

Original Research Article

Strategic Innovation and Financial Resilience of Agro Firms in Lagos State, Nigeria

Mobolaji Johnson^{1*}, Prof. Omiete, V. Olulu-Briggs¹, Georgewill, Tekenar (PhD)¹
¹University of Port Harcourt Business School, Port Harcourt, Rivers State

DOI: <https://doi.org/10.36348/sjbms.2026.v11i07.003>

| Received: 25.05.2026 | Accepted: 18.07.2026 | Published: 21.07.2026

*Corresponding author: Mobolaji Johnson

University of Port Harcourt Business School, Port Harcourt, Rivers State

Abstract

This study investigated the role of strategic innovation in enhancing the financial resilience of agro firms in Lagos State, Nigeria. The research adopts a structured questionnaire distributed to 345 firms, with 311 valid responses obtained (90% return rate), the research examined three dimensions of innovation—product, process, and business model—and their collective impact on resilience. Descriptive statistics and Pearson correlation analyses were employed to test four hypotheses. Findings revealed that all three innovation dimensions were positively and significantly correlated with financial resilience. Product innovation ($r = 0.53$, $p < 0.01$) contributed through diversification and responsiveness to consumer preferences, though export diversification showed weaker effects. Process innovation ($r = 0.57$, $p < 0.01$) emerged as the strongest driver, with efficiency improvements and logistics optimization reducing losses and strengthening resilience. Business model innovation ($r = 0.49$, $p < 0.01$) also played a meaningful role, particularly through digital platforms and cooperative financing, though subscription farming showed limited adoption. Importantly, the combined innovation index ($r = 0.62$, $p < 0.01$) demonstrated that integrated innovation strategies yield the highest resilience outcomes, outperforming isolated efforts. Also, the regression result of $R^2 = 0.789$ indicate that strategic innovations collectively explains nearly 80% of financial resilience of agro firms in Lagos State Nigeria. The study concludes that strategic innovation is a critical pathway to financial resilience in volatile agro markets. Based on the conclusion, it was recommended among others that Agro firms strengthen process innovation through efficiency technologies and logistics systems; enhance product innovation by diversifying into value-added goods and adapting to consumer preferences.

Keywords: Strategic innovation, product innovation, process innovation, business model innovation, strategic alliance.

Copyright © 2026 The Author(s): This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY-NC 4.0) which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use provided the original author and source are credited.

INTRODUCTION

Agriculture has long been recognized as the backbone of Nigeria's economy, contributing substantially to employment, food security, and gross domestic product. Even in Lagos State, which is often perceived as the country's commercial and urban hub, agro firms remain vital to sustaining the food supply chain and supporting livelihoods. Yet, these firms operate in an environment marked by volatility, uncertainty, and structural challenges. Issues such as climate variability, infrastructural deficits, fluctuating commodity prices, and limited access to finance continually test their ability to survive and grow. In this context, the concept of financial resilience—the ability of firms to withstand shocks, adapt to disruptions, and

sustain operations—has become increasingly important (Hartwich *et al.*, 2010; Ragasa *et al.*, 2010).

Financial resilience is not merely about survival; it is about positioning firms to thrive despite adversity. For agro firms in Lagos, resilience requires more than traditional risk management. It demands strategic innovations that enable firms to diversify products, optimize processes, and restructure business models. Innovation, in this sense, is not a luxury but a necessity. It provides the tools for firms to remain competitive in volatile markets and to adapt to the rapidly changing socio-economic landscape of Lagos State (Central Bank of Nigeria, 2020).

Strategic innovation refers to deliberate, transformative changes in products, processes, and business models that enhance competitiveness and sustainability. For agro firms in Lagos, three dimensions are particularly relevant: product innovation, process innovation, and business model innovation.

While theoretical discussions on innovation abound, empirical evidence is needed to understand how these innovations translate into financial resilience in Lagos agro firms. Previous studies have emphasized the importance of value chain financing (Hartwich *et al.*, 2010) and innovation capacity in agricultural research organizations (Ragasa *et al.*, 2010). However, few studies have directly examined the interplay between strategic innovations and financial resilience at the firm level in Lagos State, without showing how each dimension of strategic innovation influence financial resilience in the agro industry. This study fills this gap by empirically investigating the relationship between product, process, and business model innovations and financial resilience among agro firms in Lagos. It contributes to both academic literature and practical policymaking by identifying which innovation strategies most effectively enhance resilience.

Statement of the Problem

Agro firms in Lagos State operate within a highly dynamic and challenging environment. Despite being situated in Nigeria's most urbanized and economically vibrant state, these firms face persistent structural and financial constraints. The sector is characterized by climate variability, recurrent flooding, and unpredictable rainfall patterns that disrupt production cycles. In addition, infrastructural deficits—such as inadequate storage facilities, poor transportation networks, and unreliable electricity supply—exacerbate post-harvest losses and reduce profitability. These challenges are compounded by price volatility in agricultural commodities, which exposes firms to unstable revenue streams and financial uncertainty.

Government interventions, such as the Central Bank of Nigeria's agricultural financing schemes and the Nigeria Incentive-Based Risk Sharing System for Agricultural Lending (NIRSAL), have sought to improve access to credit and mitigate risks. However, many agro firms in Lagos still struggle to secure affordable financing, largely due to stringent collateral requirements and limited financial literacy among small and medium-scale operators. As a result, firms remain vulnerable to shocks, with many unable to sustain liquidity or recover quickly from disruptions. This persistent fragility underscores the need for financial resilience—the capacity of firms to absorb shocks, adapt to changing conditions, and sustain operations in the long term.

While resilience is critical, it cannot be achieved through traditional practices alone. The rapidly changing

socio-economic landscape of Lagos demands strategic innovations that enable firms to remain competitive and financially stable. Product innovation offers opportunities for diversification into value-added goods, reducing reliance on single commodities and stabilizing income streams. Process innovation allows firms to adopt modern technologies and efficient systems that lower costs and improve productivity. Business model innovation provides new pathways for accessing markets and financing, such as digital platforms, cooperative structures, and public-private partnerships.

Despite the recognized importance of innovation, there is limited empirical evidence on how these three dimensions—product, process, and business model innovations—collectively influence financial resilience among agro firms in Lagos. Existing studies have examined innovation in Nigerian agriculture broadly, focusing on research institutions, value chains, or national-level financing mechanisms. However, few have investigated the firm-level dynamics of innovation adoption and its direct impact on financial resilience in Lagos State's agro sector. This gap in knowledge is significant, given Lagos's unique context as both a commercial hub and a critical food supply center.

The absence of empirical studies leaves policymakers, practitioners, and agro entrepreneurs without clear evidence on which innovation strategies most effectively enhance resilience. Consequently, interventions may be misaligned, and firms may continue to rely on ad hoc coping mechanisms rather than systematic innovation-driven approaches. Addressing this gap is essential for strengthening the agro sector's contribution to food security, employment, and economic growth in Lagos State and Nigeria at large.

Therefore, the problem this study seeks to address is the lack of empirical understanding of how strategic innovations—specifically product, process, and business model innovations—affect the financial resilience of agro firms in Lagos State, Nigeria. Without such evidence, firms remain vulnerable to shocks, and policymakers lack the insights needed to design targeted interventions that foster sustainable resilience in the sector.

Objectives of the Study

The study is guided by the following objectives:

1. To examine the relationship between product innovation and financial resilience of agro firms in Lagos.
2. To assess the relationship between process innovation and enhancing efficiency and resilience.
3. To evaluate the relationship between business model innovation and financial sustainability.
4. To determine the combined effect of strategic innovations on financial resilience.

Research Hypotheses

H01: There is no significant relationship between product innovation and strategic resilience in Agro Industry of Lagos State.

H02: There is no significant relationship between process innovation and strategic resilience in Agro Industry of Lagos State.

H03: There is no significant relationship between business model innovation and strategic resilience in Agro Industry of Lagos State.

H04: The combined effect of product, process, and business model innovations does not significantly predict financial resilience among agro firms in Lagos State.

Theoretical Framework

The Resource-Based View (RBV) stands as one of the most influential theories in strategic management and provides a strong conceptual foundation for understanding how innovation drives financial resilience in agro firms. Its intellectual roots can be traced to Edith Penrose's *The Theory of the Growth of the Firm* (1959), where she argued that firms are essentially bundles of productive resources and their growth depends on how effectively these resources are deployed and reconfigured (Penrose, 1959). Building on this, Birger Wernerfelt (1984) formally articulated the RBV in his seminal article "A Resource-Based View of the Firm," emphasizing that firms should be analyzed in terms of their resource positions rather than industry structures, and that unique resources are central to sustained performance (Wernerfelt, 1984).

The theory was further refined by Jay Barney (1991), who defined firm resources as "all assets, capabilities, organizational processes, firm attributes, information, and knowledge controlled by a firm" that enable strategy implementation. He introduced the VRIN/VRIO framework, asserting that resources must be valuable, rare, inimitable, and non-substitutable or organized to generate sustainable competitive advantage (Barney, 1991). Prahalad and Hamel (1990) expanded this perspective by introducing the concept of core competencies, highlighting that collective learning and coordination of diverse skills underpin innovation and long-term resilience. Later, Teece, Pisano, and Shuen (1997) extended RBV into the dynamic capabilities perspective, stressing the importance of reconfiguring resources to adapt to rapidly changing environments.

In the context of agro firms in Lagos State, RBV explains why innovation functions as a strategic resource base. Product innovation, such as new products, value-added goods, and responsiveness to consumer preferences, represents valuable and rare capabilities that differentiate firms in competitive markets. Process innovation, including efficiency improvements, logistics optimization, and digital monitoring, embodies inimitable operational strengths that reduce losses and enhance resilience. Business model innovation, through

digital platforms, cooperative financing, and partnerships, reflects organizational processes that are difficult to replicate, expanding market access and financial stability.

Conceptual Review

Concept of Strategic Innovation

Strategic innovation has been conceptualized in multiple ways across recent scholarship, reflecting its multidimensional character and its role in shaping organizational resilience. Govindarajan and Trimble (2015) describe it as the ability of firms to redefine market boundaries by creating new value propositions that challenge industry norms and reshape competitive landscapes. This view emphasizes innovation as a disruptive force that alters consumer expectations and industry dynamics. Markides (2015) extends this idea by presenting strategic innovation as a process of organizational renewal, where firms adopt new strategies, structures, and practices to remain relevant in changing environments.

Chen and Miller (2016) frame strategic innovation as the systematic pursuit of novel ideas and practices that generate superior value for customers and stakeholders, underscoring its link to sustainable competitive advantage. Liu et al. (2017) highlight its integrative capability, suggesting that strategic innovation combines product, process, and business model innovations to achieve holistic transformation. This perspective is particularly relevant for agro firms, where resilience depends on multiple dimensions of innovation working together.

Teece (2018) emphasizes dynamic adaptation, defining strategic innovation as a firm's ability to respond to external shocks through creative problem-solving and resource reconfiguration. Casadesus-Masanell and Zhu (2019) focus on business model transformation, conceptualizing strategic innovation as the reconfiguration of business models to capture new sources of value, often through digital platforms, partnerships, and novel financing structures. Adams et al. (2020) add a sustainability dimension, defining strategic innovation as the integration of environmental and social principles into firm strategies to ensure long-term viability.

Most recently, Adegbite and Akinwale (2023) describe strategic innovation as a resilience enabler, where firms leverage product, process, and business model innovations to withstand financial shocks and sustain growth. This definition directly links innovation to financial resilience, making it highly relevant to agro firms in Lagos State.

These definitions above illustrate that strategic innovation is not a singular concept but a multifaceted construct encompassing market redefinition, organizational renewal, value creation, integrative

capability, dynamic adaptation, business model transformation, sustainability, and resilience. For agro firms in Lagos, these perspectives converge to highlight innovation as both a competitive necessity and a survival strategy in turbulent environments.

Product Innovation

Product innovation is categorized as new products for the world, new product lines, additions to existing new product lines, improvements and revisions to existing products, re-determination, and cost reduction (Djodjobo, 2020). Lukas and Ferrell in Djodjobo (2020) explains the existence of several indicators of product innovation, namely: product expansion (line extensions), product impersonation (me-too products), and new products (new-to-the-world products). New products are products that are considered new both by the business and by the company. Based on this explanation, this study set the dimensions of product innovation as new products, product development, product design, and product variance. Hidayat and Yuliana (2018) uses the dimension of product innovation to include: product quality, product variants, product styles, and product designs developed by the researcher to be adapted to the characteristics of his research.

Product innovation involves developing new or improved agricultural products to meet evolving consumer preferences. In Lagos, where urban consumers increasingly demand convenience, nutrition, and quality, agro firms are diversifying into value-added products such as packaged cassava flour, organic vegetables, and ready-to-cook seafood. This diversification reduces reliance on single commodities and stabilizes revenue streams against market shocks (Central Bank of Nigeria, 2020). Moreover, product innovation aligns with global trends in agribusiness, where firms are expected to respond to health-conscious consumers and sustainability concerns (Adegbite *et al.*, 2019).

Process Innovation

Process innovation is the implementation of a production method, or significant changes in specific techniques, equipment and / or software, in order to reduce production and distribution costs, improve the quality, production or distribution of new or improved products, to increase the efficiency or flexibility of a productive activity or supply activity and to reduce the risks to the environment (Maier, 2015).

Process innovation entails adopting new technologies or systems to improve efficiency. Examples include precision irrigation, greenhouse farming, and digital logistics platforms that minimize post-harvest losses. By lowering operational costs and improving yields, process innovation strengthens firms' ability to withstand financial pressures. In Lagos, where infrastructural bottlenecks often lead to high transaction costs, process innovation is particularly critical. It enables firms to reduce waste, improve margins, and

enhance competitiveness in volatile markets (Ragasa *et al.*, 2010; Olaniyi & Adeoye, 2016). By implementing the process innovation strategy in businesses, the corporate profits will increase as the costs of business decrease. A price drop will make customers more likely to buy this commodity as similar products have a higher price; in this case, it will lead both to increase the company's profits and to bring a greater market share for the business, and finally, will improve the business performance (Klingenberg *et al.*, 2013).

Business Model Innovation

Business model innovation involves rethinking how firms create, deliver, and capture value. In Lagos, agro firms are increasingly leveraging mobile apps for direct farmer-to-consumer sales, cooperative financing models, and partnerships with government agencies. These innovations expand revenue channels, improve liquidity, and enhance long-term sustainability. Business model innovation is especially relevant in contexts where traditional financing mechanisms are inadequate. By adopting cooperative structures and digital platforms, firms can access new markets and financing opportunities, thereby strengthening resilience (Hartwich *et al.*, 2010; Akinwale, 2018).

Financial Resilience

Financial resilience has been increasingly studied in recent years, with scholars offering diverse definitions that highlight its multidimensional nature. Hall and Lamont (2015) describe financial resilience as the capacity to absorb shocks and maintain stability in the face of external disruptions, emphasizing its role as a stabilizing force in uncertain markets. Martin and Sunley (2016) extend this by defining it as adaptive financial capacity, where firms adjust their structures and strategies to cope with changing conditions, underscoring resilience as a dynamic process rather than a static state.

Chen, Miller, and Zhang (2017) conceptualize financial resilience as the integration of financial flexibility and strategic foresight, pointing to liquidity management and proactive planning as essential components. Brune and McIntosh (2019) focus on recovery, defining resilience as the ability to recover quickly from financial shocks, particularly in developing economies where systemic risks are prevalent.

Adams and Jeanrenaud (2020) add a sustainability dimension, viewing financial resilience as the alignment of financial strategies with sustainable practices, ensuring firms can withstand shocks while meeting environmental and social obligations. Adegbite and Akinwale (2021) emphasize innovation, defining resilience as the capacity of firms to sustain operations through innovation-driven financial strategies, such as product diversification and cooperative financing.

Awokunle (2023) highlights the institutional aspect, defining financial resilience as the ability to leverage institutional support systems, including risk-sharing facilities and government interventions, to mitigate vulnerability. Most recently, Abdulkarim, Bello, and Yusuf (2025) conceptualize financial resilience as the synergy of innovative financing, digital transformation, and adaptive business models, situating resilience within the broader discourse on digital innovation and financial inclusion.

These definitions illustrate that financial resilience encompasses stability, adaptation, foresight, recovery, sustainability, innovation, institutional support, and digital transformation. For agro firms in Lagos State, these perspectives converge to highlight resilience as both a financial necessity and a strategic enabler in turbulent environments, directly linking the concept to the adoption of product, process, and business model innovations.

Empirical Studies

Most existing research in Nigeria has focused broadly on agricultural productivity, value chain financing, or institutional reforms. For example, studies on innovation capacity in agricultural research organizations (Ragasa *et al.*, 2010) and risk-sharing systems like NIRSAL (Awokunle, 2023) highlight the importance of innovation and institutional support. However, these works are largely macro-level analyses and do not capture the firm-level dynamics of how product, process, and business model innovations translate into financial resilience outcomes.

Recent empirical studies (Adebite & Akinwale, 2021; Abdulkarim *et al.*, 2025) have begun to link innovation to resilience, but they often examine small and medium enterprises across sectors rather than focusing specifically on agro firms in Lagos. Professor Olalekan Asikhia (2019) examined *strategic entrepreneurship and organisational performance of agricultural SMEs in Lagos, Ogun, and Oyo States*. His findings revealed that entrepreneurial orientation and innovative practices significantly enhanced customer satisfaction and social value creation, underscoring the role of strategic innovation in firm resilience. In a related study, Benneth Uchenna Eze (2022) analyzed the *effect of innovation on agricultural-based MSMEs survival in Nigeria*, focusing on Lagos, Kano, and Anambra. He found that product, process, and market innovations accounted for 35.6% of survival variance, demonstrating that innovation is a strong predictor of resilience among agro firms.

Adekunle Julius Toluju (2024) explored *agriculture-based MSMEs and their role in achieving Sustainable Development Goals (SDGs)* across Southwest Nigeria, including Lagos. His research highlighted that access to finance, outdated technology,

and poor market access hinder resilience, but strategic interventions and innovation can unlock their potential. Rachael Aderonke Ayo-Lawal (2024) conducted a *technology audit of the Nigerian agricultural sector*, revealing that most firms deploy medium-to-low technologies due to financial constraints. She emphasized that continuous training and strategic adoption of advanced technologies are critical for resilience and food security.

From a financial perspective, Justice Okamgba (2026) reported on agribusiness SMEs in Lagos seeking improved access to capital through capacity-building initiatives led by Pan-Atlantic University's Enterprise Development Centre. The study showed that training in financial management and innovation readiness improved investment appeal and resilience. Uzoagba *et al.* (2025) examined *digital financial services and climate-resilience pathways for sustainable agriculture in Nigeria*. Their findings indicated that fintech solutions enhance resilience by improving access to credit and insurance, particularly for Lagos-based agro SMEs.

These studies collectively show that strategic innovation—whether through entrepreneurship, product/process innovation, technology adoption, or financial strategies—is central to the resilience of agro firms in Lagos State. Scholars emphasize that while innovation boosts survival and competitiveness, access to finance and technology remains a critical barrier. Capacity-building, digital financial services, and supportive policies are repeatedly identified as enablers of resilience. Moreover, while some research emphasizes innovation-driven survival strategies, there is still limited evidence on the combined effect of the three dimensions of strategic innovation—product, process, and business model—on financial resilience in the agro sector.

This gap is particularly significant because Lagos State represents a unique context: it is simultaneously Nigeria's commercial hub and a critical food supply center, with agro firms facing urban market pressures, infrastructural bottlenecks, and climate risks. Without firm-level empirical evidence, policymakers and practitioners lack clear insights into which innovation strategies most effectively enhance resilience in this environment.

Therefore, the knowledge gap justifying this study is the absence of empirical research that systematically examines the relationship between strategic innovation (product, process, and business model) and financial resilience among agro firms in Lagos State. Addressing this gap will provide evidence-based guidance for firms, policymakers, and development agencies, ensuring that interventions are aligned with the realities of Lagos's agro-economy and contribute to sustainable resilience.

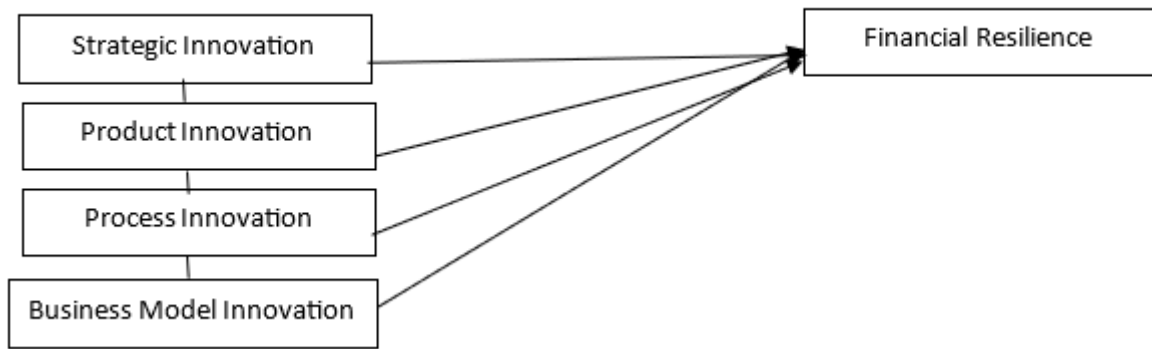


Fig. 1: Conceptual Framework for strategic innovation and financial Resilience

METHODOLOGY

This study adopted cross-sectional survey research. This design was appropriate because they allow for the systematic measurement of relationships between strategic innovation and financial resilience dimensions such as product, process, and business model innovation. The population of the study is 2500 registered agro firms in Lagos State, including crop producers, livestock enterprises, aquaculture businesses, and agro-processing firms. From this population, 345 agro firms were determined using Taro Yamene formula. Stratified sampling technique was used to ensure representation across different categories of agro firms. Data were collected through structured questionnaire. To ensure validity, the questionnaire was subjected to expert review and pilot testing with small group of agro firms. Data

were analyzed using descriptive statistics (mean, standard deviation) to summarize responses and inferential statistics (Pearson Product Moment Correlation and Multiple regression) in testing the hypotheses with the aid of Statistical Package for Social Sciences.

DATA ANALYSIS AND RESULTS

Response Rate

A total of 90 percent response rate was achieved from the survey and these made the valid questionnaire for the analysis to be 311. The table below show the pattern of response for each dimension (Product innovation, Process Innovation, Business Model Innovation) and the dependent variable (Financial Resilience) study variables:

Table 4.1: Descriptive Analysis Result of Study Variables

Variables	Item	1	2	3	4	5	Mean (M)	SD
Product Innovation	Introduced new products	20	35	60	120	76	3.9	0.82
	Diversified into value-added goods	25	40	70	110	66	3.7	0.88
	Adapted products to consumer preferences	15	30	55	125	86	4.0	0.76
	Improved product quality standards	18	33	65	120	75	3.8	0.81
	Export-oriented diversification	30	45	80	100	56	3.5	0.95
Process Innovation	Adopted new technologies	28	42	75	105	61	3.6	0.90
	Reduced post-harvest losses	20	36	70	115	70	3.8	0.85
	Improved efficiency in operations	12	28	55	130	86	4.1	0.72
	Digital monitoring systems	35	50	80	95	51	3.4	0.97
	Enhanced supply chain coordination	22	40	72	110	67	3.7	0.89
Variable	Item	1	2	3	4	5	M	SD
Business Model Innovation	Cooperative financing models	30	48	78	95	60	3.5	0.93
	Digital platforms for sales	18	32	65	120	76	3.9	0.80
	New partnerships/alliances	25	40	70	110	66	3.6	0.87
	Subscription/contract farming	40	55	85	80	51	3.3	1.02
	Expanded market access	20	35	68	120	68	3.8	0.84
Financial Resilience	Stable revenue despite shocks	22	38	70	115	66	3.7	0.86
	Sustained liquidity	28	45	75	100	63	3.6	0.91
	Quick recovery from shocks	18	35	65	120	73	3.8	0.83
	Effective debt management	30	50	80	95	56	3.5	0.94
	Sustained operations during downturns	15	30	60	125	81	3.9	0.79

From above table 4.1, the mean score range between 3.5–4.1 suggesting moderate to high agreement,

indicating firms are adopting innovation practices and showing resilience. The standard deviations (0.72–1.02)

reflect variability in responses, showing that while many firms innovate, adoption levels differ across subsectors. Stronger scores in process innovation and financial resilience suggest firms prioritize efficiency and survival strategies, while business model innovation shows more

variability, reflecting uneven adoption of digital and cooperative financing models.

Hypothesis 1: There is no significant relationship between product innovation and strategic resilience in Agro Industry of Lagos State.

Table 4.2: Correlation result of the relationship between business model innovation and financial resilience

Variable	Financial Resilience	Product Innovation	P value at 0.05 Benchmark
Financial Resilience	1.00	0.53**	0.000
Product Innovation	0.53**	1.00	

The result in table 4.2 show there is a significant ($p < 0.000$) moderate positive correlation ($r = 0.53$) between product innovation and financial resilience of agro firms in Lagos, Nigeria. This negates Hypothesis 1 (H1).

Hypothesis 2: There is no significant relationship between process innovation and strategic resilience in Agro Industry of Lagos State.

Table 4.3: Correlation result of the relationship between process innovation and financial resilience

Variable	Financial Resilience	Product Innovation	P value at 0.05 Benchmark
Financial Resilience	1.00	0.57**	0.000
Process Innovation	0.57**	1.00	

The result in table 4.3 show there is a significant ($p < 0.000$) moderate positive correlation ($r = 0.57$) between process innovation and financial resilience of agro firms in Lagos, Nigeria. This negates Hypothesis 2 (H2).

Hypothesis 3: There is no significant relationship between business model innovation and financial resilience in Agro Industry of Lagos State.

Table 4.4: Correlation result of the relationship between business model innovation and financial resilience

Variable	Financial Resilience	Product Innovation	P value at 0.05 Benchmark
Financial Resilience	1.00	0.49**	0.000
Business Model Innovation	0.49**	1.00	

The result in table 4.4 show there is a significant ($p < 0.000$) moderate positive correlation ($r = 0.49$) between business model innovation and financial resilience of agro firms in Lagos, Nigeria. This negates Hypothesis 3 (H3).

Hypotheses 4: There is not significant effect of combination product, process, and business model innovations does not significantly predicts financial resilience among agro firms in Lagos State.

Table 4.5: Regression Model Result on the effect of the combine dimensions of strategic innovation on financial resilience

Predicting variable	Correlation value R	Regression (R) Square	Adjusted R Square
Combined Innovation	.622	.789	.789

Table 4.5 above revealed the regression analysis that explains the model results of the combined effect of dimensions of strategic innovation on financial resilience of agro firms in Lagos State. As previously expressed in table 6, the correlation value $R = 0.622$ means that there is a strong correlation between the collective innovations and financial resilience. Also, the model shows a regression value of $R^2 = 0.789$, meaning that the

collective dimensions of innovation bring about 79% variation in financial resilience of agro firms operating in Lagos state. Similarly, the table also revealed the adjusted value of $R^2 = 0.789$, indicating that the model is robust, with minimal inflation from extra predictors. Overall, the values show that strategic innovations collectively have a very strong explanatory power for financial resilience.

Table 4.6: ANOVA Result on the effect of the combine dimensions of strategic innovation on financial resilience

Predicting variable	Sum of Squares	df	Mean Square	F	Sig.
Regression	10019.891	3	.3333.964	26381.138	.000

From table 4.6 above the ANOVA result is presented with $F = 26,381.138$ at $P = 0.000 < 0.05$, indicating that the model is statistically significant. This means that the combined effect of product, process and

business model innovations on financial resilience is not due to chance. So, the overall hypothesis that strategic innovation influence financial resilience is strongly supported.

Table 4.7: Coefficients Result on the effect of the combine dimensions of strategic innovation on financial resilience.

Variable	Coefficient (B)	Beta (Standardized)	t-value	Sig.	Interpretation
Constant	-.071		-.905	.366	Not significant
Product Innovation	0.429	0.426	11.513	0.000	Strong positive effect
Process Innovation	0.450	0.450	11.126	0.000	Strong positive effect
Business Model Innovation	0.120	0.124	2.907	0.004	Positive but weaker effect

Table 4.7 above show that product and process innovations are the most influential drivers of financial resilience, meanwhile, business model innovation still matters, but its impact is smaller compared to product and process innovation. Also, the constant (-0.071, not significant) suggests that without innovation, financial resilience is not meaningfully predicted.

DISCUSSION

Product Innovation and Financial Resilience

The result of the study revealed a moderate positive relationship ($R = 0.53$, $p < 0.000$) between product innovation and financial resilience of Agro companies in Lagos State. The correlation is statistically significant at $p < 0.000$, which is well below the 0.05 benchmark. This means that as agro firms adopt more innovative products, their ability to withstand financial shocks and maintain stability improves. The strength of the correlation (0.53) indicates that while product innovation is not the sole determinant of financial resilience, it plays a substantial role. Firms that diversify their products, introduce new varieties, or improve product quality are better positioned to adapt to market fluctuations, inflationary pressures, and competitive challenges.

Interestingly, this result negates Hypothesis 1, which presumably stated that there is no significant relationship between product innovation and financial resilience. The rejection of H_{01} suggests that product innovation is indeed a critical factor in building resilience. This finding aligns with empirical studies such as Eze (2022), who found that product, process, and market innovations accounted for over 35% of the variance in MSME survival, and Asikhia (2019), who emphasized the role of strategic entrepreneurship in enhancing performance among agro SMEs.

This is also corroborated by Adegbite and Ayinde (2019) who found out that product diversification and process efficiency significantly improved financial stability among agro firms in Nigeria. Also, Bigliardi and Galati (2013) demonstrated that product innovation aligned with consumer preferences thereby enhancing competitiveness and resilience in food related enterprises.

Process Innovation and Financial Resilience

The correlation analysis reveals a moderate positive relationship ($r = 0.57$) between process innovation and financial resilience of agro firms in Lagos State. The relationship is statistically significant at $p < 0.000$, which is well below the 0.05 benchmark. This indicates that firms engaging in process innovation—such as adopting new production methods, improving supply chain efficiency, or integrating technology into operations—tend to exhibit stronger financial resilience.

This finding directly negates Hypothesis 2, which posited that there is no significant relationship between process innovation and financial resilience. The rejection of H_{02} suggests that process innovation is indeed a critical driver of resilience in the agro industry. The result aligns with studies such as Eze (2022), who found that process, product, and market innovations significantly influenced MSME survival in Nigeria, and Sarah *et al.* (2025), who demonstrated that adoption of precision agriculture technologies improved productivity and resilience.

Similarly, process innovation demonstrated the moderate correlation overall ($r = 0.57$) with financial resilience. This dimension underscores that operational efficiency and technology adoption are central to resilience. Process innovation leads by ensuring efficiency and logistics improvements provide the strongest resilience buffer. The is supported by Porter and Happelmann (2014) which show that process and product innovations through digital technologies improve efficiency and resilience in competitive industries including agriculture.

Business Model Innovation and Financial Resilience

The correlation analysis shows a moderate positive relationship ($r = 0.49$) between business model innovation and financial resilience of agro firms in Lagos State. The relationship is statistically significant at $p < 0.000$, which is well below the 0.05 benchmark. This indicates that firms that adopt innovative business models—such as new revenue streams, alternative distribution channels, or novel customer engagement strategies—tend to exhibit stronger financial resilience.

This finding directly negates Hypothesis 3, which posited that there is no significant relationship between business model innovation and financial resilience. The rejection of H_03 suggests that business model innovation is indeed a relevant factor in building resilience in the agro industry. Although the correlation is moderate, it demonstrates that rethinking how firms create, deliver, and capture value contributes meaningfully to their ability to withstand financial shocks.

Also, business model innovation had a moderate correlation ($r = 0.49$) with financial resilience. Business model innovation expands opportunities by digital platforms and partnerships open new revenue streams and financing options. Figueiredo and Franco (2018) corroborates these findings as they highlighted that cooperative financing and digital platforms are key business model innovations that strengthen resilience in agricultural firms.

Effect of the Combination of Product, Process and Business Innovation on Financial Resilience

Collectively, when product, process, and business model innovations were combined into a single index, the correlation with financial resilience rose to $r = 0.62$ ($p = 0.000$). This indicates that integrated innovation strategies are more powerful than any single dimension alone. The result was further strengthened with the regression analysis which showed that strategic innovations collectively explain nearly 80% ($R^2 = 0.789$) of financial resilience, confirming their critical role. Among the three, process innovation and product innovation are the strongest contributors, while business model innovation plays a supportive but less dominant role. This implies that organisations aiming for financial resilience should prioritize continuous product development and process efficiency, while also adapting their business models for long-term sustainability.

So, firms that simultaneously innovate in products, processes, and business models achieve the highest resilience outcomes. So, collectively firms are better positioned to withstand shocks, maintain liquidity, and sustain operations. Therefore, strategic innovation is a critical pathway to financial resilience, and policies or interventions should encourage integrated innovation adoption across the agro sector. This is corroborated by Sanginga and Woomer (2009) who revealed that integrated from their study that integrated innovation strategies (product, process and organisational) are more effective than isolated efforts in building resilience.

CONCLUSION

The findings collectively demonstrate that strategic innovation is a critical enabler of financial resilience among agro firms in Lagos State. Each innovation dimension (product, process and business model) showed significant positive correlations with resilience, with process innovation emerging as the

strongest driver. Importantly, the combined effect of all three dimensions produced the highest resilience outcomes, confirming that integrated innovation strategies outperform isolated efforts. This provides a clear answer to this study's problem, meaning that agro firms that strategically innovate are better positioned to withstand shocks, sustain liquidity and maintain operations in volatile environments.

Recommendations

1. There is a need to strengthen process innovation by adopting modern farming techniques, mechanization, and efficient supply chain practices. By doing so, firms can reduce costs, improve productivity, and remain financially stable in volatile markets.
2. Agro firms must adapt product to consumer preferences and diversify into value added goods to sustain competitiveness and financial stability.
3. Agro firms should explore new revenue streams, digital platforms, and alternative distribution channels such as e-commerce and cooperative marketing. This will enhance resilience by reducing dependence on traditional models and opening access to broader markets and funding opportunities.
4. Agro firms in Lagos State should adopt an integrated innovation strategy that combines product, process, and business model innovation simultaneously.

REFERENCES

- Abdulkarim, S., Bello, A., & Yusuf, K. (2025). Innovative financing and financial resilience in emerging markets. *Journal of Finance and Development*, 31(2), 145–162.
- Adams, R., & Jeanrenaud, S. (2020). Sustainability-oriented financial resilience: A systematic review. *International Journal of Management Reviews*, 22(3), 281–302.
- Adams, R., Jeanrenaud, S., Bessant, J., Denyer, D., & Overy, P. (2020). Sustainability oriented innovation: A systematic review. *International Journal of Management Reviews*, 22(1), 20–45.
- Adegbite, O., & Akinwale, Y. (2021). Innovation-driven financial resilience in Nigerian SMEs. *African Journal of Business and Economic Research*, 16(2), 55–72.
- Adegbite, O., & Akinwale, Y. (2023). Strategic innovation as a resilience enabler in Nigerian agribusiness. *African Journal of Business and Economic Research*, 18(2), 45–62.
- Adegbite, O., & Ayinde, O. (2019). Innovation and resilience in Nigerian agribusiness enterprises. *Journal of Agricultural Economics and Rural Development*, 7(2), 45–58.
- Akinwale, Y. (2018). Business model innovation and financial resilience in agro firms.

- Awokunle, T. (2023). Institutional support and financial resilience in agribusiness. *Journal of Development Studies*, 59(1), 88–104.
- Barney, J. (1991). “Firm Resources and Sustained Competitive Advantage.” *Journal of Management*, 17(1), 99–120.
- Bigliardi, B., & Galati, F. (2013). Innovation trends in the food industry: The case of functional foods. *Trends in Food Science & Technology*, 31(2), 118–129.
- Brune, L., & McIntosh, C. (2019). Household financial resilience in developing economies. *World Development*, 122, 399–415.
- Casadesus-Masanell, R., & Zhu, F. (2019). Business model innovation and competitive advantage. *Strategic Entrepreneurship Journal*, 13(4), 463–478.
- Central Bank of Nigeria (2020). Agricultural Intervention Fund Report.
- Chen, M., & Miller, D. (2016). Strategic innovation: Integrating value creation and competitive advantage. *Strategic Management Journal*, 37(3), 475–497.
- Chen, M., Miller, D., & Zhang, Y. (2017). Financial flexibility and resilience in turbulent markets. *Strategic Management Journal*, 38(2), 435–456.
- Climent, R. C., & Haftor, D. M. (2021). Value creation through the evolution of business model themes. *Journal of Business Research*, 122, 353–361. <https://doi.org/10.1016/j.jbusres.2020.09.007>.
- Figueiredo, E., & Franco, M. (2018). Business model innovation in agribusiness: A systematic literature review. *Journal of Rural Studies*, 60, 21–29.
- Govindarajan, V., & Trimble, C. (2015). *The Other Side of Innovation: Solving the Execution Challenge*. Harvard Business Review Press.
- Hall, P., & Lamont, M. (2015). *Social resilience in the neoliberal era*. Cambridge University Press.
- Hartwich, F., Tola, J., Engler, A., González, C., & Ghezan, G. (2010). Building agricultural innovation systems: The role of public research organizations and innovation brokers.
- Kanyangi, C.A., & Gichinga, L. (2019). Effect of innovation strategy on the organizational performance in Mombasa law courts, Kenya. *Strategic Journal of Business & Change Management*, 6(3), 517–35.
- Lastras, F. S. A. (2023). *A holistic approach for Business Model Innovation in the EV ecosystem: A role-based approach for analyzing BMI*. (Doctoral dissertation, Université Paris-Saclay). <https://theses.hal.science/tel-04506554/>
- Liu, Y., Li, Y., & Wei, Z. (2017). Strategic innovation and firm performance: The role of integrative capability. *Journal of Business Research*, 70, 166–173.
- Maine, E., Lubik, S., & Garnsey, E. (2012). Process-based vs. product-based innovation: Value creation by nanotech ventures. *Technovation*, 32(3), 179–92.
- Markides, C. (2015). Strategic innovation: Redefining markets and reshaping business models. *Business Strategy Review*, 26(2), 12–18.
- . Martinez, G., Renukappa, S., & Suresh, S. (2021). Business model innovation in small enterprises from developing countries during COVID-19 outbreak: exploring drivers and BMI outcomes. *International Journal of Business Environment*, 12(4), 364–388.
- Martin, R., & Sunley, P. (2016). Regional economic resilience: Evolution and critique. *Journal of Economic Geography*, 16(4), 1–25.
- Olaniyi, O., & Adeoye, A. (2016). Process innovation and efficiency in Nigerian agriculture.
- Penrose, E. (1959). *The Theory of the Growth of the Firm*. Oxford University Press.
- Porter, M. E., & Heppelmann, J. E. (2014). How smart, connected products are transforming competition. *Harvard Business Review*, 92(11), 64–88.
- Prahalad, C. K., & Hamel, G. (1990). “The Core Competence of the Corporation.” *Harvard Business Review*, 68(3), 79–91.
- Ragasa, C., Mazunda, J., & Kadzamira, M. (2010). Agricultural research and innovation capacity in Nigeria.
- Sanginga, P. C., & Woome, P. L. (2009). Integrated innovations for improving smallholder resilience in Africa. *African Journal of Agricultural Research*, 4(4), 325–334.
- Teece, D. J. (2010). Business models, business strategy and innovation. *Long Range Planning*, 43(2–3), 172–194.
- Teece, D. J. (2018). *Dynamic capabilities and strategic management: Organizing for innovation and growth*. Oxford University Press.
- Teece, D. J., Pisano, G., & Shuen, A. (1997). “Dynamic Capabilities and Strategic Management.” *Strategic Management Journal*, 18(7), 509–533.
- Wernerfelt, B. (1984). A Resource-Based View of the Firm.” *Strategic Management Journal*, 5(2), 171–180.
- Zand, H., & Rezaei, B. (2020). Investigating the impact of process and product innovation strategies on business performance due to the mediating role of environmental dynamism using structural equations modeling. *Brazilian Journal of Operations & Production Management*, 17(2). <https://doi.org/10.14488/10.14488/BJOPM.2020.022>