FINANCIAL TECHNOLOGY AND FINANCIAL INCLUSION: DOES FINANCIAL LITERACY MATTERS? AN IN-DEPTH ANALYSIS OF NORTH-EASTERN STATE IN NIGERIA

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Abstract
Despite the rapid expansion of financial technology (FinTech) in Nigeria, financial exclusion remains pervasive in the North-East region, particularly in Gombe State. This study investigates the moderating role of financial literacy in the relationship between financial technology and financial inclusion. Using a cross-sectional survey design, primary data were collected from 421 active users of FinTech products across five local government areas in Gombe State. The study employed Partial Least Squares Structural Equation Modelling (PLS-SEM) to test the hypothesised relationships. The results indicate that financial technology has a positive and statistically significant effect on financial inclusion ($\beta = 0.399$, $p < 0.05$), while financial literacy also exerts a significant positive influence on financial inclusion ($\beta = 0.229$, $p < 0.05$). More importantly, financial literacy significantly moderates the relationship between financial technology and financial inclusion ($\beta = 0.128$, $p < 0.05$), strengthening the effectiveness of FinTech in promoting inclusion among financially knowledgeable users. The study contributes to the financial inclusion and digital finance literature by highlighting financial literacy as a critical complementary mechanism for FinTech-driven inclusion in underbanked and low-literacy contexts. Policy implications emphasise the integration of financial literacy interventions with digital financial service expansion in developing economies.

Keywords: Financial inclusion; financial literacy; financial technology; PLS-SEM; Nigeria

1.0 Introduction

Financial inclusion has gained global attention as a catalyst for economic empowerment and poverty reduction. It is generally seen as the access to, and usage of, affordable and appropriate financial products and services by individuals and businesses (World Bank, 2022). Financial inclusion enables people to save, invest, insure against risks, and improve their overall quality of life. It also supports economic growth by expanding the formal economy and encouraging savings and investment (Demirgüç-Kunt et al., 2022). Financial inclusion is a core enabler of seven of the seventeen Sustainable Development Goals (SDGs), including poverty eradication, gender equality, and reduced inequalities (UNSGSA, 2018).

In Nigeria, financial inclusion has been the focus of several national policies, most notably the Central Bank of Nigeria's National Financial Inclusion Strategy (NFIS) launched in 2012. The

NFIS aimed to reduce the exclusion rate to 20% by 2020, but this goal remains unmet. The 2020 Enhancing Financial Innovation and Access (EFInA) report reveals that only 64% of Nigerian adults are financially included, meaning over 38 million adults remain excluded (EFInA, 2020). The report highlights persistent gaps in financial service access across gender, geographic, and socio-economic lines. In particular, rural populations and northern regions experience limited access to formal financial institutions. While financial technology (FinTech) has emerged as a promising solution to these gaps, its effectiveness has been hindered by infrastructural, regulatory, and knowledge-based barriers (Ozili, 2023), especially, in the far northern region, such as Gombe State.

In Gombe State, the problem of financial exclusion is especially pronounced due to its largely rural economy, low income levels, and relatively weak financial infrastructure. Gombe has one of the highest financial exclusion rates in the country, with 45% of adults lacking access to formal financial services (EFInA, 2020). Despite the introduction of mobile banking and agency banking in recent years, uptake has been sluggish. Structural challenges: such as poor network coverage, lack of trust in formal financial institutions, and low literacy levels continue to prevent meaningful engagement with FinTech solutions (Shaikh et al., 2020). Thus, it is essential to examine the contextual factors that influence the effectiveness of FinTech in fostering inclusion in such underbanked regions of the state.

Financial technology (FinTech) encompasses the use of technology to enhance and deliver financial services efficiently. It includes digital wallets, mobile money, online banking, peer-to-peer lending, and blockchain systems (Gomber et al., 2018). In Sub-Saharan Africa, FinTech has been praised for its ability to overcome physical barriers to financial access, reaching remote areas where traditional banks are absent (Demirgüç-Kunt et al., 2022). Nigeria has experienced rapid growth in mobile money and agency banking, yet these innovations have not uniformly translated into improved financial inclusion.

In theory, FinTech reduces costs, expands reach, and increases the speed of service delivery. However, its actual impact on inclusion depends on users' willingness and ability to adopt the technology (Lusardi & Mitchell, 2014). In Gombe State, the limited digital literacy of many residents constrains their capacity to engage with mobile money services or digital lending platforms. Despite the availability of FinTech options, many individuals remain unbanked or continue to rely on informal financial systems due to fear, distrust, or a lack of understanding (Ozili, 2018).

FinTech holds great potential to increase financial inclusion in Gombe, but only if the population is equipped with financial literacy knowledge to take advantage of these services. Digital solutions such as USSD codes and agency banking can bring services closer to rural communities, but the presence of such tools does not guarantee their use. Factors like trust in digital platforms, awareness, and basic financial skills significantly shape adoption outcomes (Shaikh et al., 2020). This raises a serious concern on the extent of the population’s financial literacy level and the likelihood to moderate the effect of FinTech on financial inclusion in Gombe state.

According to the EFInA (2020) report, financial exclusion is significantly higher in the North-East region (45%) compared to the South-West (18%). Only 44% of women in the North-East have access to formal financial services, and uptake of digital financial services is among the lowest in the country. Mobile money accounts in this region are largely underutilized, with many accounts remaining dormant due to lack of trust, digital skill, or awareness (CBN, 2018;

World Bank, 2018). This suggests that the availability of FinTech does not automatically lead to financial inclusion, especially in low-literacy settings like Gombe. Hence, this logically, justify the need of financial literacy as a moderator to strengthen the relationship between FinTech and financial inclusion in the context of this study.

Contradictory findings in existing literature provide further rationale for introducing financial literacy as a moderating variable. For instance, while Ozili (2023) and Demirgüç-Kunt et al. (2022) found a strong positive relationship between FinTech and financial inclusion, others such as Shaikh et al. (2020) observed that without adequate financial literacy, individuals struggle to use digital platforms effectively. According to Baron and Kenny (1986), when the relationship between an independent and a dependent variable is inconsistent across studies, a moderating variable may be introduced to strength or change the direction of the relationship between two other variables. In this study, financial literacy may play such a role by enhancing or diminishing the effectiveness of FinTech in promoting inclusion. Individuals with high financial literacy are better able to interpret financial information, avoid risks, and make informed decisions using digital tools. Conversely, those with limited financial knowledge may either misuse digital platforms or avoid them entirely, thus remaining excluded. Thus, this necessitate this study to examining the effect of FinTech on Financial inclusion using financial literacy as a moderator in in the context of Funakaye, Kwami, Gombe,Dukku and Nafada Local Government Areas of Gombe State.

The objective of the study is to examine the moderating effect of financial literacy on the relationship between financial technology and financial inclusion in Gombe State. To achieve this objective, the study hypothesized as follows:

i. Financial technology does not significantly affect financial inclusion in Gombe State.
ii. Financial literacy does not significantly influence financial inclusion in Gombe State.
iii. Financial literacy does not moderate the relationship between FinTech and financial inclusion in Gombe State.

2.0 Literature Review and Theoretical Framework

Concept of Financial Inclusion

Financial inclusion refers to the process of ensuring that individuals and businesses, especially those in underserved communities, have access to and actively use affordable and appropriate financial products and services (World Bank, 2022). These services include transactions, payments, savings, credit, and insurance that are delivered responsibly and sustainably. True financial inclusion is not only about physical access but also about effective usage and improving individuals' financial health. It is a key policy objective globally, aimed at reducing poverty and promoting shared prosperity (Albnian & Alkhasawneh, 2025).

Concept of Financial Technology

Financial technology (FinTech) encompasses technological innovations that facilitate the provision and delivery of financial services through platforms such as mobile banking, e-wallets, peer-to-peer lending, and blockchain applications (Aliano et al., 2024). FinTech is lauded for its capacity to reduce transaction costs, eliminate geographical barriers, and offer convenient financial tools to both banked and unbanked populations. In Sub-Saharan Africa, mobile money solutions and agent banking networks have significantly broadened access to finance (Wang et al., 2024).

Concept of Financial Literacy

Financial literacy is defined as the capacity to understand and effectively apply various financial skills, including budgeting, saving, investing, and comprehending financial risks (Aliano et al., 2024; Lusardi & Mitchell, 2014). It includes both knowledge of basic financial concepts and the confidence to make informed decisions. Financial literacy enables individuals to interact successfully with modern financial systems, particularly digital platforms introduced through FinTech. Studies show that users with low literacy levels are less likely to use financial services efficiently, even when they have access (Shaikh et al., 2020).

Review of Empirical Studies

FinTech and Financial Inclusion

Chew, Tan, and Abdullah (2024)studied Alipay's digital payment ecosystem in Malaysia and found that FinTech adoption among SMEs significantly increased financial service utilization. However, they highlighted barriers such as digital trust and low tech-savviness in older SME owners. Similarly, In a study focused on Nigeria from 1990 to 2022, Yakubu and Aladejare used the ARDL model to analyze the effect of FinTech innovations on poverty, income inequality, and financial inclusion. They found that digital financial services especially mobile money and agent banking significantly enhanced access to formal financial systems in rural areas. However, adoption lagged behind due to infrastructural barriers and low digital literacy, indicating that FinTech alone is not sufficient for inclusive development. Also, Ozili (2023) analyzed the Nigerian digital finance space and discovered that while FinTech platforms expanded access, financial exclusion persisted in rural areas due to poor digital infrastructure and lack of financial literacy. His findings support the inclusion of behavioral and cognitive factors in FinTech policy.

Financial Literacy and Financial Inclusion

Yakubu and Yusuf (2023) examined the impact of financial literacy on the financial inclusion of rural populations. Using a sample of 423 respondents and structural equation modeling (SEM), they found that higher levels of financial literacy significantly improved both access to and usage of formal financial services. The study emphasized that digital product adoption remained low among those with limited financial knowledge, despite having mobile access.Also**,** Ayedun et al. (2022) focused on Nigerian smallholder farmers and explored how financial literacy affects their willingness to engage with financial institutions. The study revealed that farmers with stronger literacy levels were more likely to use savings accounts, micro insurance, and digital loans. Regression analysis showed a statistically significant positive relationship ($p < 0.01$) between literacy and inclusion, particularly in contexts with mobile banking infrastructure.

Similarly,Dube and Bhunu (2024) employed World Bank FinScope data to analyze how financial literacy moderates financial inclusion. Their findings suggest that in countries with similar FinTech access, inclusion outcomes diverged significantly based on financial literacy scores. They concluded that literacy serves not just as a direct contributor to inclusion, but also as a buffer against digital exclusion.

Theoretical Framework

The study was underpinnedbyTechnology Acceptance Model (TAM), developed by Davis (1989), is one of the most widely used theories in explaining how users come to accept and use technology. This theory provides a robust theoretical foundation for examining the relationship

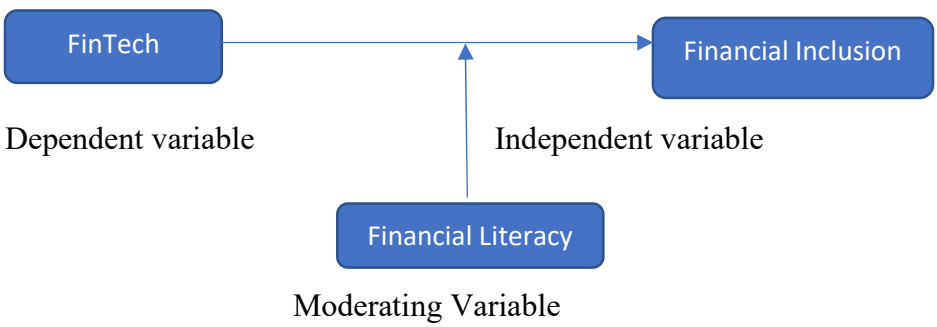
between financial technology and financial inclusion, particularly when moderated by financial literacy. TAM posits that an individual's acceptance and use of technology are primarily determined by two key perceptions: perceived usefulness and perceived ease of use. In the context of this study, financial technology represents the technological innovation whose adoption is necessary for enhancing access to and usage of financial services. Financial inclusion outcomes are therefore contingent on users' willingness and ability to accept and effectively utilize fintech platforms, which aligns directly with the core propositions of TAM.

Perceived usefulness, as articulated in TAM, refers to the extent to which individuals believe that using a particular technology will improve their performance or quality of life. Applied to this study, fintech services such as mobile banking, digital payments, and online lending are perceived as useful when they reduce transaction costs, improve convenience, and expand access to financial services for underserved populations. When users recognize these benefits, they are more likely to adopt fintech solutions, thereby fostering greater financial inclusion. However, the extent to which these benefits are understood and appreciated is influenced by users' level of financial literacy, which shapes their capacity to evaluate and trust fintech offerings.

Similarly, perceived ease of use plays a critical role in technology adoption by reflecting the degree to which individuals believe that using a technology will be free of effort. In the fintech–financial inclusion nexus, complex interfaces, limited understanding of digital financial products, and fear of errors can hinder adoption, especially among financially excluded groups. Financial literacy acts as a moderating factor by enhancing users' confidence, skills, and familiarity with financial concepts and digital tools. Individuals with higher financial literacy are better equipped to navigate fintech platforms, interpret financial information, and overcome usability challenges, thereby strengthening the positive impact of fintech on financial inclusion.

Overall, TAM underpins this study by explaining how perceptions of usefulness and ease of use influence the adoption of financial technology and how financial literacy conditions this process. By positioning financial literacy as a moderator, the study extends TAM beyond its traditional framework to account for individual capability differences that affect technology acceptance. This integration underscores that while fintech has the potential to drive financial inclusion, its effectiveness depends not only on technological features but also on users' financial knowledge and competencies, making TAM a suitable and theoretically sound model for the study.

The research model is depicted as follows:



3.0 Research Methodology

This study employs a descriptive survey research design. This research design enabled the researcher to collect primary data and employ descriptive and inferential statistics for its analysis. In addition, this study also adopts a cross-sectional research design. Accordingly, cross-sectional study is a one-off study that gathers data just once upon a time (Sekaran & Bougie 2010).

The population of the study comprised of all active users of fin-tech products such as mobile banking, e-wallets, peer-to-peer lending, and blockchain applicationacross the five local government areas (LGAs) in the Northern senatorial zone of Gombe State.Since the population is infinite, Cochran's formula, was used to arrive at the minimum sample size for the study using the following standard standard parameters: 95% confidence level (Z=1.96), 5% margin of error (e=0.05), and maximum variability (p=0.5). A sample of 384 was arrived. In anticipation of non-response, 30% was added (Salkind, 2007) making the sample size 538 which was distributed using purposive sampling to the identified active users of fin-tech products. A total of 431 copies of questionnaire were retrieved and 6 were excluded due to unengaged responses. Finally, a total of 421 were retained and used for further analysis.

Measurement

Financial literacy is measured using a 5item scale measuring financial behaviour dimension developed by Potrich, Vieira, and Paraboni (2025). Financial Inclusion was measured using 7 items adapted from World Bank Global Findex Database (2017) and Financial Technology is measured using theShortened 12-Item FinTech Scale developed by Venkatesh et al., (2003). All the items were adapted and measured on a 5-point Likert Scale ranging from 5=Strongly Agree to 1=Strongly Disagree.

PLS-SEM Modelling

A PLS path model contains two (2) elements; first, the measurement model and second, the structural model. The measurement model specifies the relations between a construct and its observed indicators. In contrast, the structural model also known as the inner model specifies the relationships between the constructs.

Measurement Model

Assessment of a measurement model encompasses determination of individual item reliability, internal consistency reliability, content validity, convergent validity and discriminant validity (Hair et al., 2011).

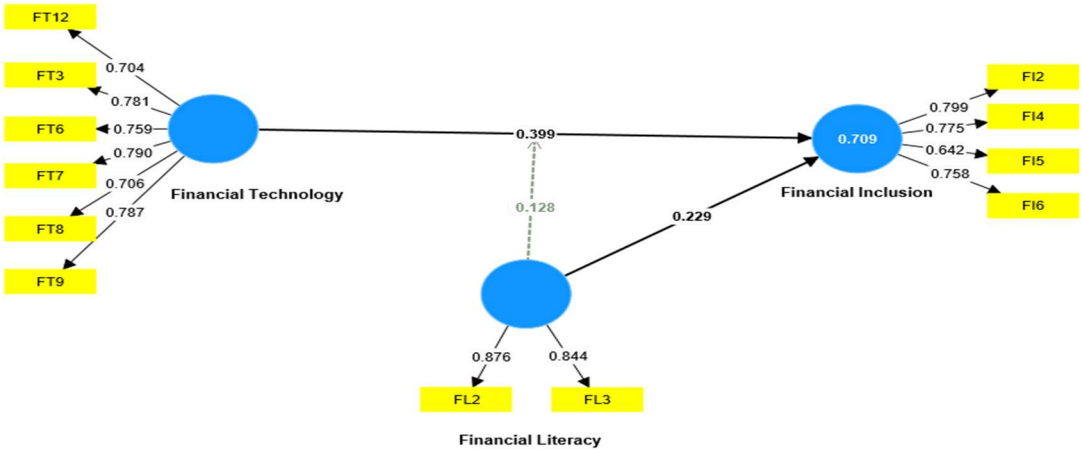


Figure 1: Measurement Model

4.0 Results and Discussion

Individual Item Reliability

The individual item or factor reliability of reflective constructs was determined using the outer loadings of each construct's indicators (Hair *et al.*, 2017). Based on Hair's *et al.* (2014) rule of thumb, an indicator with a loading must be between 0.40 and 0.70, and thus the deletion is subject to the increment of the AVE and CR. Hence, following Hair's *et al.* (2014) rule of thumb, out of 24 items measuring 3 reflective constructs of this study, only 12 items (i.e., FT2, FT4, FT5, FT10, FT11, FT12, FI1, FI3, FL1,FL4, and FL5) were deleted. Therefore, based on the criterion given by Hair *et al.* (2017), all the remaining items are reliable to measure their respective reflective latent constructs. Even though FI6 is less than 0.70, it is maintained because it is already above the critical level of 0.40, and its removal would not bring about any significant change to either AVE or CR. Additionally, Hulland (1995) argued that item loadings should be from 0.5 and above. Therefore, based on the criterion given by Hair et al. (2017), and Hulland (1995), all the remaining items are reliable to measure their respective reflective latent constructs.

Table 1:
Item Loading, Internal Consistency, and Average Variance Extracted

Constructs	Items	Loadings	CR	AVE
Financial Inclusion				
	FI2	0.799	0.833	0.557
	FI4	0.775		
	FI5	0.642		
	FI6	0.758		
Financial Literacy	FL2	0.876	0.850	0.740
	FL3	0.844		
Financial Technology	FT12	0.704	0.888	0.571
	FT3	0.781		
	FT6	0.759		
	FT7	0.790		
	FT8	0.706		
	FT9	0.787		

Source: Smart PLS 4.0 output based on survey data, 2025.

Internal Consistency Reliability

The present study used composite reliability (CR) to determine the internal consistency reliability of the constructs. It has been suggested that a reflective latent construct is said to be reliable when it has at least 0.70 value (Hair *et al.*, 2014). As shown in Table 1, FI has a has a CR value of 0.833, FL has 0.850, and FT has 0.888. Thus, going by the aforementioned rule of thumb of 0.70 and above for the acceptable values of CR, the researcher has concluded that all of these constructs are reliable as all their respective composite reliability's values are above the threshold (Hair et al., 2017).

Convergent Validity of Reflective Models

The primary approach to confirm convergent validity in reflective constructs is through the Average Variance Extracted (AVE). Typically, an AVE of 0.50 or greater is recommended to establish convergent validity (Hair et al., 2017), as this level implies the latent construct

accounts for at least half of the variance in its indicators (see Hair et al., 2017). Adhering to the 0.50 threshold for AVE, all reflective constructs demonstrate convergent validity, with each surpassing this benchmark. In particular, drawing from the PLS-SEM algorithm outputs displayed in Table 1, Financial Inclusion has an AVE of 0.557, Financial Literacy has 0.740, and Financial Technology has 0.571, respectively.

Discriminant Validity

This study employs the Fornell-Larcker criterion to assess discriminant validity. According to this method, a construct achieves discriminant validity if the square root of its Average Variance Extracted (AVE) exceeds its correlations with all other reflective constructs in the model (Fornell & Larcker, 1981). Based on the provided data, all reflective latent constructs meet this criterion, as shown in Table 2. The square roots of the AVEs for each construct, that is, Financial Inclusion (0.746), Financial Literacy (0.860), and Financial Technology (0.755), are higher than their respective correlations with other constructs.

Table 2:
Discriminant Validity: Fornell and Larcker

	Financial Inclusion	Financial Literacy	Financial Technology
Financial Inclusion	**0.746**		
Financial Literacy	0.719	**0.860**	
Financial Technology	0.710	0.711	**0.755**

Source: Smart PLS 4.0 Output, 2025.

As can be seen in Table 2, each reflective construct in this study is distinct, and captures unique phenomena not represented by other constructs.

Structural Model Result

Under the structural model, the study tested the hypothesis of the study, and determined the coefficient of determination(R^2).

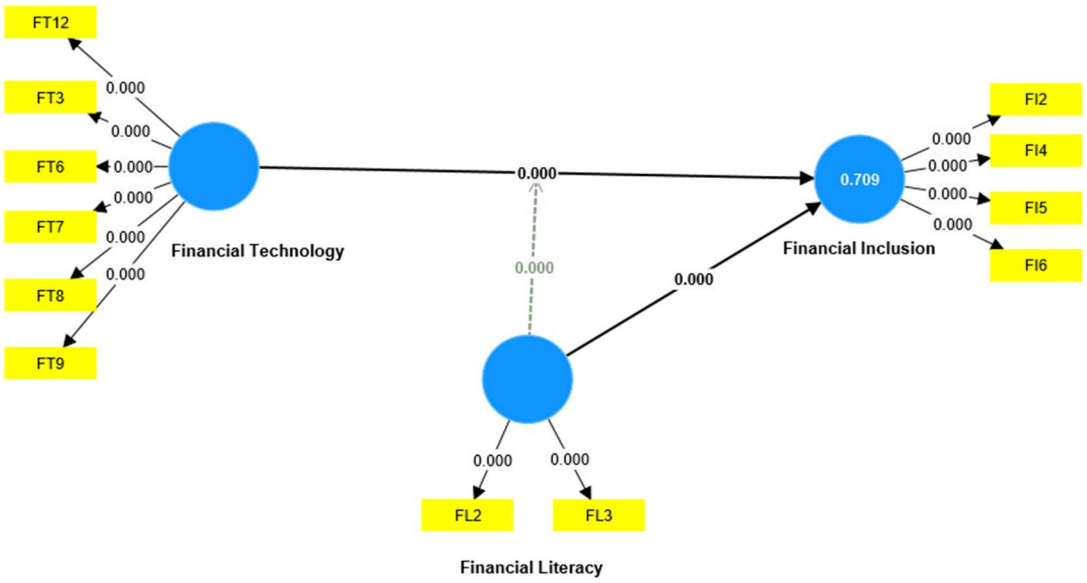


Figure 2: PLS Algorithm (Direct and Indirect Relationship)

Coefficient of Determination

The R^2 valuereflects the combined influence of exogenous variables on the endogenous variable. The R^2 value for Financial Inclusion is 0.709. This indicates that 70.9% of the variance in Financial Inclusion is explained by the exogenous latent variables in the model. This high R^2 value suggests strong predictive accuracy of the model, demonstrating that the exogenous constructs collectively account for a significant portion of the variation in Financial Inclusion (Hair et al., 2017). Hence, the remaining 20.1% is explained by other factors not captured in the model.

Test of Hypotheses

The result of the test of hypotheses is presented in Table 3.

Table 3:
Hypotheses Testing

Relationship	Beta	Standard deviation	T statistics	P values	Decision
FL -> FI	0.229	0.017	13.584	0.000	Reject
FT -> FI	0.399	0.016	24.419	0.000	Reject
FL x FT -> FI	0.128	0.007	19.167	0.000	Reject

Source: Smart PLS 4.0 Output, 2025.

As shown in the Table 3, Financial Literacy has a positive significant effect on Financial Inclusion ($\beta = 0.229$, T-value = 13.584, P-value = 0.000). This indicates that a unit increase in Financial Literacy leads to a 22.9% increase in Financial Inclusion. Thus, $H0_1$ is rejected at 5% level of significance. Similarly, Financial Technology shows a significant positive effect on Financial Inclusion ($\beta = 0.399$, T-value = 24.419, P-value = 0.000). The beta value suggests that a unit increase in Financial Technology results in a 39.9% increase in Financial Inclusion. Consequently, $H0_2$ is rejected at 5% level of significance.

On the moderation relationship, Financial Literacy was found to moderate the relationship between Financial Technology and Financial Inclusion ($\beta = 0.128$, T-value = 19.167, P-value = 0.000). This indicates that the interaction between Financial Literacy and Financial Technology affects Financial Inclusion, thereby strengthening the relationship. Thus, $H0_3$ is rejected at the 5% significance level.

Discussion of Findings

The study examined the direct effect of financial technology and financial literacy on financial inclusion as well as the moderating role of financial literacy on the relationship between financial technology and financial inclusion in Gombe State.

The first objective of the study is to determine the effect of financial technology on financial inclusionin Gombe state. The result revealed that financial technology significantly affects financial inclusion in Gombe State. This is through delivering accessible digital services such as mobile wallets, agent banking, and USSD platforms to rural and unbanked populations who face severe limitations in traditional banking infrastructure. In Gombe, characterized by sparse bank branches, high poverty rates, and over 40% financial exclusion particularly among women and youth, fintech bridges these gaps through low-cost transactions, remittances, and microloans. (NCC, 2024). This shows how innovations like Opay and PalmPay enable seamless financial participation without physical proximity to urban centers, fostering economic resilience amid regional challenges like insurgency and economic volatility. Several studies corroborate this finding with empirical evidence from similar contexts. For instance,

Yakubu and Yusuf(2023), Ayedun et al. (2022), Dube and Bhunu (2024) Goldthorpe (2025), Ozili (2025), Yakubu and Bunyaminu (2021) among others demonstrated that fintech adoption positively impacts financial inclusion across Nigeria. From the Technology Acceptance Model (TAM) perspective, this significant relationship is explained by fintech's high perceived usefulness which offers cost savings, speed, and convenience in daily transactionsand perceived ease of use, especially via simple interfaces on feature phones prevalent in Gombe (Davis, 1989). According to TAM, these perceptions drive behavioural intention to adopt technology, which directly translates to financial inclusion.

The second objective of the study is to determine the effect of financial literacy on financial inclusion in Gombe state. The result revealed that financial literacy has a significant positive influence on financial inclusion in Gombe State, Nigeria. Financial literacy provides individuals with essential knowledge of budgeting, savings, credit management, and risk assessment, thereby enabling confident engagement with available financial services. In Gombe state plagued by low adult literacy rates around, poverty, and cultural barriers to formal finance, literate individuals are more inclined to open accounts, utilize cooperatives, and access microcredit, which minimizes the widespread exclusion that leaves over 40% of northern adults unbanked (EFInA, 2023; UNESCO, 2022). Previous studies such as Chew, Tan, and Abdullah (2024), Ozili (2023), Oluwaseun and Adeola (2021) among others have also established a significant effect of financial literacy on financial inclusion. Applying the Technology Acceptance Model (TAM), financial literacy strengthens the path to inclusion by elevating perceived ease of use and usefulness of financial services, which are foundational to adoption intentions (Davis, 1989). Illiterate users in Gombe often perceive banking as intimidating due to paperwork or calculations, but literacy mitigates these barriers, which foster positive attitudes and actual usage.

Lastly, the third objective of the study is to determine the moderating role of financial literacy on the relationship between financial technology and financial inclusion. As the result shows, financial literacy significantly moderates the relationship between financial technology and financial inclusion in Gombe State, Nigeria, by increasing fintech's positive effects among knowledgeable users. In the context of Gombe state, high-literacy individuals fully leverage tools like mobile apps for transactions and savings, whereas others remain sidelined, creating a threshold effect that underscores the need for complementary education (Ozili, 2025; EFInA, 2023). This moderation reveals fintech's potential is conditional, optimizing inclusion only when paired with understanding in a region with entrenched knowledge gaps.Within the Technology Acceptance Model (TAM), this moderation operates by reinforcing perceived ease of use and usefulness of fintech specifically for literate users, who better navigate complexities and trust platforms, thus intensifying the adoption-inclusion link (Davis, 1989). For low-literacy groups in Gombe, these perceptions weaken and stall behavioural intention as TAM predicts

5.0 Conclusion and Recommendation

The study empirically demonstrates that financial technology exerts a significant positive effect on financial inclusion in Gombe State, Nigeria, by delivering accessible digital services. Additionally, financial literacy significantly enhances financial inclusion by equipping individuals with budgeting, savings, and credit management skills, which helps to overcome cultural and literacy barriers. Crucially, financial literacy moderates the fintech-inclusion relationship, thereby strengthening fintech's benefits for knowledgeable users. These findings affirm fintech's transformative potential in Gombe state. Based on the findings and conclusion of the study, the following are recommended:

i. Policymakers and fintech firms should prioritize expanding low-cost, feature-phone-compatible platforms like Opay and PalmPay in Gombe's rural areas, and partner with telecoms to enhance network coverage and subsidize data for unbanked users, thereby accelerating inclusion without relying on traditional branches.

ii. The Gombe State government, in collaboration with NGOs, should roll out community-based financial literacy programmes tailored to local languages and cultures especially targeting women and youth through cooperatives and mosques to boost account openings and microcredit uptake.

iii. Financial regulators such as the CBN should mandate fintech providers to embed simplified literacy modules (e.g., interactive tutorials on apps) and launch joint public awareness campaigns with educators in order to ensure low-literacy users in Gombe overcome digital hesitancy.

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