EFFECTS OF SUPPLY CHAIN FINANCING ON PALM OIL VALUE CHAIN PERFORMANCE: EVIDENCE FROM BAISSA, TARABA STATE.

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ABSTRACT

This study examines the effects of supply chain financing on palm oil value chain performance in Baissa, Taraba State, Nigeria, drawing on Resource-Based View (Barney, 1991), Transaction Cost Economics (Williamson, 1985), Value Chain Theory (Porter, 1985), and Supply Chain Finance Theory (Pfohl & Gomm, 2009). Specifically, it evaluates the influence of contract farming finance, digital/fintech-enabled finance, inventory/warehouse financing, and trade credit financing on performance outcomes such as productivity, efficiency, and profitability. A cross-sectional survey design was adopted, with data collected from 380 value chain actors using structured questionnaires. Data were analyzed using Partial Least Squares Structural Equation Modelling (PLS-SEM). The findings reveal that inventory/warehouse financing has the strongest positive and significant effect on value chain performance ($\beta = 0.653$, $p < 0.001$), followed by contract farming finance ($\beta = 0.202$, $p = 0.012$) and digital/fintech-enabled finance ($\beta = 0.130$, $p = 0.007$), while trade credit financing is not significant ($\beta = 0.039$, $p = 0.421$). The model explains 88% of the variance in value chain performance. The study concludes that embedded and coordinated financing mechanisms are critical for enhancing agricultural value chains. The study recommends investment in warehouse infrastructure and inventory financing systems to reduce post-harvest losses, strengthening contract farming arrangements to improve coordination and risk-sharing, expanding digital financial services in rural areas to enhance inclusion and transaction efficiency, and developing supportive regulatory frameworks to encourage adoption of innovative supply chain financing mechanisms.

Keywords: *Supply Chain Financing, Palm Oil, Value Chain Performance, Inventory Financing, Contract Farming*

1. INTRODUCTION

Agricultural value chains play a critical role in promoting economic growth, ensuring food security, and sustaining rural livelihoods across both developed and developing economies. In advanced countries, well-structured financing systems, efficient logistics, and strong institutional frameworks enable agribusiness sectors to achieve high productivity and global competitiveness (Abolade et al., 2025). In contrast, developing economies often face constraints such as weak financial systems, inadequate infrastructure, and fragmented supply chains, which limit agricultural productivity and reduce market competitiveness (Abolade et al., 2025; World Bank, 2024). These disparities underscore the importance of supply chain financing as a mechanism for improving value chain performance and unlocking the full potential of agricultural sectors.

In Nigeria, agriculture remains central to economic diversification, employment generation, and food production, yet it continues to be constrained by structural and financial challenges. Nigeria produced approximately 1.4 million metric tons of palm oil in 2023, which is significantly below the estimated domestic demand of about 3 million metric tons. This supply gap has resulted in import expenditures of over $600 million annually, despite the country's favorable agro-ecological conditions for oil palm production (Prime Business Africa, 2023; Nairametrics, 2025). This situation reflects inefficiencies within the palm oil value chain and highlights the need for improved financing mechanisms to support production and processing activities.

Supply chain financing (SCF) encompasses a range of financial solutions designed to facilitate the flow of capital among value chain actors, including farmers, processors, distributors, and marketers, thereby enhancing liquidity, reducing transaction risks, and enabling investment in productivity enhancing technologies (Hofmann & Kotzab, 2010; Moretto & Caniato, 2021). In agricultural systems, SCF includes instruments such as trade credit, contract farming arrangements, inventory

financing, and digital financial services, which contribute to improved coordination, efficiency, and market access (Akinwale et al., 2021; Yusuf & Salami, 2023). Recent innovations, including commodity-backed lending and digital platforms, have also demonstrated potential to improve loan disbursement and liquidity among farmers in Nigeria (AllAfrica.com, 2025; BusinessDay NG, 2025).

The performance of the palm oil value chain measured through indicators such as production efficiency, processing capacity, profitability, market access, and income stability is closely linked to the availability and effectiveness of financing. Limited access to finance restricts investment in improved seedlings, mechanized processing equipment, storage facilities, and logistics infrastructure, thereby constraining productivity and value addition (Obisesan & Akinlade, 2020; Ogundele et al., 2022). Conversely, well-structured financing mechanisms enable value chain actors to expand operations, adopt improved technologies, and integrate into broader markets, thereby improving overall performance and competitiveness (Abolade et al., 2025).

In rural areas such as Baissa in Taraba State, the palm oil value chain is dominated by smallholder farmers and small-scale processors who often rely on informal and insufficient sources of finance. These limitations hinder their ability to scale operations, improve efficiency, and achieve stable incomes. Nigeria's agribusiness financing environment continues to face persistent challenges, including limited long-term agricultural lending and structural weaknesses in financial markets that disproportionately affect rural sectors (World Bank, 2024).

Furthermore, existing empirical studies on agricultural finance in Nigeria largely focus on aggregate or national-level analyses, with limited attention to how specific supply chain financing mechanisms influence value chain performance at the community level. This creates a gap in understanding the localized impact of financing instruments such as trade credit, contract farming, inventory financing, and digital financial services on palm oil value chain outcomes.

Against this backdrop, this study investigates the effects of trade credit financing, contract farming finance, inventory/warehouse financing, and digital/fintech-enabled finance on palm oil value chain performance in Baissa, Taraba State. The study aims to provide empirical evidence that can inform policy formulation, financial innovation, and strategic interventions for enhancing productivity, competitiveness, and sustainability within the Nigerian palm oil sector.

Statement of Problem

Palm oil remains one of Nigeria's most economically strategic agricultural commodities, serving as a major source of income, employment, food security, and industrial raw materials. However, despite Nigeria's comparative advantage in palm oil production, the sector continues to underperform relative to its potential, largely due to inefficiencies across the value chain ranging from farm-level production to processing, storage, transportation, and marketing (Obisesan & Akinlade, 2020; Ogundele et al., 2022). In Baissa, Taraba State, where palm oil production represents a key livelihood activity, actors within the value chain face persistent challenges including low processing capacity, limited value addition, post-harvest losses, poor market integration, and unstable incomes.

A major underlying constraint is inadequate and poorly structured supply chain financing. Palm oil farmers, processors, and traders in Baissa often struggle to access formal financial services due to high collateral requirements, elevated interest rates, limited financial literacy, and the perception of agriculture as a high-risk sector by financial institutions (Akinwale et al., 2021; World Bank, 2024). Consequently, many rely on informal financing sources such as personal savings, money lenders, and trade credit arrangements, which are frequently insufficient, costly, and unsustainable. These financial limitations restrict investment in improved seedlings, mechanized processing equipment, storage facilities, and logistics systems, thereby weakening overall value chain performance (Obisesan & Akinlade, 2020).

From a practical and contextual perspective, insufficient supply chain financing has been linked to delayed harvesting, low extraction rates, inefficient processing methods, high production costs, weak bargaining power among smallholder actors, and reduced competitiveness of locally produced palm oil (Ogundele et al., 2022; Oyebode et al., 2024). These challenges contribute to lost revenue opportunities, constrained enterprise growth, and reduced economic resilience within palm oil-producing communities in Baissa. Despite ongoing government and donor-led agricultural finance initiatives, their effectiveness in strengthening palm oil value chain performance at the local level remains uncertain due to weak alignment with supply chain realities (World Bank, 2024).

From a theoretical standpoint, Supply Chain Finance Theory emphasizes the role of coordinated financial flows in enhancing operational efficiency, reducing risk, and improving value creation across interconnected actors (Pfohl & Gomm, 2009; Hofmann, 2005). However, much of the existing theoretical and empirical literature is based on manufacturing systems, export-oriented agribusinesses, or large-scale commercial farming, with limited application to smallholder-dominated rural value chains in sub-Saharan Africa (Gelsomino et al., 2016). This raises concerns about the contextual validity and explanatory power of existing models in explaining financing-performance dynamics in informal and fragmented agricultural systems such as those found in Baissa.

Empirically, while prior studies have examined agricultural credit and rural finance in Nigeria, there remains a notable gap in localized, data-driven evidence on how specific supply chain financing mechanisms influence palm oil value chain performance at the community level (Abolade et al., 2025; Chinwuba et al., 2019). Existing research often adopts broad national or regional perspectives, fails to disaggregate financing types across value chain actors, or does not adequately link financing access to measurable performance outcomes such as productivity, processing efficiency, profitability, market access, and value addition. This empirical limitation

constrains evidence-based policymaking and limits the ability of financial institutions and development agencies to design targeted financing solutions tailored to palm oil value chain stakeholders.

In the light of these practical constraints, contextual realities, theoretical gaps, and empirical deficiencies, there is a compelling need for a systematic investigation into the effects of supply chain financing on palm oil value chain performance in Baissa, Taraba State. Addressing this problem will contribute to improved understanding of financing-performance linkages, support the development of context-specific financial models, and provide actionable insights for enhancing the productivity, competitiveness, and sustainability of the palm oil sector in the study area.

The main objective of this study is to assess the effect of supply chain financing on palm oil value chain performance. Specifically, the study will examine the effect of trade credit financing, contract financing, inventory/warehouse financing and digital/fintech-enabled finance on palm oil value chain performance.

Research Hypotheses

H_{01}: Trade credit financing (TCF) has no significant effect on palm oil value chain performance.

H_{02}: Contract farming finance (CFF) has no significant effect on palm oil value chain performance.

H_{03}: Inventory/warehouse financing (IWF) has no significant effect on palm oil value chain performance.

H_{04}: Digital/fintech-enabled finance (DFF) has no significant effect on palm oil value chain performance.

2. LITERATURE REVIEW

2.1 Conceptual Review

Supply Chain Financing (SCF)

Supply Chain Financing (SCF) refers to financial mechanisms designed to optimize cash flows, improve liquidity, and reduce working capital constraints across interconnected actors in a value chain (Hofmann, 2005; Gelsomino et al., 2016). In agricultural contexts, SCF addresses chronic credit constraints faced by smallholder farmers and agri-SMEs, enabling access to inputs, mechanized processing, and storage infrastructure, thereby improving productivity and value addition (Ayyagari, Demirgüç-Kunt, & Maksimovic, 2017). Fintech-enabled SCF further reduces transaction costs, mitigates information asymmetry, and enhances financial inclusion (Wan & Cui, 2024). In the palm oil value chain, SCF facilitates operational efficiency, strengthens coordination among producers, processors, and marketers, and supports sustainable rural agribusiness development (Adwiyah et al., 2023).

Trade Credit Financing

Trade credit financing involves short-term arrangements where suppliers provide goods or inputs immediately and allow buyers to defer payment (Wang et al., 2024; Bichi et al., 2025). In agriculture, it enables smallholders and processors to sustain operations without relying solely on formal bank loans, thereby smoothing procurement cycles and mitigating liquidity constraints (Denashurya & Azizu, 2025; Gyimah, 2025). Trade credit fosters inter-firm trust and continuity of production but remains underutilized in rural contexts due to institutional limitations (Bichi et al., 2025).

Contract Farming Finance

Contract farming finance is a formal agreement between farmers and agribusiness firms or processors, providing inputs, technical assistance, and pre-agreed financial support

in exchange for guaranteed produce delivery (Denashurya & Azizu, 2025; Wang et al., 2024). This arrangement reduces production and market risks, promotes adoption of improved technologies, ensures stable cash flows, and strengthens market access (Gyimah, 2025; Bichi et al., 2025). In developing countries, contract farming has been shown to enhance productivity, income stability, and overall value chain performance.

Inventory/Warehouse Financing

Inventory or warehouse financing involves using stored agricultural produce as collateral to obtain short-term credit (Moretto & Caniato, 2021; Denashurya & Azizu, 2025). It allows value chain actors to manage cash flow, reduce post-harvest losses, and stabilize supply while leveraging inventory to secure loans (Gyimah, 2025; Wang et al., 2024). While effective in grain and cocoa sectors, evidence in palm oil production in Nigeria remains limited, with operational inefficiencies affecting its impact on production efficiency and profitability.

Digital/Fintech-Enabled Finance

Digital or fintech-enabled finance leverages mobile money, digital wallets, online lending, and blockchain platforms to facilitate financial inclusion, credit access, and real-time monitoring of transactions (Denashurya & Azizu, 2025; Yusuf & Salami, 2023). In agriculture, fintech solutions lower transaction costs, improve transparency, and enable timely input financing. However, adoption in rural contexts is constrained by infrastructure gaps, low digital literacy, and platform accessibility (Ozili, 2022; Wan & Cui, 2024).

Palm Oil Value Chain Performance

Value chain performance encompasses efficiency, productivity, profitability, market access, and income stability of actors involved in production, processing, and distribution (Kaplinsky & Morris, 2020; Nadvi, 2021). High-performing chains reduce

post-harvest losses, optimize resource utilization, and enhance competitiveness. SCF mechanisms directly influence these outcomes by improving liquidity, enabling investment, and facilitating coordination across the chain (Adewale & Ojo, 2020; Ogundele et al., 2022).

2.2 Theoretical Review

This study is grounded in four complementary theoretical perspectives that collectively explain how supply chain financing (SCF) influences palm oil value chain performance in Baissa, Taraba State.

The Resource-Based View (RBV), as propounded by Barney (1991), provides a foundational lens for understanding how access to strategic resources enhances firm performance. RBV posits that organizations achieve sustained competitive advantage when they possess resources that are valuable, rare, inimitable, and non-substitutable. In the context of this study, supply chain financing represents a critical strategic resource that enables value chain actors particularly farmers, processors, and marketers to invest in improved production technologies, storage facilities, and processing equipment. Such investments enhance productivity, reduce inefficiencies, and ultimately improve competitiveness within the palm oil value chain. Thus, access to financing is not merely a financial tool but a capability that strengthens operational performance.

Complementing this perspective is the Transaction Cost Economics (TCE) theory developed by Williamson (1985), which emphasizes the role of governance structures in minimizing transaction costs associated with economic exchanges. TCE explains that uncertainties, opportunistic behavior, and information asymmetry often increase the cost of transactions, particularly in fragmented and informal markets such as rural agricultural systems. Supply chain financing mechanisms especially contract farming and trade credit help mitigate these challenges by formalizing relationships,

improving trust, and enhancing contractual compliance among value chain actors. As a result, coordination improves, risks are reduced, and operational efficiency is enhanced.

The study also draws on Value Chain Theory, introduced by Porter (1985), which focuses on how value is created and enhanced across different stages of production, processing, and distribution. According to this theory, upgrading activities within the value chain such as improving processing quality, adopting better logistics systems, and expanding market access leads to increased value addition and competitive advantage. Supply chain financing plays a critical role in enabling these upgrades by providing the necessary financial resources for investment in innovation, infrastructure, and market expansion. In the palm oil sector, such improvements are essential for enhancing product quality, reducing post-harvest losses, and increasing profitability.

Furthermore, the study is anchored on Supply Chain Finance Theory, as articulated by Pfohl and Gomm (2009), which provides a direct and integrated explanation of how financial flows can be embedded within supply chain relationships. This theory emphasizes that financing should not be treated as a standalone activity but rather as an integral component of supply chain management. Coordinated financial instruments such as inventory financing, receivables discounting, and digital/fintech-enabled lending help reduce working capital constraints, stabilize cash flows, and enhance collaboration among supply chain actors. In agricultural contexts, particularly in developing economies, this approach is critical for addressing liquidity challenges and improving overall value chain performance.

Among these theoretical perspectives, Supply Chain Finance Theory (Pfohl & Gomm, 2009) is the most relevant to this study. This is because it directly explains the central phenomenon under investigation the relationship between supply chain financing mechanisms and value chain performance. Unlike RBV, TCE, and Value Chain Theory, which provide broader conceptual insights, Supply Chain Finance Theory specifically focuses on the integration of financial solutions within supply chain processes. It offers

a clear framework for understanding how mechanisms such as inventory/warehouse financing, contract farming finance, and digital finance influence liquidity, coordination, and efficiency across the value chain.

The relevance of this theory is further reinforced by the empirical findings of the study, which show that inventory/warehouse financing has the strongest impact on value chain performance, followed by contract farming and digital finance. These results align closely with the propositions of Supply Chain Finance Theory, which emphasizes the role of structured and coordinated financing instruments in enhancing supply chain outcomes. Therefore, while all four theories provide valuable insights, Supply Chain Finance Theory serves as the primary theoretical foundation for explaining the observed relationships in this study.

2.3 Empirical Review

Empirical studies consistently show that SCF improves agribusiness performance. In Nigeria, Ojo and Ayanwale (2019) reported that structured financing enhanced productivity and income among agricultural producers. Chinwuba, Davina, and Lucky (2019) confirmed that value chain finance increased processing capacity and efficiency among palm oil processors in Delta State. Oyebode, Oyesola, and Fadairo (2024) found that limited finance caused production delays and inefficiencies, while Abolade, Lawal, Akanbi, and Salami (2025) demonstrated a strong positive relationship between financial access and overall agribusiness productivity.

Internationally, Nartey (2023) showed that SCF adoption among SMEs in Ghana improved competitiveness and operational efficiency, while Aliamutu and Mkhize (2024) found that value chain financing enhanced profitability, reduced working capital constraints, and strengthened supplier relationships in South Africa's edible oil sector. Cooperative game-theory-based studies indicate that profit-sharing and coordinated financial contracts improve fairness, collaboration, and value chain efficiency (Bekolli, Guardiola, & Meca, 2023).

Despite these positive outcomes, context-specific gaps remain. Digital/fintech-enabled finance and warehouse financing remain underexplored in rural African contexts, with adoption limited by low digital literacy, infrastructural constraints, and operational inefficiencies (Wan & Cui, 2024; Ozili, 2022). Macro-level evidence suggests that well-structured financial mechanisms stabilize supply chains, while excessive financialization can increase volatility and disrupt commodity markets (Manogna & Kulkarni, 2025).

In summary, empirical evidence indicates that SCF particularly contract farming and trade credit significantly enhances palm oil value chain performance, while warehouse and fintech enabled financing have emerging potential that requires context-specific adaptation in rural Nigeria. These findings justify the focus of the present study on evaluating SCF mechanisms within Baissa, Taraba State.

3. METHODOLOGY

This study adopts a cross-sectional survey design to examine the relationship between supply chain financing mechanisms and palm oil value chain performance in Baissa, Taraba State. The target population comprises key actors in the palm oil value chain, including farmers, processors, and marketers. A sample size of 140 respondents was determined using appropriate sampling techniques, and stratified random sampling was employed to ensure adequate representation across the different actor groups.

Primary data were collected using a structured questionnaire designed on a five-point Likert scale, ranging from strongly disagree to strongly agree. The questionnaire items were adapted from validated instruments in existing literature to ensure content validity. Data analysis was conducted using Partial Least Squares Structural Equation Modelling (PLS-SEM), which is suitable for predictive analysis and complex models involving multiple constructs (Hair et al., 2022).

Reliability and validity of the measurement model were assessed using Cronbach's alpha, composite reliability, and average variance extracted (AVE). Discriminant validity was evaluated using the Heterotrait-Monotrait (HTMT) ratio, while multicollinearity was assessed using Variance Inflation Factor (VIF) values. Structural model evaluation involved examining path coefficients, coefficient of determination (R^2), effect size (f^2), and model fit indices such as SRMR.

4. RESULTS

Measurement Model Assessment

Table 1: Reliability and Convergent Validity of Constructs

Construct	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Contract farming finance	0.769	0.85	0.787	0.588
Digital/fintech-enabled finance	0.857	0.867	0.904	0.703
Inventory/warehouse financing	0.914	0.921	0.936	0.746
Trade credit financing	0.791	0.755	0.777	0.586
Value chain performance	0.894	0.898	0.927	0.76

Interpretation:

Table 1 shows that all constructs demonstrate acceptable internal consistency and convergent validity. Cronbach's alpha values exceed the recommended threshold of 0.70, while composite reliability values are above 0.77. AVE values for all constructs are above 0.50, confirming adequate convergent validity.

Table 2: Discriminant Validity (HTMT Criterion)

Construct	**CFF**	**DFF**	**IWF**	**TCF**	**VCP**
Contract farming finance	-	-	-	-	-
Digital/fintech-enabled finance	0.642	-	-	-	-
Inventory/warehouse financing	0.722	0.846	-	-	-
Trade credit financing	0.569	0.579	0.422	-	-
Value chain performance	0.686	0.659	0.019	0.405	-

Interpretation:

Table 2 indicates that discriminant validity is established. All HTMT values are below the threshold of 0.90, demonstrating that constructs are distinct and measure different aspects of supply chain financing and value chain performance.

Figure 1: The measurement model showing factor loadings for all constructs presented

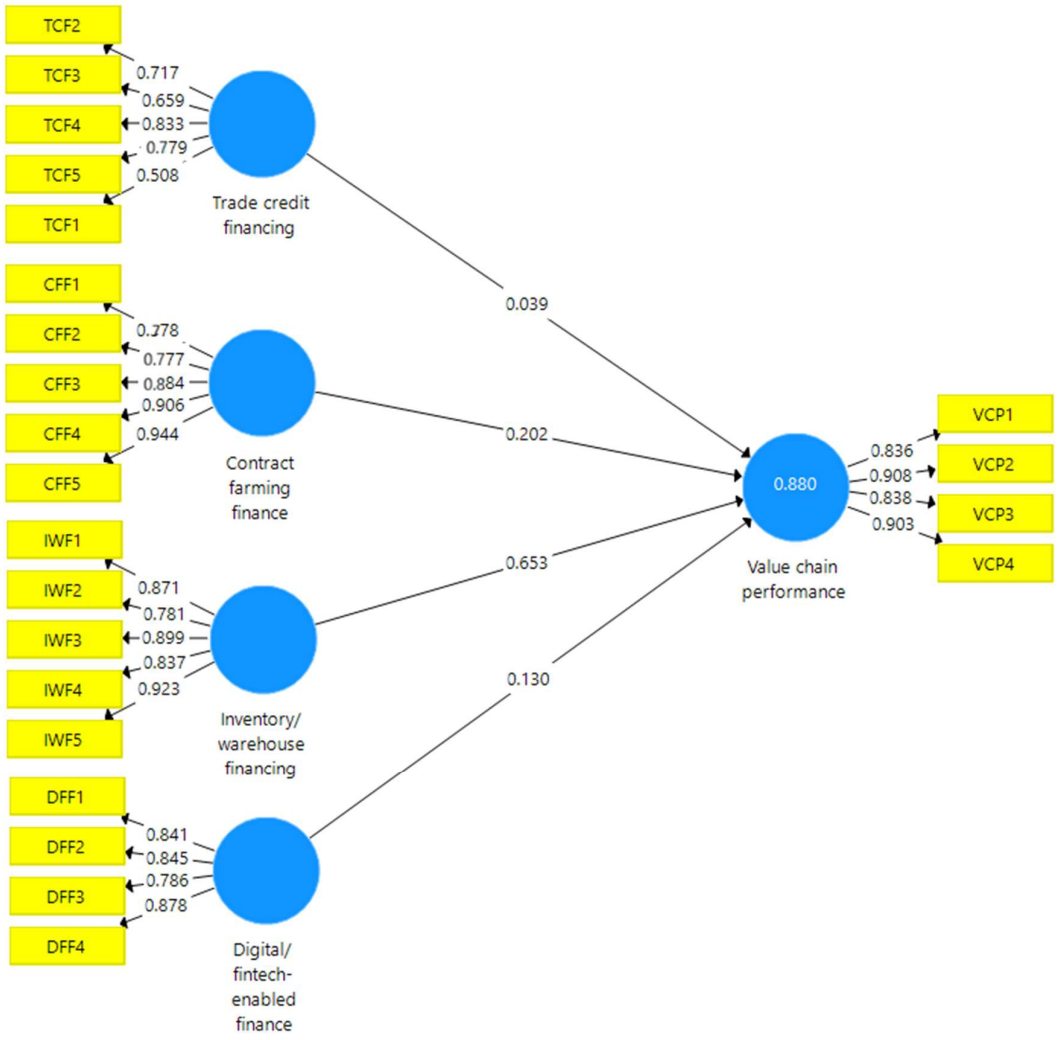


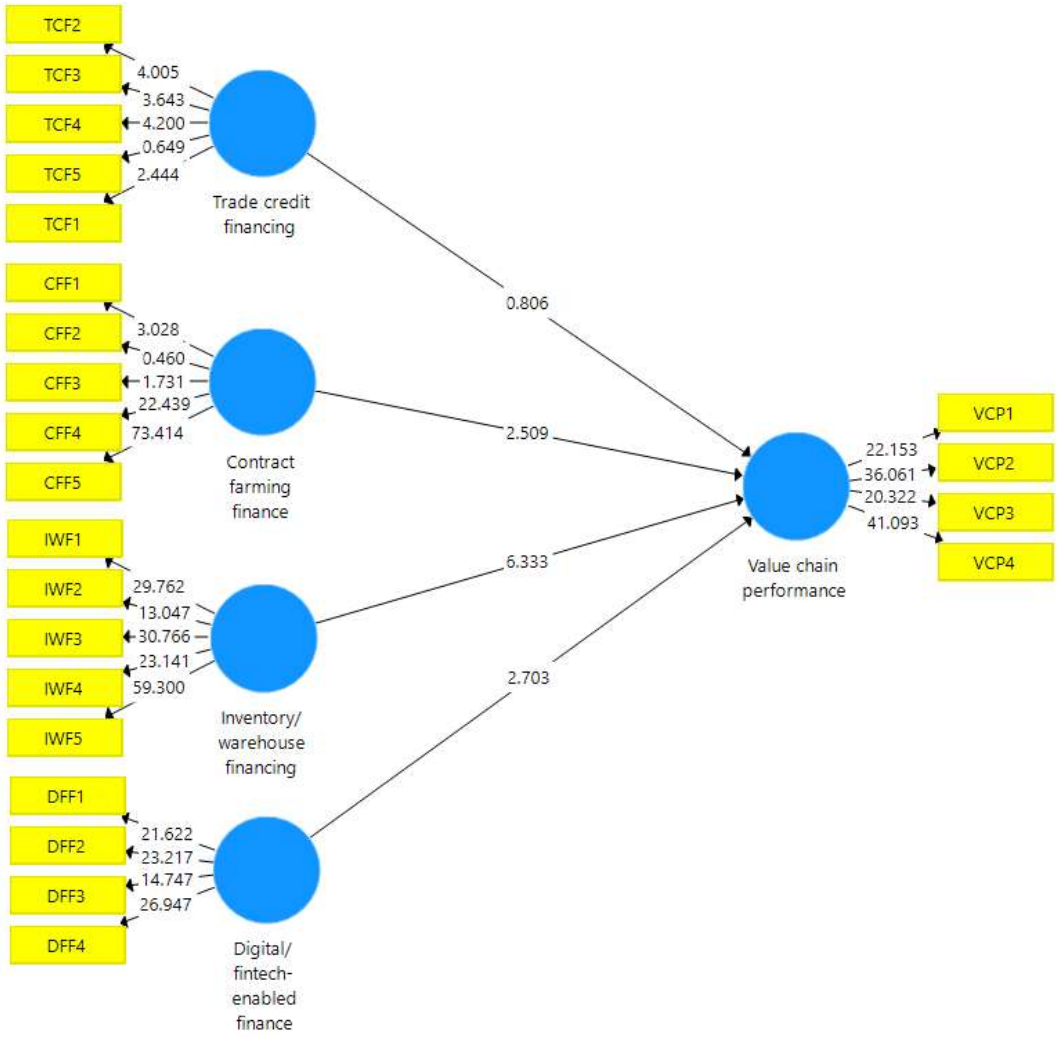
Table 3: Collinearity Diagnostics

Construct	VIF
Contract farming finance	2.719
Digital/fintech-enabled finance	2.548
Inventory/warehouse financing	2.164
Trade credit financing	1.337
Value chain performance	-

Interpretation:

Table 3 reveals no multicollinearity issues among predictors, as all VIF values are below 5. This indicates that each financing mechanism contributes independently to explaining value chain performance.

Figure 2: The structural model illustrating the hypothesized relationships and path coefficients among constructs



Structural Model Assessment

Table 4: Path Coefficients

Predictor	β (Path Coefficient)	t-value	p-value
Contract farming finance → Value chain performance	0.202	2.509	0.012
Digital/fintech-enabled finance → Value chain performance	0.130	2.703	0.007
Inventory/warehouse financing → Value chain performance	0.653	6.333	<0.001
Trade credit financing → Value chain performance	0.039	0.806	0.421

Interpretation:

Table 4 shows that inventory/warehouse financing has the strongest significant positive effect on value chain performance, followed by contract farming finance and digital/fintech-enabled finance. Trade credit financing does not significantly influence performance.

Table 5: Coefficient of Determination (R^2)

Dependent Variable	**R^2**	**Adjusted R^2**
Value chain performance	0.88	0.874

Interpretation:

Table 5 indicates that 88% of the variance in value chain performance is explained by the four supply chain financing mechanisms. This high explanatory power suggests a robust structural model.

Table 6: Effect Size (f^2)

Predictor	**f^2**
Contract farming finance	0.125
Digital/fintech-enabled finance	0.055
Inventory/warehouse financing	0.85
Trade credit financing	0.041

Interpretation:

Table 6 reveals that inventory/warehouse financing has a large effect size on value chain performance, contract farming finance has a moderate effect, while digital/fintech-enabled finance and trade credit financing have small effect sizes.

Table 7: Model Fit Indices

Fit Index	Saturated Model	Estimated Model
SRMR	0.035	0.035
d_ULS	5.007	5.007
d_G	3.625	3.625
Chi-Square	1373.559	1373.559
NFI	0.478	0.478

Interpretation:

Table 7 confirms that the structural model demonstrates good fit. The SRMR value (0.035) is below the threshold of 0.08, supporting model adequacy.

Discussion of Findings

The findings of this study highlight the critical role of supply chain financing in enhancing palm oil value chain performance in Baissa, Taraba State. Inventory/warehouse financing emerges as the most significant predictor, underscoring

the importance of storage infrastructure and asset-backed financing in reducing post-harvest losses and improving market timing. This finding aligns with prior studies that emphasize the role of inventory financing in stabilizing agricultural markets and enhancing profitability (Chen et al., 2021; Liu et al., 2022).

Contract farming finance also demonstrates a significant positive effect, suggesting that structured agreements between farmers and buyers enhance access to inputs, technical support, and guaranteed markets. This supports the transaction cost economics theory, which posits that contractual arrangements reduce uncertainty and improve efficiency (Williamson, 1985).

Digital/fintech-enabled finance shows a positive and significant impact, reflecting the growing importance of digital financial services in improving financial inclusion and transaction efficiency in rural areas. This finding is consistent with recent studies that highlight the transformative potential of fintech in agricultural value chains (Aker & Mbiti, 2010; Ozili, 2023).

In contrast, trade credit financing does not significantly influence value chain performance, suggesting that informal and short-term credit arrangements may be insufficient to drive meaningful improvements in productivity and efficiency. This may be due to the limited scale and high uncertainty associated with such financing mechanisms in rural contexts.

5. CONCLUSION

This study concludes that supply chain financing plays a significant role in enhancing palm oil value chain performance in Baissa, Taraba State. Among the financing mechanisms examined, inventory/warehouse financing has the strongest impact, followed by contract farming finance and digital/fintech-enabled finance. Trade credit financing, however, does not significantly influence performance outcomes.

The high explanatory power of the model indicates that targeted financial interventions can substantially improve agricultural value chains. Therefore, policymakers and stakeholders should prioritize structured and scalable financing solutions to enhance productivity, efficiency, and sustainability in the palm oil sector.

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

- **Investment in Warehouse Infrastructure:** Government agencies and private sector stakeholders should prioritize investment in modern warehouse facilities and promote inventory/warehouse financing systems to enhance storage capacity and significantly reduce post-harvest losses.
- **Strengthening Contract Farming Arrangements:** There is a need to reinforce contract farming frameworks to improve coordination, ensure market stability, and enhance risk-sharing among farmers, processors, and marketers within the palm oil value chain.
- **Expansion of Digital Financial Services:** Stakeholders should promote and expand digital/fintech-enabled financial services in rural areas to improve financial inclusion, facilitate access to credit, and enhance transaction efficiency.
- **Supportive Policy and Regulatory Frameworks:** Policymakers should develop and implement enabling policies and regulatory frameworks that encourage the adoption and scalability of innovative supply chain financing mechanisms across the agricultural sector.

This study contributes to the existing literature by providing localized empirical evidence on the impact of supply chain financing mechanisms on agricultural value chain performance in rural Nigeria. It extends the application of supply chain finance theory within the context of palm oil production and offers practical insights for policymakers, development practitioners, and agribusiness stakeholders.

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