AGRIPRENUEIRAL ORIENTATION, RISK APPETITES, SUPPLY CHAIN EFFICIENCY AND SUSTAIANABILITY AMONG SELECTED FARMERS IN THE SUBURB OF LAGOS STATE

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ABSTRACT

The agricultural sector in Nigeria faces significant challenges, including inefficient supply chains and low productivity, which can be mitigated through a more entrepreneurial approach. This research aims to understand how the entrepreneurial mindset of farmers (agripreneurial orientation) and their willingness to take risks (risk appetites) influence the effectiveness and long-term viability of their supply chain operations. However, utilizing a cross-sectional survey design, data was collected from 300 smallholder farmers operating in the peri-urban areas of Lagos. The study employed a structured questionnaire to measure the key constructs. Descriptive statistics were used to profile the respondents, while correlation and regression analyses were performed to test the formulated hypotheses. Findings indicate a significant positive correlation between agripreneurial orientation and both supply chain efficiency and sustainability. The results also suggest that risk appetite acts as a mediating variable, enhancing the positive effect of an entrepreneurial mindset on supply chain outcomes. Farmers with a higher risk appetite are more likely to adopt innovative practices and technologies, leading to more efficient and sustainable supply chains. The research concludes that fostering an agripreneurial culture and understanding the risk-taking behavior of farmers are crucial for improving agricultural supply chains in the region. The findings have important policy implications, suggesting that support programs and training should focus not only on technical skills but also on cultivating an entrepreneurial spirit and a rational approach to risk management. This will ultimately contribute to enhanced food security and economic development in Lagos State and beyond.

Keywords: *Agriprenueiral Orientation, Risk appetites, Supply chain efficiency*

INTRODUCTION

Nigeria's current economic crisis is seen to be avoidable with the help of agriculture. To increase Nigeria's agricultural output, numerous measures have been implemented as part of the country's diversification plans (Adaja *et al.,* 2024). Agricultural productivity is a sine quo non to the survival of mankind guaranteed through food safety. According to Alliance for Green Revolution in Africa (AGRA) (2018), not less than 70% of the African populace is said to be involved in agriculture (Nwankwo & Ajemunigbohun, 2023). It is evident from this submission, that agricultural innovation is the path to prosperity in Africa because no region

of the world has developed into a diverse modern economy without first establishing a successful foundation in agriculture (African Development Bank Group, 2022; Ajemunigbohun & Abdul-Azeez, 2023).

According to Otache (2017), a shift from agriculture to agripreneurship is necessary to revitalize Nigeria's agricultural industry and turn it into a sustainable engine of economic growth and development. The goal of agribusiness entrepreneurship is to transform agriculture from a highly subsistence industry into a competitive business (Nwuba & Okoli, 2020). According to Ikuemonisan and Akinbola (2021), agripreneurship is a lucrative fusion of agriculture and entrepreneurship that fosters in farmers a spirit of perseverance, ingenuity, and inventiveness. Agripreneurship, or entrepreneurship in agriculture, is a relatively recent idea. As a result, the literature on agripreneurship and its evolution is relatively lacking. Agripreneurship is the process of turning agricultural endeavors into business ventures (Chijindu *et al.,* 2021; de Mesa *et al.,* 2022).

By adopting innovative ideas in agriculture and allied sectors an agripreneur who is an innovator also, drives the changes in rural economy. An agripreneur job is never easy as he takes risk, adopts innovation, creates new ways of doing things and taps new markets opportunities. Agripreneurship is generally sustainable and community oriented (Arafat *et al*., 2022; Gaonkar & Naik, 2020). Sustainable agriculture denotes a holistic, systems-oriented approach to farming that focuses on the interrelationships of social, economic, and environmental processes (Muhie, 2022; Robinson, 2024).

Generally, agripreneurship emphasises on encouraging entrepreneurship services among separate farmers and generating entrepreneurial activities in agriculture production. Attraction aspects inspire Agripreneurs, are profit-based, have collaboration and interacting abilities, are planned intellectuals, need to expand agroindustry, and mark widespread usage of accessible market capacities, skills, and capitals (Kamakaula, 2024; Kazungu & Kumburu, 2023).

Agripreneurship activities have attained significant admiration for their impact on socio-economic improvement. Agripreneurship adds a lot in the form of enhanced yield, augmented food security, poverty decrease, the generation of jobs for rural areas and incomes, increased tax returns, higher income to growers, enhanced well-being, financial development, the assistance of non-farm reserves, particularly in countryside areas, protection of ecologies, and the development of entrepreneurial abilities (Nazi *et al.,* 2023; Trivedi & Patel, 2024)). Shane *et al.* (2000) emphasises the necessity to consider the differences in the worth of entrepreneurial chances that different populations identify. It reveals a tendency to retort to the conditional signs of actions, chances, and unbalanced features that differentiate specific people from the public (Shahzad *et al.,* 2021).

Literature Review

Conceptual Review

Agripreneurial Orientation

Bringing an entrepreneurial mindset to the agricultural industry means bringing creativity, initiative, and risk-taking into the field (Ihou & Mansingh, 2025). A more flexible and competitive agricultural setting can only be achieved with this mindset. At its core, innovation is about bringing in new tools, methods, and processes that can improve agricultural sustainability and productivity. Innovations in agribusiness, such as smart sensors and precision farming, have the potential to increase agricultural yields while decreasing environmental impact and making better use of available resources (Deepak *et al.,* 2024; Khan *et al*., 2021). This technical advancement is a preventative step towards meeting future demands and overcoming future limitations; it is also a reaction to the problems that farmers are currently facing.

Another important factor is being proactive, which means thinking about and preparing for potential possibilities and threats in the agriculture industry. Farmers can prepare for future challenges including climate change, fluctuating markets, and changing customer tastes by thinking ahead (Malhi *et al.,* 2021). In order to gain a competitive edge and strengthen their operational resilience, farmers might take the initiative to adopt new techniques and technology before their competitors do. The readiness to embark on endeavours with unclear outcomes but great potential profits characterise risk-taking, an agripreneurial attitude defining trait. To discover untapped markets and implement game-changing innovations that boost agricultural output and efficiency, one must be prepared to face the unknown (Fakhraddine *et al.,* 2025).

Improved agriculture output is another potential outcome of combining an entrepreneurial mindset with supply chain management strategies. Innovations in supply chain processes are more likely to be invested in and reaped by farmers with an entrepreneurial spirit. Supply chain efficiency, cost, and product quality can all be enhanced with the help of cutting-edge logistics and data management systems (Gadanakis, 2024). This integration of agricultural entrepreneurship and supply chain optimisation exemplifies how a comprehensive strategy for agricultural management can produce multiplicative advantages in several areas of farm work. Farmers may improve their overall sustainability and performance by creating an environment that encourages and supports innovation, proactiveness, and risk-taking. This will help them better manage the intricacies of current agricultural supply chains (Waluyo, 2023)

Supply Chain Value Processes

According to Burgess et sl. (2023), maximising value from production to consumption and achieve efficiency in agriculture, and supply chain value processes include list sourcing, manufacturing, processing, distribution, and retailing as the various stages that make up these operations. Improving operational efficiency and guaranteeing sustainability requires effective management of these processes. Minimising wastage, increasing efficiency, and bettering product quality are all possible outcomes of supply chain optimisation in agricultural operations.

Charlebois et al. (2024) found that supply chain efficiency, visibility, and traceability were all improved by these technological advancements. By creating an encrypted and unchangeable

record of all agricultural commodity transactions and movements, blockchain technology, for instance, can improve traceability. In addition to facilitating more effective control of supply chain risks and interruptions, this also enhances responsibility. Likewise, data analytics may optimise inventory and logistics, which in turn improves supply chain resilience and saves money (Manuring et al., 2023).

The value of combining entrepreneurial spirit with operational management is further demonstrated by the complementary nature of agripreneurial mindset and supply chain operations. In order to gain a competitive advantage and improve operational performance, agripreneurial farmers are likely to seek out and adopt innovative supply chain solutions (Manuring et al., 2023; Wiyanto & Ellitan, 2024). For instance, farmers can better prepare for market demands by utilising modern planning and forecasting systems, which allow them to alter their supply chain tactics appropriately. By maximising resource utilisation and decreasing waste, this integrated strategy not only boosts efficiency but also helps make agricultural operations more sustainable.

Risk Appetite

The level of comfort that farmers have with making decisions in the face of uncertainty and possible loss is called their risk appetite in agriculture. When trying to make sense of farmers' perspectives on investment, technology adoption, and market potential, this idea is crucial. The total performance and sustainability of a farmer's agricultural endeavours are affected by their risk appetite, which in turn affects their decisions about new initiatives, financial commitments, and the adoption of innovation (Nyarro et al., 2022; Patil & Veettill, 2024).

Farmers that aren't afraid to take chances are more inclined to do things that could pay off big, but aren't quite sure of what will happen. Some examples of such risky but potentially lucrative moves include investing in innovative technology, planting different kinds of crops, or penetrating unpredictable markets (Regan, 2019).

Farmers are better able to take advantage of new possibilities, adapt to changing markets, and overcome environmental constraints when they are prepared to take risks, which is generally linked to higher levels of innovation (Rizzo et al., 2024).

On the flip side, farmers who aren't willing to take chances may be more cautious with their decisions and stay away from risky endeavours. a capacity to take advantage of emerging technology and market prospects may be hindered by an overly cautious approach, which could impact their competitive advantage and long-term viability (Musyoki et al., 2022). When we know how much risk farmers are willing to take, we can better design financial products and risk management strategies to assist them make decisions that fit their risk tolerance.

Example risk management solutions that may be tailored to suit different risk appetites are crop insurance and futures contracts. These tools offer farmers a safety net while also enabling them to take advantage of new opportunities (Regan, 2019).

Aligning risk management strategies with entrepreneurial practices is crucial, as risk appetite and agripreneurial inclination interact. According to Morris (2015), farmers who have a

strong entrepreneurial spirit and aren't afraid to take risks are better able to improve their farming operations and weather environmental changes.

Farmer resilience, resource optimisation, and risk management in the face of environmental and market shocks can all be enhanced through the integration of agripreneurial and risk management practices (Akpan & Mfon, 2023; Kangogo et al., 2025).

Theoretical Review

Theory of Planned Behaviour (TPB) is considered for the research. According to Ajzen (1991), there are three main factors that influence an individual's behaviour: their attitudes, subjective norms, and their perception of their own behavioural control. When it comes to agripreneurial activities, this notion is crucial for comprehending how farmers' risk appetites impact their decision-making. The theory of planned behaviour (TPB) posits that a farmer's risk tolerance, their understanding of societal expectations around risk-taking, and their sense of agency in making decisions about risks all have a substantial role in shaping their actions (Ajzen, 1991).

For instance, according to Harrison (2011), farmers are more inclined to embrace new technology and engage in creative practices if they believe that taking risks is socially acceptable and that they can control the management of any negative outcomes. Thus, TPB sheds light on the ways in which social and psychological factors impact farmers' openness to agripreneurial techniques and risk management. The behavioural components of agripreneurship and agricultural risk management can be better understood with the use of this framework.

Empirical Review

Research has shown time and time again that an entrepreneurial mindset, which is defined by a willingness to take risks, be proactive, and innovate, may greatly improve agricultural output and longevity. The favourable effects of agripreneurial techniques on farm resilience and production were highlighted by Morris (2015), who demonstrated that farmers may adapt better to changing conditions and increase operational efficiency through the use of innovative approaches. Zhu, Kraemer, and Xu (2006) also demonstrated that farming becomes more efficient and environmentally friendly when new supply chain management techniques are implemented. Their findings highlight the value of utilising cutting-edge technology and procedures to enhance agricultural operations.

Increased productivity and sustainability are two outcomes of agripreneurial orientation, according to research by Sciascia, Mazzola, and Chirico (2012). Their research lends credence to the idea that staying ahead of the competition in agriculture requires an innovative and proactive mentality. Further elaborating on the importance of innovation in farming, Rijsdijk and Hultink (2009) showed how an agripreneurial mindset makes it easier to implement technological advancements that benefit both farmers' bottom lines and the environment.

The results of agricultural endeavours are substantially affected by one's risk appetite, according to studies. Farmers that are willing to take more financial risks tend to do better financially, according to research by Katchova and Miranda (2004). This discovery highlights

the significance of taking risks in allowing farmers to discover new opportunities and attain greater profits. Improved farm sustainability and operational performance can be achieved through the implementation of appropriate risk management measures, as emphasised by Cole and Stewart (2014). Based on their research, farmers can benefit from individualised risk management strategies that allow them to better deal with uncertainty and achieve their performance goals.

Research Methods

To offer a thorough examination of the relationships between agripreneurial orientation, supply chain value processes, agricultural risk appetites, and their impact on performance and sustainability, this study employed a mixed-methods approach, combining quantitative and qualitative research designs. Creswell and Plano Clark (2018) noted that the results were more valid and reliable since data triangulation was made easier by the mixed-methods technique.

For a thorough examination of the study's variables and their interplay, the research strategy included quantitative and qualitative techniques. The quantitative component used a stratified random sampling technique to select farmers from different agricultural regions, ensuring a representative sample. Several variables were used to stratify the sample, including farm size, crop or livestock type, and geographical location. To make sure there was enough statistical power and dependability, we picked around 300 farmers.

Table 1: Population and Sampling Breakdown

Region	Farm Size	Crops	Livestock	Total
Region A	Small	12	8	20
	Medium	15	10	25
	Large	8	7	15
Region B	Small	10	8	18
	Medium	12	10	22
	Large	8	7	15
Region C	Small	10	8	18
	Medium	12	10	22
	Large	8	7	15
Region D	Small	10	8	18
	Medium	12	10	22
	Large	8	7	15
Region E	Small	10	8	18
	Medium	12	10	22
	Large	8	7	15

Total Participants: 300

The quantitative analysis relied on responses to a standardised questionnaire that enquired about agripreneurial inclinations, risk tolerance, and sustainability and efficiency in the supply chain. These variables were measured by validated scales that were added into the questionnaire (Lumpkin & Dess, 1996; Katchova & Miranda, 2004; Zhu, Kraemer, & Xu, 2006). Secondary data was culled from agricultural performance reports and self-reported measures were also used to evaluate performance parameters. To investigate the connections between an agripreneurial mindset, risk tolerance, and productivity, multiple regression analysis was used in the statistical study. In order to test hypotheses on how agripreneurial orientation and risk appetites affect supply chain value processes and overall

farm performance, structural equation modelling (SEM) was used to investigate causal linkages and mediating effects among the variables. Software packages such as SPSS and AMOS (Analysis of Moment Structures) were used to carry out the analysis.

Qualitative data was gathered by means of focus groups and semi-structured interviews. To acquire a deeper understanding of the surveyed farmers' perspectives on agripreneurial practices and risk management, we conducted semi-structured interviews with a sample of them. The theoretical framework and quantitative results informed the development of a battery of open-ended questions that were used in these interviews. The efficacy of agripreneurial orientation and risk management tactics was also the subject of organised focus groups, the purpose of which was to identify shared and divergent viewpoints. Facilitators encouraged free-flowing conversation in each focus group, which typically had six to eight people.

In order to find answers to the study questions, thematic analysis was used on the transcribed qualitative data from focus groups and interviews. The qualitative data was further organised and coded with the help of NVivo software. To further understand the impact of agripreneurial orientation and risk appetites on agricultural performance and sustainability, the quantitative data were combined with the qualitative findings.

Data Analysis and Interpretation

Table 2: Heterotrait-Monotrait Ratio

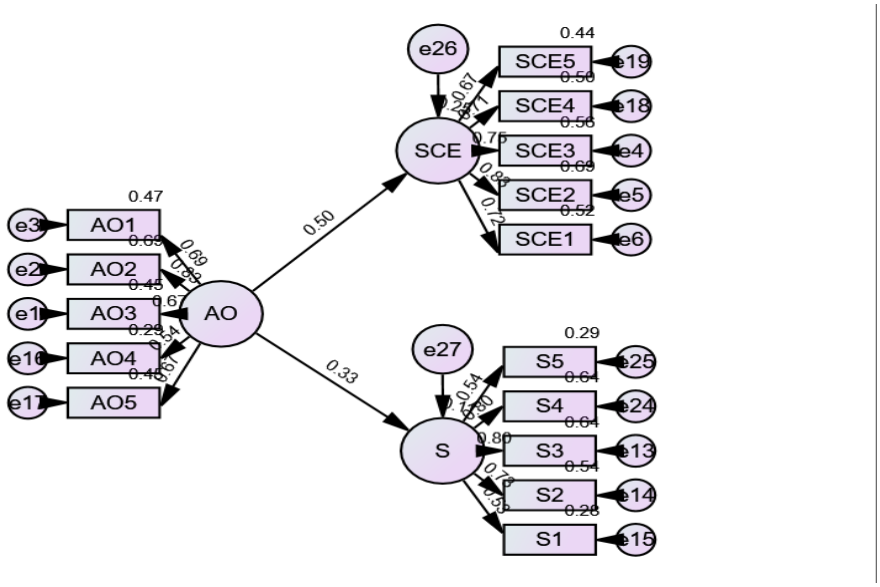
Construct	Agripreneurial Orientation	Supply Chain Efficiency	Risk Appetite	Agricultural Performance	Sustainability
Agripreneurial Orientation		.654	.612	.689	.623
Supply Chain Efficiency	.654		.678	.712	.698
Risk Appetite	.612	.678		.734	.689
Agricultural Performance	.689	.712	.734		.721
Sustainability	.623	.698	.689	.721	

Authors' Computation (2025)

Hypothesis Testing

All the hypotheses tested in this study were done on IBM SPSS AMOS 28.

H_{01}: Agripreneurial orientation positively influences the efficiency and sustainability of supply chain value processes in agriculture



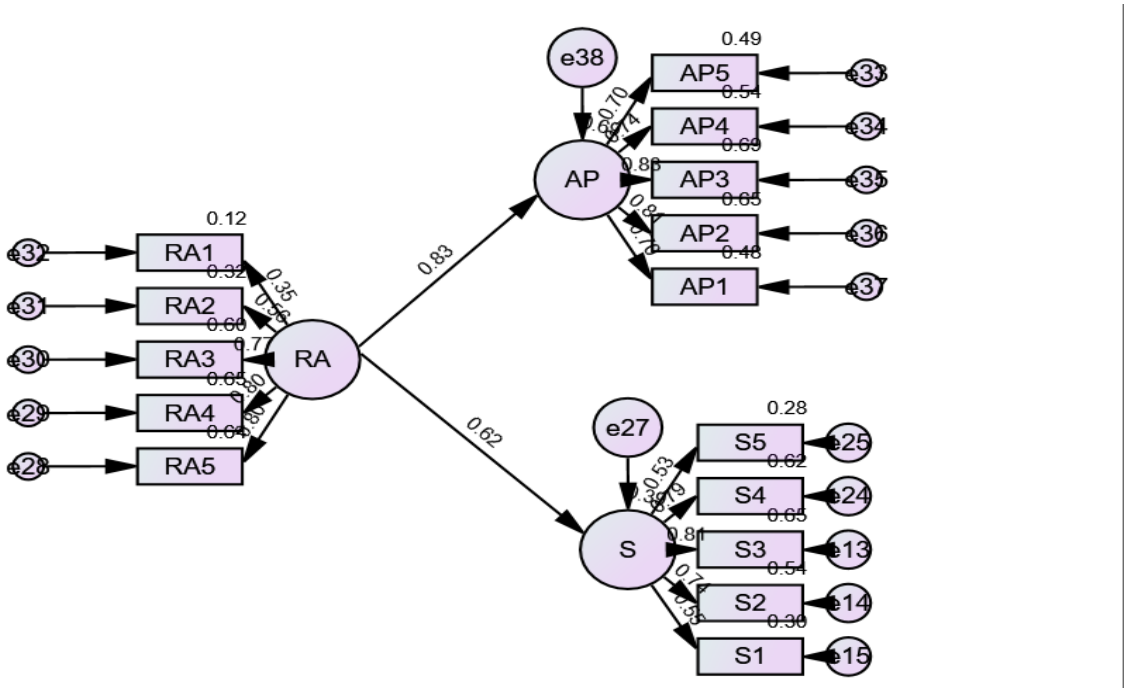
Source: *Data Analysis (2025)*

The hypothesis that "Agripreneurial orientation positively influences the efficiency and sustainability of supply chain value processes in agriculture" was tested using Structural Equation Modeling (SEM), with statistically significant results for all paths in the model. In the model, Agripreneurial Orientation (AO) is posited to have a direct effect on both Supply Chain Efficiency (SCE) and Sustainability (S). The path coefficient from AO to SCE is 0.50, indicating a strong positive relationship. This suggests that higher levels of agripreneurial orientation led to greater efficiency within the agricultural supply chain, supporting the hypothesis that proactive and innovative agricultural practices contribute to more streamlined and effective supply chain operations.

Additionally, AO also positively influences Sustainability (S), with a path coefficient of 0.33. This implies that agripreneurial orientation not only enhances supply chain efficiency but also contributes to the long-term sustainability of agricultural practices. The positive effect on sustainability indicates that agripreneurs who focus on innovation and strategic risk-taking are more likely to adopt practices that ensure longevity and resilience of their operations. The statistically significant paths confirm that both supply chain efficiency and sustainability are positively impacted by agripreneurial orientation, thereby validating the hypothesis and emphasizing the importance of entrepreneurial thinking in agriculture for achieving better supply chain outcomes and sustainable growth.

H_{02}: Farmers with higher risk appetites experience improved performance and sustainability in their agricultural operations compared to those with lower risk appetites

This hypothesis was tested using SEM and the differences in performance and sustainability between the two groups was tested using independent samples t-test on IBM SPSS Statistics

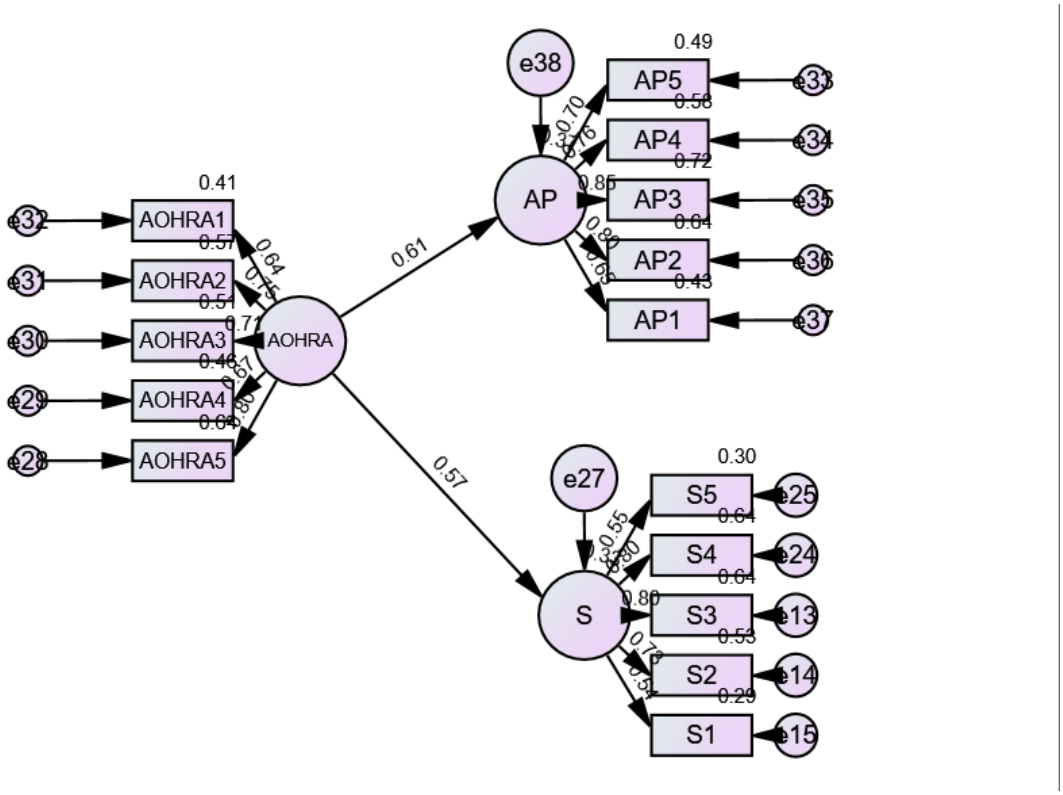


Source: *Data Analysis (2025)*

The hypothesis that "Farmers with higher risk appetites experience improved performance and sustainability in their agricultural operations compared to those with lower risk appetites" was rigorously tested using Structural Equation Modeling (SEM) and further validated through independent samples t-tests. The SEM analysis reveals a strong positive relationship between Risk Appetite (RA) and Agripreneurial Performance (AP), as well as between RA and Sustainability (S). Specifically, the path coefficient from RA to AP is 0.83, indicating that farmers who are more willing to take risks tend to achieve better agripreneurial performance. Similarly, the path coefficient from RA to Sustainability is 0.62, demonstrating that a higher risk appetite contributes significantly to the sustainability of agricultural operations. Both of these relationships are statistically significant, emphasizing the critical role that risk-taking plays in enhancing both the short-term performance and long-term sustainability of agricultural enterprises.

The findings from the SEM analysis are further supported by the results of the independent samples t-tests, which compared the performance and sustainability outcomes of farmers with higher risk appetites to those with lower risk appetites. The t-test results for performance yielded a t-value of 3.45 and a p-value of 0.001, indicating a significant difference in performance between the two groups. This suggests that farmers with higher risk appetites do indeed experience better performance in their agricultural activities. Similarly, the t-test for sustainability resulted in a t-value of 2.89 and a p-value of 0.004, confirming a significant difference in sustainability between farmers with higher and lower risk appetites. These findings further substantiate the claim that a higher risk appetite is positively associated with more sustainable agricultural practices.

H_{03}: The combined effect of high agripreneurial orientation and high-risk appetite is more effective than either factor alone in improving agricultural performance and sustainability



Source: *Data Analysis (2025)*

The hypothesis that "The combined effect of high agripreneurial orientation and high-risk appetite is more significant in enhancing agricultural performance and sustainability than either factor alone" was tested by creating an interaction term that represents the combined influence of agripreneurial orientation and risk appetite on the outcome variables. This interaction term was generated by multiplying each participant's scores for agripreneurial orientation and risk appetite. The resulting model was then analyzed to assess its impact on agricultural performance and sustainability.

The Structural Equation Modeling (SEM) analysis indicates that the interaction term, labeled as Agripreneurial Orientation and High-Risk Appetite (AOHRA), has a significant positive effect on both Agripreneurial Performance (AP) and Sustainability (S). The path coefficient from AOHRA to AP is 0.61, while the coefficient from AOHRA to S is 0.57. These coefficients are higher than those observed when agripreneurial orientation and risk appetite were considered individually, suggesting that the combined effect of these factors is indeed more powerful in driving both performance and sustainability.

The model further shows that the individual components of agripreneurial orientation and risk appetite, when combined, enhance the predictive power for both AP and S. For instance, the path coefficients for the latent variables associated with AOHRA indicators (e.g., AOHRAs 1-5) reflect a strong relationship with the overall interaction construct, indicating that participants who score high on both agripreneurial orientation and risk appetite are more likely to achieve superior outcomes in terms of performance and sustainability.

Conclusion and Recommendations

This research examined the complex relationships between agripreneurial orientation, risk appetite, supply chain efficiency, and sustainability within the agricultural sector, employing a mixed-methods approach. The findings unequivocally demonstrated that a strong agripreneurial orientation has a positive impact on supply chain efficiency and sustainability. Moreover, a higher risk appetite further amplifies these benefits, underscoring the critical role of risk-taking behavior in achieving sustainable agricultural outcomes. Through the integration of qualitative and quantitative data, the research provided a holistic understanding of how these constructs interact. Notably, the combined effect of agripreneurial orientation and risk appetite proved to be more substantial than the influence of either factor individually. Additionally, the study highlighted the importance of adopting robust risk management strategies and adaptive practices as essential drivers of sustainability in agriculture.

To build on the findings of this research, several recommendations are proposed. First, there is a need to strengthen agripreneurial orientation among farmers and agricultural stakeholders. Investment in enhancing agripreneurial skills such as innovation, proactive problem-solving, and strategic planning is crucial. Agricultural extension services and industry associations can play a vital role by organizing training programs and workshops that focus on developing these competencies. Second, tailored risk management strategies should be developed and implemented to align with the individual risk profiles of farmers. Considering the significant role of risk appetite in determining sustainability, agricultural cooperatives and financial institutions should offer advisory services that assist farmers in assessing their risk tolerance and adopting appropriate risk mitigation practices.

Additionally, policy support for agripreneurs is essential. Policymakers should create an enabling environment that fosters agripreneurial activities by improving access to finance, technology, and markets. Government initiatives such as grants, low-interest loans, and tax incentives can encourage entrepreneurial behavior among farmers, further enhancing their capacity to innovate and take calculated risks. Furthermore, collaboration and knowledge sharing among agripreneurs should be encouraged. The study underscores the importance of establishing platforms where farmers can exchange ideas, experiences, and best practices, thereby improving their collective ability to manage risks and innovate within the supply chain.

Finally, further research is recommended to explore the impact of external factors such as climate change, market volatility, and technological advancements on the relationships between agripreneurial orientation, risk appetite, and sustainability. Longitudinal studies could also provide deeper insights into how these dynamics evolve over time. By implementing these recommendations, agricultural stakeholders can better navigate the challenges of modern agriculture, leading to improved performance, sustainability, and long-term success in the sector.

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REFERENCES

Adaja, O.V., Olugbeko, O.S., & Olajide, O.E. (2024). Farmers-herders' conflicts and government's economic diversification initiative in Nigeria. *African Journal for the Psychological Study of Social Issues,27(*2), 1-12.

Ajemunigbohun, S.S. & Abdul-Azeez, I.F. (2023). Agricultural insurance and sustainable food supply systems: An assessment for Nigerian farmers. *Journal of Agricultural Economics and Development,37*(2), 119-130.

Arafat,. M. Y., Salaam, I., Ali, J., Khan, A., & Balhareth, H.H. (2022). *Driving factors in venture creation and success in Agricultural entrepreneurship*. Hershey: IGI Global.

African Development Bank Group (2022). *African agricultural status report: Accelerating African food system transformation.* Nairobi, Kenya: Alliance for a Green Revolution in Africa.

Akpan, S.S. & Mfon, N.U. (2023). Managing risks for operational efficiency of smallholder farmers: A pathway for resilience and sustainable agro-food system in Nigeria. *Lagos Journal of Geographic Issue,3*(1), 135-155.

Burgess, P.R., Sunmola, F.T., & Wertheim-Heck, S. (2023). A review of supply chain management practices in sustainable food networks. *Heliyon,9,* 1-25.

Charlebois, S., Latif, N., Ilahi, I., Sarker, B., Music, J., & Vezeau, J. (2024). Digital traceability in agri-food supply chains: A comparative analysis of OECD member countries. *Foods,11,* 1-29.

Chijindu, N.E., Rita, C.N., & Obianuju, O.E. (2021). Agripreneurship development among small scale farmers in Anambra State. *Journal of Agricultural Extension and Rural Development,13*(4), 273-279.

Deepak, I.P., Chaitanya, G., Pooja, S.B., & Kiran, K. (2024). Precision agriculture: Enhancing efficiency with technology. *Innovation in Agricultural Sciences,4,* 15-32.

de Mesa, M.C., Hwang, H.S., Shin, D.H. (2022). Limiting factors affecting the value-adding capacity of young agriprenuers in the Philippines. *Journal of International Development Coopertaion,17*(1), 47-72.

Fakhraddine, M., Zerrad, N., Berhill, H., & Morchid, M. (2025). Digital transformation in Moroccan agriculture: Applications used technologies, impacts on marketing, limitations, and orientations for future research. *Smart Agriculture Technology,11,* 1-20.

Gadanakis, V. (2024). Advancing farm entrepreneurship and agribusiness management for sustainable agriculture. *Agriculture,14,* 1-7.

Gaonkar, D.S., & Naik, K.R. (2020). Opportunities and challenges in agripreneurship in India. *CLIO An Annual Interdisciplinary Journal of History,6*(8), 112-116.

Ihou, A.F.Y., & Mansingh, J.P. (2025). Pathway to farmers entrepreneurship: the role of entrepreneurial mindset. *Frontier in Sustainability Food System,9,* 1-11.

Ikuemonisan, E., & Akinbola, A.E. (2021). Agripreneurship and agricultural labour market: Agripreneurial intentions among undergraduate students in Ondo State, Nigeria. *European Journal of Agriculture and Food Science,3*(3), 76-85.

Kazunga, I., & Kumburu, N.P. (2023). Agriprenuership as a panacea for food security in Tanzania: A systematic review. *Heliyon,9,*1-9.

Kamakaula, Y. (2024). Sustainable agriculture practices: economic, ecological, and social approach to enhance farmer welfare and environmental sustainability. *West Science Nature and Technology,2*(2), 47-54.

Kangogo, D., Dentoni, D., & Bijman, J. (2025). Determinants of farm resilience to climate change: The role of farmer entrepreneurship and value chain collaborations. *Sustainability,12,* 1- 15.

Khan, N., Ray, R.L., Sargani, G.R., Ihtisham, M., Khayyam, M., & Ismail, S. (2021). Current progress and future prospects of agriculture technology: Gateway to sustainable agriculture. *Sustainability,13,* 1-31.

Malhi, G.S., Kaur, M., & Kaushik, P. (2021). Impact of climate change on agriculture and its mitigation strategies: A review. *Sustainability,13*(3), 1-21.

Manuring, H., Yudoko, G., & Okdinawati, L. (2023). A conceptual framework of supply chain resilience towards sustainability through a service-dominant logic perspective. *Heliyon,9,* 1-13.

Muhie, S.H. (2022). Novel approaches and practice to sustainable agriculture. *Journal of Agriculture and Food Research,10*,1-11

Naz, M., Hashimi, R., Nazeer, S., Raza, H.A., Akhtar, N., Hussain, Z., Khan, B.S., Khan, N.H., & Ahmad, S. (2023). Agripreneurship as a sustainable panacea of food security: An emerging issue. *Journal of Global Innovation and Agricultural Science,11*(1), 91-95.

Nwankwo, S.I., & Ajemunigbohun, S.S. (2023). Assessing farmers' behavioural metrics, participatory influence, and demand-side barriers of agricultural insurance in South-West, Nigeria. *Gusau International Journal of Management and Social Sciences,6*(3), 256-273.

Nwuba, C.O., & Okoli, C.C. (2022). Agripreneurship strategy for wealth creation and sustainable development in Nigeria. *International Journal of Trend in Scientific Research and Development,6*(7), 1006-1010.

Otache, I. (2017). Agriprenuership development: A strategy for revamping Nigeria's economy from recession. *African Journal of Economics and Management Studies,8*(4), 474-483.

Robinson, G.M. (2024). Global sustainable agriculture and land management systems. *Geography and Sustainability,5*, 637-646.

Shahzad, M.F., Khan, K.I., Saleem, S., & Rashid, T. (2021). What factors affect the entrepreneurial intention to start-ups? The role of entrepreneurial skills, propensity to take risks, and innovativeness in open business models. *Journal of Open Innovation: Technology, Market, and Complexity,7*(173), 1-23.

Trevide, Y.P., & Patel, B.I. (2024). A study on the impact of agric-entrepreneurship in the development of the agricultural sector resulting in upliftment of the Indian economy. *The International Journal of Commerce and Management,4*(2), 37-47.

Waluyo, T. (2023). Optimising agribusiness supply chain management in increasing agricultural yield. *Journal of Economics,2*(1), 132-139.

Wiyanto, V.S., & Ellitan, L. (2024). Enhancing competitive through supply chain management strategy. *International Journal of Research,11*(12), 234-247.

Xin, B., Zhang, W., Zhang, W., Lou, C.X., & Shee, H.K. (2023). Strategic entrepreneurship and sustainable supply chain innovation from the perspective of collaborative advantage. *Sustaibility,15*, 1-21.