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EFFECT OF TECHNOLOGICAL ADVANCEMENT ON THE PERFORMANCE OF SELECTED INSURANCE COMPANIES IN NIGERIA

Aminu, Aliyu Mahey Department of Business Administration, Nasarawa State University, Keffi
B. E. Barde Department of Business Administration, Nasarawa State University, Keffi
Ahmed A. Ibrahim, PhD Department of Business Administration, Nasarawa State University, Keffi

Abstract
This study investigated the effect of Technological Advancement on the performance of selected insurance companies in Nigeria. Specifically, the study assessed the effect of technology adoption on organisational performance and examined the impact of digital transformation on the same. A survey research design was adopted. The population comprised 1,083 senior and mid-level employees from the headquarters of sixteen (16) insurance companies listed on the Nigerian Exchange Group (NGX). Using Taro Yamane's (1967) formula, a sample size of 292 respondents was determined. A proportional stratified sampling method combined with simple random sampling was used to ensure fair representation across the companies. Primary data were collected through a structured questionnaire developed on a five-point Likert scale, with responses ranging from strongly disagree to strongly agree. Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The results showed that technology adoption has a significant positive effect on organisational performance, while digital transformation has a positive but statistically insignificant effect on performance among the selected insurance companies. Based on these findings, the study recommends that insurance firms should continue investing in modern technological tools and platforms to enhance operational efficiency. Additionally, companies should adopt a strategic and phased approach to digital transformation, ensuring proper alignment with business objectives, employee readiness, and technological infrastructure to maximize performance outcomes.

Keywords: Technology Adoption, Digital Transformation, Organisational Performance, Insurance Companies in Nigeria

Introduction

Organizational performance remains a central concern for business entities across the globe, as it reflects a firm's ability to achieve its objectives efficiently and effectively. In the contemporary business environment, characterized by rapid technological evolution, performance is increasingly influenced by how well firms leverage technology to enhance operations, improve service delivery, and sustain competitive advantage (Porter & Heppelmann, 2015). In the global insurance industry, performance is typically evaluated through metrics such as profitability, customer satisfaction, operational efficiency, market share, and return on investment (Ghosh, 2020). These indicators have become tightly interwoven with digital capabilities as technological advancement reshapes the dynamics of service industries. In developed economies, insurance companies have embraced various forms of technological advancement to streamline operations, automate processes, and improve decision-making through data analytics and artificial intelligence. For instance, in North America and parts of Europe, the integration of blockchain for fraud detection, machine learning for underwriting, and mobile apps for customer interaction have significantly enhanced operational performance and customer satisfaction (PwC, 2022). These innovations have not only lowered operational costs but also increased the speed and accuracy of services, thus improving overall firm performance.

Conversely, in emerging economies such as Nigeria, the insurance sector has been slower in adopting advanced technologies, owing to infrastructural limitations, regulatory bottlenecks, and resistance to change (Ezekiel & Eze, 2021). However, growing competition, changing consumer expectations, and financial inclusion drives have compelled Nigerian

insurance firms to reconsider their technological strategies. Recent initiatives by the National Insurance Commission (NAICOM) to digitize regulatory processes and promote InsurTech innovation have encouraged insurance companies in Nigeria to integrate new technologies in their service delivery models (NAICOM, 2023).

Technology adoption, defined as the acceptance and effective utilization of new technologies in business operations, has emerged as a vital strategic tool for improving organizational performance. Studies show that adopting technologies such as customer relationship management (CRM) systems, enterprise resource planning (ERP), and mobile platforms contributes to greater efficiency, better data management, and improved customer experience in insurance companies (Ndichu & Muturi, 2022). This, in turn, enhances operational performance and profitability. Similarly, digital transformation, which involves a holistic integration of digital technologies into all aspects of an organization's operations, has been linked to improved performance outcomes. It encompasses not only the deployment of new digital tools but also the transformation of organizational culture, processes, and customer engagement strategies (Verhoef et al., 2021). In the insurance sector, digital transformation enables data-driven underwriting, real-time claims processing, and omnichannel customer service, which collectively strengthen performance outcomes such as responsiveness, scalability, and competitiveness (Karanja & Mugo, 2020).

In Nigeria, the few insurance firms that have undertaken substantial digital transformation have reported improvements in customer reach, operational speed, and compliance accuracy (Adeoye & Adefulu, 2023). However, the level of implementation across the industry remains inconsistent, necessitating empirical investigation into the actual effect of technological advancement through the lenses of technology adoption and digital transformation on the performance of insurance companies.

The performance of insurance companies in Nigeria remains significantly below expectations, with the sector contributing a mere 0.3% to the nation's Gross Domestic Product (GDP), compared to a global average of 7.2% (KPMG Nigeria, 2023). This underperformance is reflected in several critical metrics, including low profitability, prolonged claims processing periods averaging 45 days far exceeding the global benchmark of 5 to 10 days and high expense ratios ranging between 40% and 45%, as opposed to 25% to 30% observed in more developed markets (NIA, 2023; PwC Nigeria, 2023). In contrast, insurers in digitally advanced economies are reporting significantly better outcomes, including 23% higher profitability and 18% improved customer retention rates, underscoring the transformative impact of digital technologies on organizational performance (McKinsey & Company, 2023).

Although Nigerian insurance companies have made notable strides in adopting digital technologies with investment in digital solutions increasing from ₦15.2 billion in 2018 to approximately ₦42.7 billion by 2023 (NIA, 2023) there is still limited empirical evidence on how specific dimensions of technological advancement influence performance outcomes in the Nigerian context. In particular, the impact of technology adoption and digital transformation as critical facets of technological advancement on organizational performance remains underexplored (Oyedotun, 2023). This knowledge gap has implications for strategic decision-making, as it could lead to ineffective technology investments and poor resource allocation within the insurance sector (Adebayo & Johnson, 2022).

While several existing studies have evaluated the effects of digitalization on performance across various sectors and regions, few have focused specifically on Nigeria's insurance industry. For instance, Chaushi et al. (2024) conducted a broad review of digital transformation literature and theoretical models but did not empirically test the relationship between specific dimensions of digitalization and performance metrics within the insurance context. Similarly, Mohamed et al. (2024) examined the role of digital technologies in enhancing organizational performance in Algerian university services, but their findings are not directly applicable to Nigeria's insurance sector due to differences in industry dynamics and regulatory environments. Likewise, Nadkorokoum and Chakor

(2024) assessed digitalization's role in improving public healthcare service delivery in Morocco, offering useful insights on performance frameworks but without attention to the insurance domain or the core technologies relevant to its operations. Against this backdrop, this study seeks to bridge the identified gaps by empirically investigating the effect of technology adoption and digital transformation on the performance of selected insurance companies in Nigeria. By applying Partial Least Squares Structural Equation Modeling (PLS-SEM), the study aims to provide evidence-based insights that can guide strategic digital investments and enhance performance outcomes in the Nigerian insurance industry.

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

i. assess the effect of technology adoption on the performance of selected insurance companies in Nigeria; and
ii. examine the effect of digital transformation on the performance of selected insurance companies in Nigeria

This study tests the following hypotheses:

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

H_{02}: digital transformation has no significant effect on the performance of selected insurance companies in Nigeria

Literature Review

Technological Advancement

Technological advancement refers to the integration of improved and emerging technologies that enhance organizational capabilities, streamline operations, and create value. It includes both the development and effective application of technologies to improve productivity, innovation, and service delivery within organizations (Nguyen & Luu, 2020).

Technology Adoption

Technology adoption is the process through which an organization becomes receptive to, acquires, and effectively utilizes new technologies to enhance internal operations, improve service delivery, and maintain competitiveness (Rogers, 2003).

Digital Transformation

Digital transformation is the strategic and holistic integration of digital technologies into all areas of an organization, fundamentally changing how the organization operates and delivers value to customers while enhancing agility, innovation, and performance outcomes (Verhoef et al., 2021).

Organizational Performance

Organizational performance refers to the ability of a company to effectively achieve its goals and objectives, which may include financial outcomes (e.g., profitability, return on assets), operational efficiency, customer satisfaction, innovation capacity, and market competitiveness (Richard et al., 2009).

Empirical Review

Wilson and Nkemdirim (2025) studied the effect of technology adoption on performance of Ghana Education Service (GES). A sequential explanatory design was implemented. The study population included 15,762 administrative staff across regional and district offices. A sample size of 390 was calculated using Slovin's formula with a 5% margin of error. Systematic random sampling and maximum variation techniques were applied. Data were collected through questionnaires and focus group discussions. Analysis employed both quantitative and qualitative methods. For hypothesis verification, multivariate analysis of variance (MANOVA) was utilized. Results indicated that technology literacy, digital resource integration, perceived ease of use, system reliability, and adaptability significantly influence administrative efficiency and service delivery outcomes. The researchers concluded that technology adoption has a meaningful positive effect on performance of Ghana Education Service. While comprehensive, this study differs from the current research in sectoral focus, as

the present investigation examines Insurance Companies in Nigeria.

Mofam and Igwe (2024) investigated the effect of technology adoption on employee performance of Central Bank of Nigeria (CBN). The study used a cross-sectional survey. A total of 10,748 staff members of CBN were selected for this study. A sample size of 373 was determined for this study using the Krejcie and Morgan (1970) sample size table. The stratified random sampling and snowballing techniques were used. Data were collected using a structured questionnaire. The latent constructs reported good composite reliability values, which ranged from 0.794 (adaptive performance) to 0.911 (perceived technology usefulness). Data were analyzed using descriptive and inferential statistics. For the test of hypotheses, the partial least squares (PLS) SEM method was used. Finding revealed that technology readiness, acceptance, usability, perceived ease of use, and perceived usefulness all significantly influence employee performance and outcomes. It was concluded that employees with high technology readiness produced higher quality work, suggesting that fostering a technology-friendly culture is beneficial. Although this study is comprehensive, it differs in terms of the target population as the current study focuses on Insurance Companies in Nigeria.

Noviana et al (2025) determined the causal relationship between employee capability development and digital transformation on organizational performance through improving public services. This study uses a quantitative approach by measuring variables and analyzing data statistically. This study involved all 103 employees of the Semarang City Regional Revenue Agency, including leaders, heads of divisions/sections, implementing staff, and service officers. This study used a saturated sample or census of the entire population because the population was not too large. This was done to obtain a complete picture of all factors studied by all Bapenda staff. Data were collected through a questionnaire instrument with a Likert scale from 1 to 5, where 1 indicates strongly disagree and 5 indicates strongly agree. The theories used, such as the Digital Performance Management Framework for organizational performance, SERVQUAL for service improvement, the Digital Capabilities Framework for employee capability development variables, and the Public Service Digital Innovation Framework for digital transformation, are the sources of questionnaire indicators. Structural Equation Modeling (SEM) was used with AMOS or LISREL software to analyze the data. The Findings of the study shoe that digital transformation has a positive significant effect on organizational performance. Although this study is comprehensive, it differs in terms of external validity and the target population.

Nahed and Mohammad (2024) analyzed the impact of digital transformation on organizational performance among the Jordanian commercial banks listed on the Amman Stock Exchange. The descriptive research design was used in this quantitative study. Primary data were collected to achieve the objectives of the study. The target population was employees (managers and non-managers) of Jordanian commercial banks listed on the Amman Stock Exchange. The sample size was selected using Krejcie and Morgan rule; after data cleaning procedures, the final sample of 282 respondents was used for final analysis. The study employed regression analysis to arrive at the results. The results confirm that digital transformation has a significant positive effect on customer experience and IT innovation. These results were significant at a 1% level. The results also confirm that digital transformation has a significant positive effect on firm performance, with a significance level of 1%. Moreover, the significant positive impact of customer experience and IT innovation was confirmed. Therefore, the significant positive impact of digital transformation on firm performance was found viz-a-viz direct as well as indirect route. Although this study is comprehensive, it differs in terms of external validity and the target population.

Theoretical Framework

This study is anchored on the Technology-Organization-Environment (TOE) Framework developed by Tornatzky and Fleischer (1990), which explains how organizations adopt and implement technological innovations based on three dimensions: technological, organizational, and environmental contexts. The framework is widely used to examine how internal and external factors influence the decision to adopt new technologies (Baker, 2012). In

this study, it provides a basis for understanding how technology adoption and digital transformation key elements of technological advancement impact organizational performance in Nigeria's insurance sector.

Supporters argue that TOE is a comprehensive model that accommodates both the technological characteristics of innovations and the broader organizational and institutional environment, making it adaptable across industries and countries (Oliveira & Martins, 2011). It also allows researchers to identify multi-level influences on adoption decisions. However, critics contend that the TOE framework lacks explanatory power regarding post-adoption outcomes such as actual performance gains, and often overlooks human and behavioral factors such as employee resistance or digital skills (Ifinedo, 2012). Moreover, it has been criticized for being too broad and not specifying causal pathways between variables (Bouwman et al., 2019). Despite these limitations, TOE remains relevant for this study due to its integrative perspective on digital adoption and organizational performance.

Methodology

For this study, we utilized a survey research design. The participants included a total of one thousand and eighty-three (1,083) senior and mid-level employees from the headquarters of sixteen (16) insurance companies listed on the Nigeria Exchange Group (NGX). You can find the data collected from the human resource departments of these companies in Table 1.

Table 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: Field Survey, 2025

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 used a combination of proportional stratified sampling and simple random sampling. To figure out how many respondents to select from various groups within the target population, we applied Bowley's Proportional Allocation Formula for the proportional stratified sampling. After determining the numbers, we then used simple random sampling to hand out the questionnaire to those chosen 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 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."

Construct Reliability

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.

Table 3: Construct Reliability and Validity of the Indicators

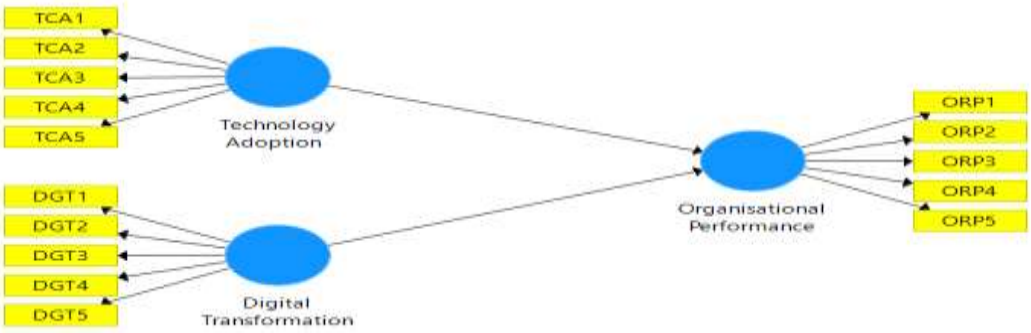
Variables	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Technology Adoption	0.875	0.890	0.912	0.632
Digital Transformation	0.893	0.905	0.924	0.681
Organizational Performance	0.861	0.872	0.896	0.682

Source: Researcher's Compilation using SMART PLS.

Table 3 presents the construct reliability and validity of the indicators used in this study, assessed using Cronbach's Alpha, rho_A, Composite Reliability (CR), and Average Variance Extracted (AVE). All three constructs Technology Adoption**,** Digital Transformation, and Organizational Performance exhibited strong internal consistency and convergent validity. Cronbach's Alpha values for the constructs range from 0.861 to 0.893, exceeding the commonly accepted threshold of 0.70, which indicates good internal reliability of the measurement items (Hair et al., 2021). Similarly, the rho_A values range between 0.872 and 0.905, further confirming construct reliability. rho_A is considered a more accurate reliability estimator in Partial Least Squares Structural Equation Modeling (PLS-SEM), and values above 0.70 are deemed acceptable (Dijkstra & Henseler, 2015). Composite Reliability (CR) values for all constructs also surpass the recommended minimum of 0.70, ranging from 0.896 to 0.924, indicating a high level of reliability and consistency among the indicators (Hair et al., 2021). Furthermore, the AVE values for all constructs ranging from 0.632 to 0.682 exceed the 0.50 threshold, demonstrating adequate convergent validity, meaning that more than 50% of the variance in the indicators is explained by the latent construct (Fornell & Larcker, 1981).

Techniques for Data Analysis and Model Specification

The study utilized Partial Least Squares Structural Equation Modeling (PLS-SEM) to assess the influence of each independent variable on the dependent variable. Data coding and analysis were conducted using SmartPLS software, which facilitated the achievement of the study's stated objectives.



Result and Discussion

Data Presentation

Table 4: Distribution and Retrieval of Questionnaire

Questionnaires	Frequency	Percent (%)
Returned	273	93.5
Not returned	19	6.5
Total	**292**	**100**

Source: Field Survey, 2025

Table 4 shows the distribution and retrieval outcome of the questionnaires administered for this study. A total of 292 questionnaires were distributed to respondents from the selected insurance companies in Nigeria. Of these, 273 were properly completed and returned, resulting in a response rate of 93.5%. This high response rate indicates strong respondent engagement and strengthens the reliability and generalizability of the study's results. In contrast, 19 questionnaires were not returned, accounting for 6.5% of the total. The achieved response rate aligns with Nulty's (2008) guideline, which suggests that a response rate above 70% is adequate for survey research, particularly when involving organizational participants. Consequently, the high retrieval rate in this study offers a sound foundation for accurate data analysis and interpretation.

Descriptive Statistics

Table 5: Descriptive Statistics

Statistic	TCA	DGT	ORP
Mean	4.18	4.10	4.21
Median	4.22	4.15	4.20
Maximum	5.00	5.00	5.00
Minimum	2.75	2.60	3.00
Std. Dev.	0.49	0.54	0.49
Skewness	-0.21	-0.18	-0.28
Excess Kurtosis	-0.35	-0.42	-0.11

Source: Researcher's Computations from Smart PLS3

Table 5 presents the descriptive statistics for the key constructs in this study: Technology Adoption (TCA)**,** Digital Transformation (DGT), and Organizational Performance (ORP)**.** The mean scores for all three variables TCA (4.18), DGT (4.10), and ORP (4.21) indicate that respondents generally agreed with the items on a 5-point Likert scale, suggesting a positive perception of technology usage and organizational performance across the selected insurance companies. The median values closely align with the means, confirming that the data distributions are relatively symmetric. The maximum scores for all variables are 5.00, while the minimum values range from 2.60 (DGT) to 3.00 (ORP), indicating some variation in responses but no extreme outliers. The standard deviations, which range from 0.49 to 0.54, suggest a moderate spread around the mean, indicating consistency in responses. Regarding distribution shape, the skewness values are slightly negative (ranging from -0.18 to -0.28), indicating that the data are approximately symmetric with a slight leftward skew. Additionally, excess kurtosis values fall between -0.42 and -0.11, which are close to zero, implying that the data distributions are relatively normal and free from significant outliers or peakedness.

Table 6: Factor Loading

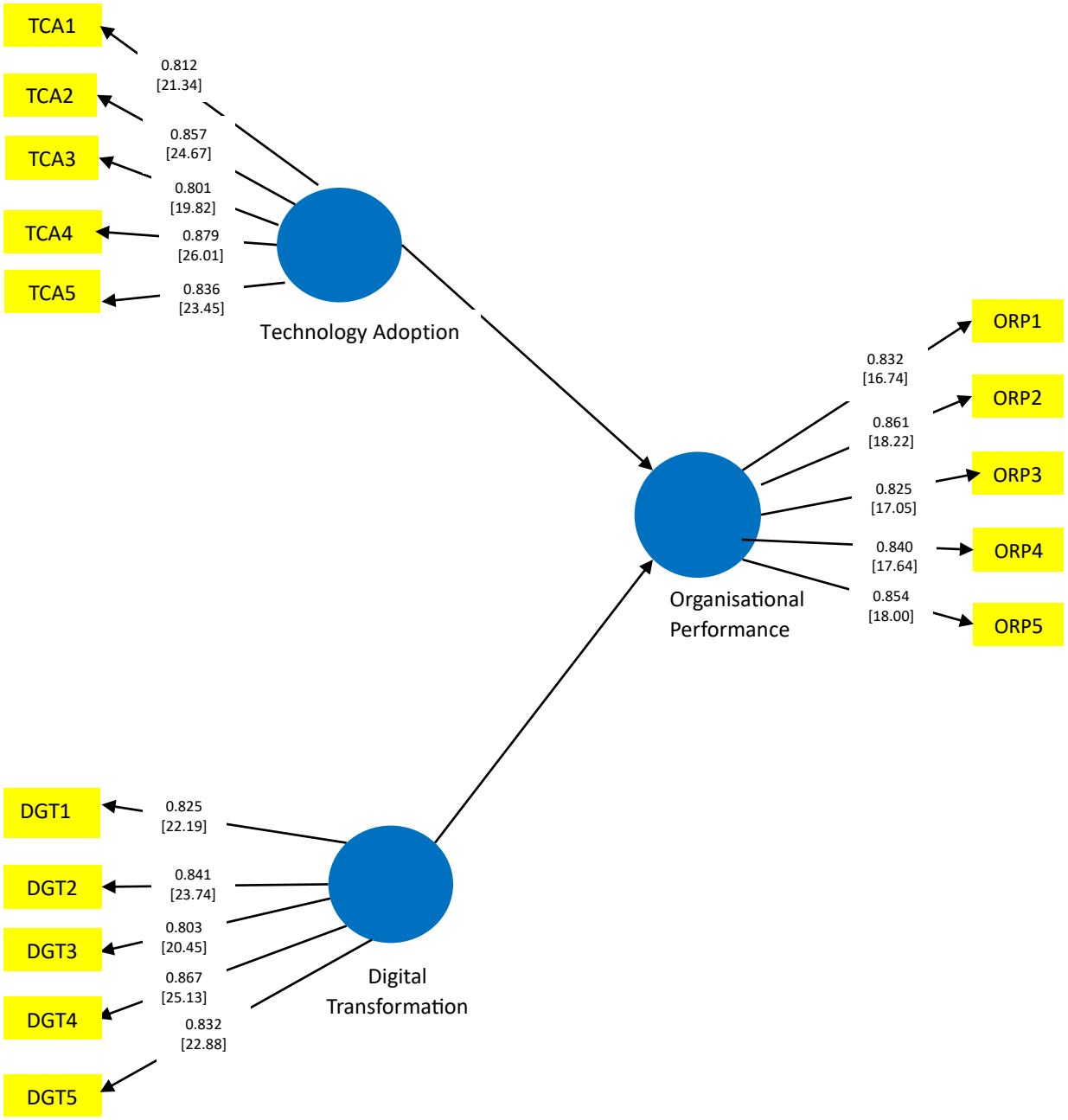
Latent Variable	Manifest Variable	Loading	t-statistic
Technology Adoption (TCA)	TCA1	0.812	21.34
	TCA2	0.857	24.67
	TCA3	0.801	19.82
	TCA4	0.879	26.01
	TCA5	0.836	23.45
Digital Transformation (DGT)	DGT1	0.825	22.19
	DGT2	0.841	23.74
	DGT3	0.803	20.45
	DGT4	0.867	25.13
	DGT5	0.832	22.88
Organizational 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: Researcher's Computations from Smart PLS3

Table 6 presents the factor loadings and corresponding t-statistics for each manifest variable under the latent constructs: Technology Adoption (TCA)**,** Digital Transformation (DGT)**,** and Organizational Performance (ORP)**.** The factor loadings for all items exceed the minimum recommended threshold of 0.70**,** indicating that each indicator strongly reflects its respective latent construct (Hair et al., 2021). Specifically, loadings for TCA items range from 0.801 to 0.879, DGT items range from 0.803 to 0.867, and ORP items range from 0.825 to 0.861. These results suggest a high degree of indicator reliability and confirm that the observed variables adequately measure their underlying constructs.

Furthermore, the t-statistics for all indicators are well above the critical value of 1.96**,** confirming that the loadings are statistically significant at the 5% level ($p < 0.05$) (Sarstedt et al., 2022). For instance, TCA4 recorded the highest t-value (26.01), while ORP1 had the lowest (16.74), both of which are highly significant. The strong and significant loadings demonstrate convergent validity, indicating that the items within each construct are internally consistent and share a high proportion of variance.

Figure 2: PLS Algorithm (Item Loadings and t-statistics)



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

Source: Researcher's Construction from Smart PLS3.

Table 7: Path Coefficient of the Model for Hypotheses Testing

Hypothesis	Beta	t-value	p-value	Decision	f^2
H_{o1}: Technology Adoption → Organisational Performance	0.428	6.42	0.000	Rejected Ho	0.215
H_{o2}: Digital Transformation → Organisational Performance	0.117	1.21	0.227	Accepted Ho	0.014

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

Hypothesis One

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

The result in Table 7 shows the structural path coefficient between Technology Adoption and Organisational Performance. The beta coefficient (β = 0.428) indicates a positive and significant effect of Technology Adoption on Organisational Performance, suggesting that increased adoption of technology leads to improved performance of the organization. This means that as firms enhance their use of technological tools, systems, or platforms, their operational efficiency, productivity, and overall performance tend to increase. The t-value of 6.42 exceeds the critical threshold of 1.96 (for a 95% confidence level), and the p-value of 0.000 is less than the significance level of 0.05. This indicates that the relationship is statistically significant. Hence, the null hypothesis (Ho1), which states that technology adoption has no significant effect on organisational performance, is rejected. Furthermore, the effect size ($f^2 = 0.215$) falls within the medium range according to Cohen's (1988) guidelines (0.02 = small, 0.15 = medium, 0.35 = large). This implies that technology adoption accounts for a moderate effect on organisational performance, contributing meaningfully to the variance explained in the outcome variable. In practical terms, this finding emphasizes the importance of digital transformation and investment in modern technologies by organizations seeking to enhance their competitive edge and performance outcomes.

Hypothesis Two

H_{02}: digital transformation has no significant effect on the performance of selected insurance companies in Nigeria

As presented in Table 7, the path coefficient for the relationship between Digital Transformation and Organisational Performance is β = 0.117, indicating a positive but insignificant effect on Organisational Performance. This suggests that while digital transformation may contribute to improving performance, its influence is relatively minimal in this study context. However, the t-value of 1.21 is below the critical value of 1.96, and the p-value of 0.227 is greater than 0.05, indicating that the relationship is not statistically significant at the 5% level. As a result, the null hypothesis (Ho2), which posits that digital transformation has no significant effect on organisational performance, is accepted. The effect size ($f^2 = 0.014$) is considered small according to Cohen's (1988) guidelines (0.02 = small, 0.15 = medium, 0.35 = large). This implies that digital transformation explains only a negligible portion of the variance in organisational performance within the scope of this study. Practically, this result may indicate that while digital transformation is an important strategic initiative, its benefits on performance may not be immediate or may require complementary factors such as employee capability, supportive leadership, or appropriate digital culture to translate into measurable organisational outcomes.

Table 8: R^2 of the Model

Dependent Variable	R^2
Organisational Performance	0.482

Source: Researcher's Computation from Smart-PLS 3

Table 8 presents the R^2 value for Organisational Performance, which is the dependent variable in the model. The R^2 value is 0.482, indicating that approximately 48.2% of the variance in organisational performance is explained jointly by the independent variables in the model namely, Technology Adoption and Digital Transformation. According to Chin (1998), an R^2 value of 0.26 or higher is considered substantial in behavioral and social science research. Therefore, an R^2 of 0.482 suggests a moderately strong explanatory power, meaning the model provides a reasonably good fit for predicting organisational performance based on the selected predictors. Practically, this implies that nearly half of the changes or improvements in the performance of the organizations studied can be attributed to their levels of technology adoption and digital transformation. The remaining 51.8% may be influenced by other factors not captured in this model such as leadership, organizational culture, employee engagement, or external market conditions. This result supports the relevance of technological strategies in enhancing performance but also highlights the need for a more

holistic approach that includes other critical drivers of success.

Discussion of Findings

Technology Adoption and the Performance of Selected Insurance Companies in Nigeria

The first objective of this study was to assess the effect of technology adoption on the performance of selected insurance companies in Nigeria. Findings from the structural model revealed that technology adoption has a positive and statistically significant effect on organisational performance ($\beta = 0.428$, $t = 6.42$, $p < 0.05$), with a moderate effect size ($f^2 = 0.215$). This indicates that the extent to which insurance companies in Nigeria embrace and implement relevant technological tools and systems contributes meaningfully to improvements in their performance, including operational efficiency, customer satisfaction, and service delivery outcomes. This result is consistent with the findings of Wilson and Nkemdirim (2025), who examined technology adoption in the Ghana Education Service. Their study reported that components such as digital literacy, system reliability, and perceived ease of use significantly enhanced administrative efficiency and service delivery. Although their study differs in sectoral focus—concentrating on the education sector in Ghana—the core insight that technology adoption drives institutional performance supports the outcome of the present research. Similarly, the findings of this study align with those of Mofam and Igwe (2024), who investigated the effect of technology adoption on employee performance at the Central Bank of Nigeria (CBN). Using PLS-SEM, they found that technology readiness, perceived usefulness, and ease of use positively influenced employee outcomes and work quality. This reinforces the conclusion of the present study that technology adoption fosters organisational success, particularly when employees are supported to effectively utilize digital tools. Despite differences in institutional context, education (Wilson & Nkemdirim, 2025), banking (Mofam & Igwe, 2024), and insurance (current study), all three studies converge on a common conclusion: that technology adoption is a significant enabler of performance. The implication is that investment in technological infrastructure and the cultivation of a digitally responsive workforce are vital strategies for improving organisational performance across sectors.

Digital Transformation and the Performance of Selected Insurance Companies in Nigeria

The second objective of this study was to examine the effect of digital transformation on the performance of selected insurance companies in Nigeria. The findings from the path analysis revealed that digital transformation has a positive but statistically insignificant effect on organisational performance ($\beta = 0.117$, $t = 1.21$, $p = 0.227$), with a very small effect size ($f^2 = 0.014$). This indicates that, although there is a positive directional relationship, the influence of digital transformation on performance within the studied insurance companies is not strong enough to be considered statistically meaningful. This result suggests that ongoing digital initiatives may not yet be fully integrated, mature, or impactful in enhancing measurable performance outcomes such as operational efficiency, service quality, or market competitiveness within the Nigerian insurance sector. It is possible that while digital tools and platforms are being introduced, their implementation may be superficial, poorly aligned with strategic goals, or hindered by internal resistance or capacity gaps. This outcome differs from the findings of Noviana et al. (2025), who reported that digital transformation had a positive and significant effect on organisational performance in the context of public service institutions in Indonesia. Their study used SEM to demonstrate that digital transformation when supported by employee capability development and a structured innovation framework enhanced public service delivery and performance. The contrast may stem from differences in institutional context, digital infrastructure maturity, and policy support, as public sector reform in Indonesia may have created stronger enabling environments compared to Nigeria's insurance sector. Similarly, Nahed and Mohammad (2024) found a significant positive relationship between digital transformation and organisational performance in Jordanian commercial banks, mediated by customer experience and IT innovation. Their findings reinforce the view that the impact of digital transformation is more apparent in industries where competition drives rapid digital adaptation and where

digital investments are closely tied to customer-facing processes. By contrast, Nigeria's insurance sector may face implementation lags, regulatory hurdles, or cultural inertia that limit the immediate performance benefits of digital transformation.

Therefore, while the current study acknowledges the theoretical importance of digital transformation, the evidence suggests that its actual contribution to performance remains limited within the Nigerian insurance context. This underscores the need for a more holistic and strategic approach to digital transformation one that involves not only technology deployment but also employee reskilling, leadership support, cultural change, and alignment with core business operations.

Conclusion and Recommendations

This study effect of Technological Advancement on the performance of selected insurance companies in Nigeria. Specifically, it examined the effect of technology adoption and digital transformation on the performance of selected insurance companies in Nigeria. The findings revealed that technology adoption has a positive and significant effect on organisational performance, indicating that the use of modern technological tools contributes meaningfully to improving operational outcomes. In contrast, digital transformation showed a positive but statistically insignificant effect, suggesting that digital initiatives in the insurance sector may not yet be sufficiently mature or strategically aligned to deliver measurable performance gains. Overall, the study concludes that Technological Advancement has a significant effect on the performance of selected insurance companies in Nigeria.

Based on the findings of this study, the following recommendations are made:

i. Insurance companies should continue to invest in up-to-date technological systems and tools, such as automated underwriting, digital claims processing, and customer relationship management platforms. These technologies enhance efficiency and service delivery, thereby strengthening overall organisational performance.

ii. Insurance companies should develop and implement structured digital transformation roadmaps that include leadership involvement, employee engagement, and measurable KPIs. This ensures that digital initiatives are not only introduced but are also strategically embedded and effectively monitored for performance impact.

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APPENDIX: QUESTIONNAIRE

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

	Technology Adoption (TCA)	SA	A	N	D	SD
TCA1	Our company readily adopts new technologies to improve insurance operations					
TCA2	Employees receive adequate training when new technologies are introduced					
TCA3	Our management actively champions technology adoption across the organization					
TCA4	We have effective strategies for overcoming resistance to new technologies					
TCA5	Our company regularly evaluates the effectiveness of adopted technologies					
	Digital Transformation (DGT)					
DGT1	Our company has implemented a comprehensive digital transformation strategy					
DGT2	Digital channels have become our primary means of customer engagement					

DGT3	Our business processes have been redesigned to leverage digital technologies					
DGT4	Digital transformation has changed our organizational culture positively					
DGT5	Our company has reallocated resources to support digital business models					
	Organizational Performance (ORP)					
ORP1	Digitalization has improved our company's financial performance (profitability, revenue growth, cost reduction).					
ORP2	Our operational efficiency (processing time, response time, error reduction) has improved through digitalization					
ORP3	Customer satisfaction and retention have increased because of our digital initiatives					
ORP4	Our market share has grown since implementing digital technologies					
ORP5	Digitalization has enhanced our ability to develop innovative insurance products and services					