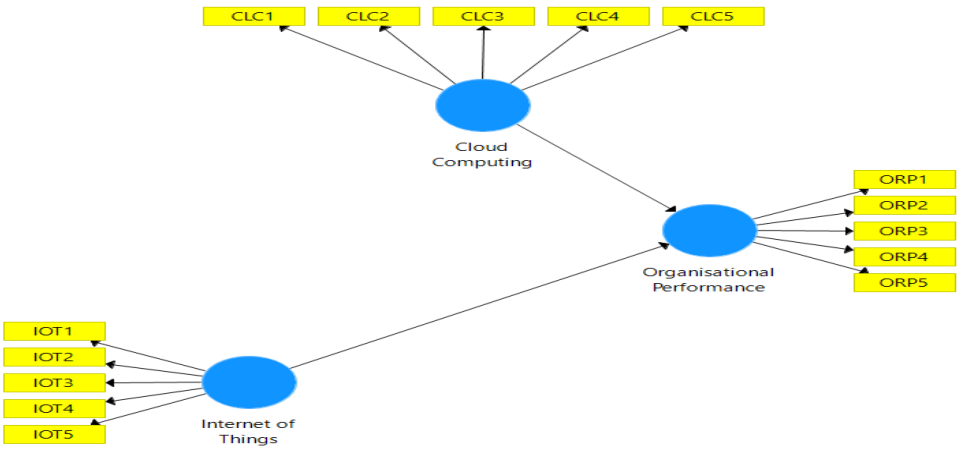
Source: Smart PLS output

Table 3.3 presents the construct reliability and validity results for the key variables in the study, namely Cloud Computing, Internet of Things (IoT), and Organizational Performance. The reliability of the

constructs was assessed using Cronbach's Alpha, rho_A, and Composite Reliability (CR), while convergent validity was evaluated through the Average Variance Extracted (AVE). The results show that all constructs recorded Cronbach's Alpha values above the recommended threshold of 0.7, indicating satisfactory internal consistency among the measurement items (Hair et al., 2022). Specifically, Cloud Computing recorded a Cronbach's Alpha of 0.842, IoT had a value of 0.874, while Organizational Performance returned 0.861, demonstrating acceptable levels of reliability across the constructs. In addition, rho_A values for all constructs exceeded the minimum acceptable benchmark of 0.7, further confirming the internal consistency of the indicators. The rho_A values obtained were 0.855 for Cloud Computing, 0.889 for IoT, and 0.872 for Organizational Performance, all of which signify robust reliability of the measurement model. Furthermore, Composite Reliability (CR) values for all constructs also surpassed the 0.7 threshold, affirming the constructs' reliability and internal consistency (Fornell & Larcker, 1981). The CR values were 0.881 for Cloud Computing, 0.910 for IoT, and 0.896 for Organizational Performance, indicating that the measurement items consistently represent their respective latent variables. The Average Variance Extracted (AVE) values for all constructs were also above the 0.5 minimum threshold, confirming adequate convergent validity (Hair et al., 2022). AVE values were 0.651 for Cloud Computing, 0.714 for IoT, and 0.682 for Organizational Performance, suggesting that a significant proportion of the variance in the indicators is explained by the respective constructs.

The study employed Partial Least Square Structural Equation Modeling (PLS-SEM) to examine the effect of each independent variable on the dependent variable. Smart PLS was used to code and analyze the data for this study to achieve all the set objectives.

Figure 3.1: Structural Equation Model



Source: Smart PLS output

RESULT AND DISCUSSION

Data Presentation

Table 4.1: Distribution and Retrieval of Questionnaire

Questionnaires	Frequency	Percent (%)
Returned	292	100
Not returned	0	0
Total	**292**	**100**

Source: Researcher's Compilation

Table 4.1 presents the distribution and retrieval of the questionnaire used for data collection in the study. A total of 292 questionnaires were administered to the selected respondents across the sampled insurance companies. Out of these, 292 questionnaires were duly completed and returned**,** representing a 100% response rate. Notably, no questionnaire was left unreturned, which means there was no case of non-response**.** This high response rate can be attributed to the effective follow-up strategy and the willingness

of the respondents to participate in the research. The complete retrieval of the distributed questionnaires enhances the credibility and reliability of the data collected, providing a solid foundation for subsequent analysis. This also implies that the findings of the study are based on the full sample size, eliminating concerns related to sampling bias or incomplete data.

Table 4.2: Descriptive Statistics

Statistic	CLC	IOT	ORP
Mean	4.12	3.95	4.21
Median	4.00	4.00	4.20
Maximum	5.00	5.00	5.00
Minimum	2.00	2.50	3.00
Std. Dev.	0.65	0.58	0.49
Skewness	-0.45	-0.32	-0.28
Excess Kurtosis	-0.18	-0.25	-0.11

Source: Smart PLS output

Table 4.2 presents the descriptive statistics for the key variables examined in this study: Cloud Computing**,** Internet of Things (IoT)**,** and Organizational Performance. The descriptive measures provide insights into the central tendencies, variability, and distribution patterns of respondents' perceptions regarding these constructs. The mean score for Cloud Computing is 4.12**,** with a median of 4.00, indicating that, on average, respondents agreed that cloud computing is actively utilized within their organizations. The minimum and maximum values for this variable were 2.00 and 5.00**,** respectively, suggesting that while most responses were favorable, there were some lower levels of agreement among participants. The standard deviation of 0.65 reflects moderate variability in responses. The skewness value of -0.45 indicates a slight negative skew, implying that a majority of respondents provided ratings towards the higher end of the scale. The excess kurtosis of -0.18 suggests the distribution is slightly flatter than a normal distribution but does not indicate significant deviations from normality. For the Internet of Things (IoT)**,** the mean score was 3.95, with a median of 4.00**,** which also reflects general agreement on the application of IoT technologies in the organizations surveyed. The responses ranged from 2.50 to 5.00, showing some variation in participants' experiences or exposure to IoT initiatives. The standard deviation of 0.58 indicates moderate dispersion in responses. The skewness of -0.32 points to a mild left-skewed distribution, with more respondents leaning towards favorable perceptions of IoT usage. The excess kurtosis of -0.25 similarly indicates a slightly platykurtic distribution, with a broader peak than a normal curve. Regarding Organizational Performance, the mean score was 4.21, with a median of 4.20, demonstrating that respondents generally perceived the performance of their organizations positively. The minimum and maximum scores were 3.00 and 5.00, respectively, suggesting a concentration of responses at the higher end of the scale. The standard deviation for this variable was 0.49, indicating low variability and consistent responses across the sample. The skewness of -0.28 shows a slight negative skew, suggesting that most respondents rated organizational performance favorably. Finally, the excess kurtosis of -0.11 implies the distribution is approximately normal, with no significant evidence of extreme responses.

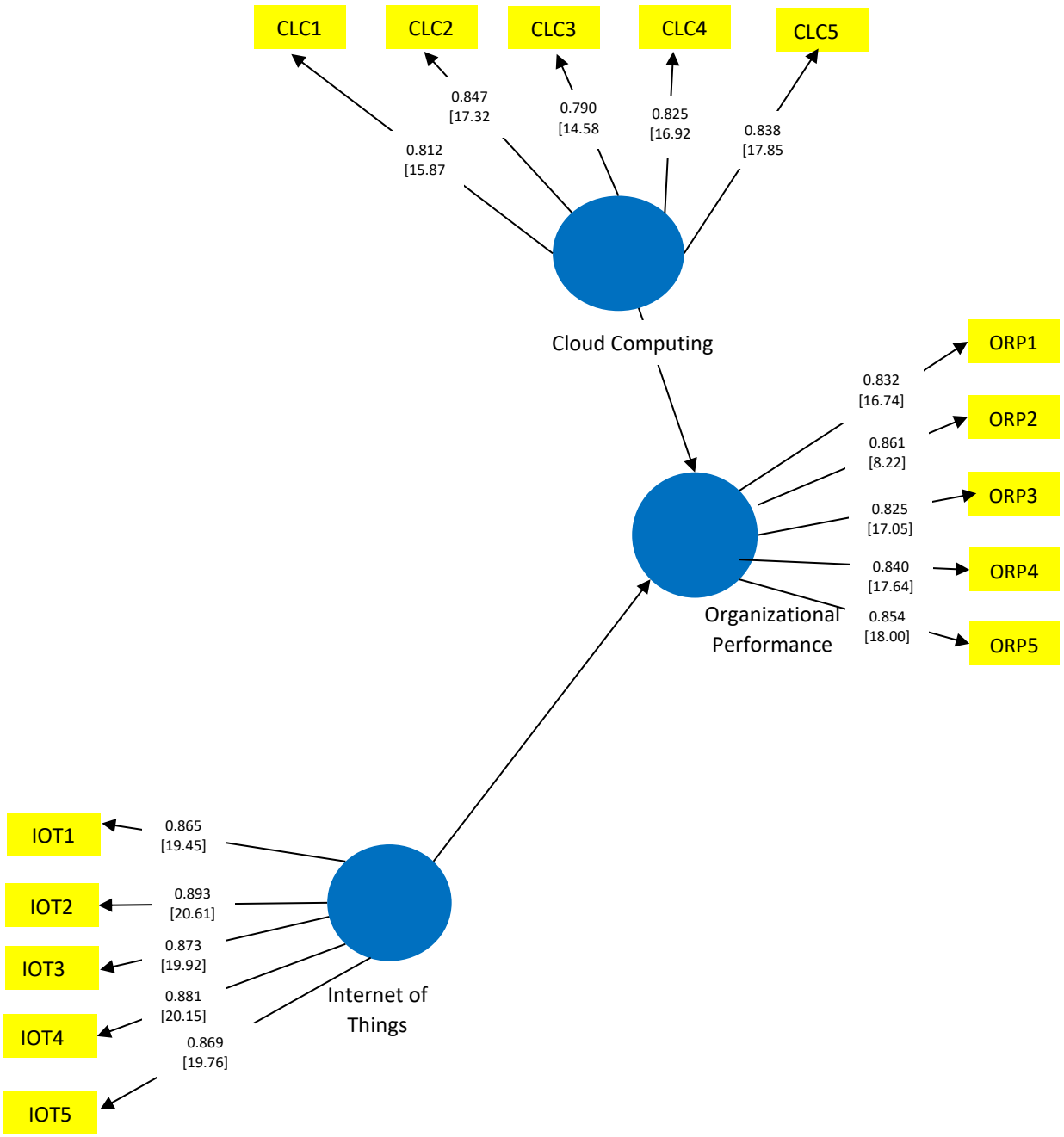
Table 4.3: Factor Loading

Latent Variable	Manifest Variable	Loading	t-statistic
Cloud Computing (CLC)	CLC1	0.812	15.87
	CLC2	0.847	17.32
	CLC3	0.790	14.58
	CLC4	0.825	16.92
	CLC5	0.838	17.85
Internet of Things (IOT)	IOT1	0.865	19.45

Latent Variable	Manifest Variable	Loading	t-statistic
	IOT2	0.893	20.61
	IOT3	0.878	19.92
	IOT4	0.881	20.15
	IOT5	0.869	19.76
Organizational Performance (ORP)	ORP1	0.832	16.74
	ORP2	0.861	18.22
	ORP3	0.825	17.05
	ORP4	0.840	17.64
	ORP5	0.854	18.00

Source: Smart PLS output

Table 4.3 presents the factor loadings and t-statistics for the measurement items associated with the three latent variables of the study: Cloud Computing (CLC)**,** Internet of Things (IOT), and Organizational Performance (ORP)**.** The results indicate that all measurement items recorded factor loadings greater than the recommended threshold of 0.7, as proposed by Hair et al. (2022). This suggests that each manifest variable has a strong association with its respective latent construct, thereby confirming acceptable indicator reliability and convergent validity for the model. For Cloud Computing (CLC)**,** all five items (CLC1 to CLC5) reported loadings ranging from 0.790 to 0.847, demonstrating that each item significantly contributes to the measurement of cloud computing within the context of the study. Similarly, the items for Internet of Things (IOT) recorded high factor loadings, with values between 0.865 and 0.893, exceeding the acceptable benchmark and indicating that the measurement items effectively capture the underlying construct of IoT adoption. The construct for Organizational Performance (ORP) also demonstrated strong factor loadings, ranging from 0.825 to 0.861, further confirming that the indicators adequately represent the performance dimension assessed in this study. In addition to meeting the loading thresholds, all items recorded t-statistics well above the minimum recommended value of 1.96**,** indicating that the factor loadings are statistically significant at the 5% confidence level (Hair et al., 2022). This significance confirms the robustness and reliability of the measurement model.



Note: t-statistics are in square brackets, [].

Source: Smart PLS output.

Table 4.4: Path Coefficient of the Model for Hypotheses Testing

Hypothesis	Beta	t-value	p-value	Decision	f^2
H_{o1}: Cloud Computing → Organisational Performance	0.378	5.214	0.000	Rejected Ho	0.162
H_{o2}: Internet of Things (IoT) → Organisational Performance	-0.257	3.891	0.000	Rejected Ho	0.094

Source: Researcher's Computation from Smart-PLS 3 2025

Hypothesis One

H_{01}: cloud computing has no significant effect on the performance of selected insurance companies in Nigeria

Table 4.4 presents the path coefficient result for the first hypothesis. The result shows a Beta coefficient (β) of 0.378, indicating a positive and significant effect of cloud computing on the performance of selected insurance companies in Nigeria. The t-value of 5.214 exceeds the critical value of 1.96, and the p-value of 0.000 is well below the 0.05 significance threshold, confirming that the relationship is statistically significant. As a result, the null hypothesis (Ho_1) which stated that cloud computing has no significant effect on organizational performance is rejected. The effect size (f^2) for this relationship is 0.162, which, according to Cohen (1988), represents a medium effect. This implies that cloud computing makes a moderate but meaningful contribution to explaining the variance in organizational performance among the sampled insurance companies. Practically, this finding suggests that the adoption and effective use of cloud computing solutions, such as cloud-based data storage, real-time accessibility, and flexible resource management, significantly enhance operational efficiency, decision-making, and overall performance within the insurance sector. For managers in the Nigerian insurance industry, investing in cloud infrastructure and building the necessary technical capabilities can lead to measurable improvements in productivity, service delivery, and competitive positioning.

Hypothesis Two

H_{02}: Internet of Things (IoT) have no significant effect on the performance of selected insurance companies in Nigeria.

Table 4.4 also presents the path coefficient result for the second hypothesis. The Beta coefficient (β) of -0.257 indicates a negative significant effect of IoT on organizational performance among the selected insurance companies in Nigeria. The corresponding t-value of 3.891 exceeds the critical threshold of 1.96, and the p-value of 0.000 is below the 0.05 level of significance, confirming that the negative relationship is statistically significant. Consequently, the null hypothesis (Ho_2), which stated that IoT has no significant effect on organizational performance, is rejected. The effect size (f^2) for this relationship is 0.094, which falls within the range of a small effect according to Cohen's (1988) guidelines. This suggests that while IoT has a statistically significant influence, its practical contribution to explaining variations in organizational performance is relatively modest. From a practical standpoint, the negative significant effect of IoT on organizational performance implies that despite the growing adoption of IoT devices and technologies, insurance companies may be experiencing challenges in effectively integrating these tools into their operations. Such challenges could include data security risks, system complexity, lack of technical expertise, or insufficient infrastructure to support IoT functionality. As a result, rather than enhancing performance, IoT implementation may be creating operational inefficiencies or introducing vulnerabilities that negatively impact overall performance outcomes.

Table 4.5: R^2 of the Model

Dependent Variable	R^2
Organisational Performance	0.482

Source: Smart-PLS output

Table 4.5 presents the coefficient of determination (R^2) for the model, which measures the proportion of variance in the dependent variable Organizational Performance that is explained by the independent variables, namely Cloud Computing and Internet of Things (IoT). The R^2 value of 0.482 indicates that approximately 48.2% of the variability in organizational performance among the selected insurance companies in Nigeria is accounted for by the combined influence of cloud computing and IoT. According to Hair et al. (2022), R^2 values of 0.75, 0.50, and 0.25 are considered substantial, moderate, and weak, respectively, in the context of social science research. Therefore, the R^2 value of 0.482 reflects a moderate predictive power, suggesting that digitalization, as measured by cloud computing and IoT, plays an important role in shaping the performance outcomes of insurance companies in the study area. Practically, this result implies that nearly half of the changes in organizational performance can be attributed to the adoption and implementation of digital technologies. However, it also highlights that

51.8% of the variance in performance is influenced by other factors not included in the current model, such as leadership, regulatory environment, employee skills, and market dynamics, which could be explored in future research. The moderate explanatory power observed aligns with expectations in organizational studies, where multiple external and internal factors interact to influence performance outcomes.

DISCUSSION OF FINDINGS

The results of the path coefficient analysis revealed a positive and statistically significant effect of cloud computing on organizational performance. This implies that cloud computing enhances the operational performance of insurance companies by improving data accessibility, operational flexibility, and overall service efficiency. The findings of this study align with Ayaphila et al. (2024), who found through a literature review of 90 studies that cloud computing enhances cost-efficiency, reliability, and performance. Similarly, Ouma and Gitonga (2023) reported a positive correlation ($r = 0.343$) and a significant regression coefficient ($\beta = 0.348$) between cloud computing and performance at IBM Africa, despite a lower variance explained (10.9%) compared to this study. Also, Aligarh et al. (2023) confirmed, using SEM-PLS, that cloud computing adoption significantly improves MSME performance. These consistent results strengthen the credibility of the present study's findings.

The result from the path coefficient analysis revealed a negative but statistically significant effect of IoT on organizational performance. This indicates that, contrary to expectations, IoT adoption within the Nigerian insurance sector is currently associated with a decline in organizational performance. This outcome suggests that while IoT technologies hold significant potential, their improper implementation, lack of technical expertise, infrastructural challenges, or cybersecurity concerns may be undermining their intended positive impact in the insurance industry. This finding contrasts with Loso et al. (2024), who found that IoT adoption positively impacts operational efficiency and competitive advantage in Indonesia's IT sector using SEM-PLS. Their context and higher IoT maturity may explain the difference from the Nigerian insurance industry. Similarly, Wong and Mbeki (2023) reported a significant positive effect of IoT on performance at GlobeNet Solutions in South Africa, using the Mann-Whitney U test. However, their tech-sector focus and differing methods limit comparability. The negative effect found in this study may stem from low infrastructure, expertise, and cybersecurity readiness in Nigeria's insurance industry.

CONCLUSION AND RECOMMENDATIONS

This study investigated the effect of digitalization on the performance of selected insurance companies in Nigeria, with a particular focus on two key dimensions: Cloud Computing (CLC) and the Internet of Things (IoT). The study adopted a quantitative research approach using Partial Least Squares Structural Equation Modeling (PLS-SEM) to empirically assess the relationship between these variables. The findings revealed that cloud computing has a positive and statistically significant effect on organizational performance. This implies that cloud-based technologies, when properly implemented, enhance operational flexibility, efficiency, data accessibility, and overall performance in the Nigerian insurance sector. This outcome is consistent with existing literature, which suggests that cloud computing enables organizations to achieve scalability, reduce operational costs, and improve service delivery, thereby enhancing competitive advantage. Conversely, the study found that the Internet of Things (IoT) exerts a negative but statistically significant effect on organizational performance among the selected insurance companies. This suggests that, despite the theoretical potential of IoT to improve real-time operations, monitoring, and service innovation, its current adoption within the Nigerian insurance industry may be accompanied by technical challenges, infrastructural limitations, and cybersecurity vulnerabilities, which undermine its intended performance benefits. In conclusion, the study affirms that digitalization has a significant effect on organizational performance of selected insurance companies in Nigeria.

Based on the findings of this study, the study makes the following recommendations:

i. Insurance companies in Nigeria should allocate more resources toward developing a robust cloud computing infrastructure this includes investing in secure servers, storage systems, network connectivity, and cloud-based platforms that support remote data access and processing.

Additionally, continuous training should be provided to staff to ensure effective use of these cloud technologies. Strengthening both the technical foundation and human capacity will improve operational efficiency, enhance real-time access to information, and ultimately boost overall organizational performance, as evidenced by the positive and significant effect of cloud computing in this study.

ii. Insurance companies should adopt a phased and strategic approach to IoT implementation, ensuring proper technical readiness, cybersecurity measures, and integration support are in place before full deployment. This will help mitigate operational disruptions and ensure IoT contributes positively to performance over time.

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APPENDIX: QUESTIONNAIRE

Keywords: SA = Strongly Agree, A = Agree, N = Neutral, D = Disagree, SD = Strongly Disagree.

S/N	Cloud Computing (CLC)	SA	A	N	D	SD
CLC1	Our company effectively utilizes cloud computing for data storage and management					
CLC2	Cloud-based applications have improved our insurance processes and operations					
CLC3	Cloud computing has enhanced our ability to collaborate and share information across departments					
CLC4	Our company has reduced IT infrastructure costs through cloud adoption					
CLC5	Cloud computing has improved the security and recovery of our data					
	Internet of Things (IOT)					
IOT1	Our company uses IoT devices to collect data for risk assessment and pricing					
IOT2	IoT-enabled monitoring systems have improved our claims validation processes					

IOT3	We offer customer incentives for using IoT devices that track behavior and reduce risk					
IOT4	IoT technology has enabled us to develop new insurance products and services					
IOT5	Our company has integrated IoT data with other systems to enhance decision-making					
	Organizational Performance (ORP)					
ORP1	Digitalization has improved our profitability and reduced costs					
ORP2	It has increased our operational efficiency					
ORP3	Our digital efforts have boosted customer satisfaction and loyalty					
ORP4	We've gained market share through digital technologies					
ORP5	Digitalization helps us create innovative insurance offerings					