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Marketing Risk Practices and Financial Performance of SMEs Agricultural Value Chain in Ogun State, Nigeria

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Abstract:

The agricultural sector faces numerous challenges, Small and Medium Scale Enterprises in Agricultural Sector especially in Agricultural Value Chain, need to adopt risk management practices to ensure sustainability and profitability. Based on this, this study aimed at investigating the effect of marketing risk management practices on financial performance of small and medium scale agricultural value chain in Ogun State. Data for the analysis was collected through field surveys filled out by SMEs in the agricultural value chain in Ogun state, with responses gathered from key decision-makers and managers. The study utilized logistic regression for models. The empirical findings indicated that marketing risk management practices and environmental risk management practices were significant determinants of the financial performance of SMEs agricultural value chain. The study concludes that emerges of marketing risk management practices, operational risk management practices and environmental risk management practices were the key determinants of financial performance of SMEs agricultural value chain. The study therefore recommends among others that agricultural SMEs should enhance their market research capabilities to better understand consumer demands and trends, focus on improving operational efficiency through technology adoption, and more so invest in sustainable farming practices such as water and soil conservation.

Keywords:

Agricultural Value Chain, Financial Performance, Marketing Risk, Nigeria

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Introduction

There is danger and uncertainty in every human endeavor. It is widely accepted that the business sector is more vulnerable to risk than other industries. Because all business decisions and entrepreneurial initiatives involve some degree of risk. The same risks that larger businesses face also affect small and medium-sized enterprises (SMEs). Managing those risks is essential in a real business environment with imperfect markets to maintain business continuity and boost value by preventing or reducing risk exposure.

Every organization in the world is approaching every risk from a global perspective. To enhance decision-making, integrated risk management is a continuous process that involves analyzing possible risks at every organizational level and compiling the results at the business level. Since frequent losses like theft, fire, disaster, flood, legal responsibility, injury, or disability can quickly destroy everything an entrepreneur has worked years to establish, risk management is especially important for small enterprises. Such liabilities and losses have the potential to impair daily operations, lower profits, and cause financial hardships severe enough to cripple or bankrupt a small business and hinder its ability to contribute to the country's economic progress.

By raising income levels and ensuring food security, agricultural SMEs play a major role in creating jobs, improving nutrition, and reducing poverty. They are a major force behind economic growth in most developing nations (OECD, 2021; Zaridis et al., 2021). For instance, according to Aceli (2020), agricultural SMEs account for over 90% of all SMEs worldwide, while in Africa, SME agribusinesses are thought to account for over 50% of all SMEs (Aceli, 2020; Ali, 2016; Zada et al., 2021). More than half of all agricultural jobs in Africa are held by agri-SMEs, which accounted for 60% of the continent's food production and trade (Aceli, 2020).

The value chain for agriculture Due to their substantial contributions to income growth, job creation, and food security, SMEs in Nigeria are vital to the nation's economy (OECD, 2021; Zaridis et al., 2021). The foundation of this value chain is made up of small and medium-sized businesses (SMEs), which include crucial operations including farming, processing, distribution, and marketing (Aceli, 2020; Ali, 2016). Procurement, processing, distribution, and transportation of agricultural products are all interconnected steps in the agricultural value chain that eventually guarantee their delivery to final consumers (Food and Agriculture Organization, 2021). Farmer households, manufacturers, wholesalers, retailers, and end users make up this supply-demand network. They all function inside a regulated framework that controls the movement of information, money, and goods (Fu et al., 2010).

To meet present and future demand, boost profitability, and outperform competitors, risk-taking is the tendency to take risks in product development, technological innovations, venturing into the unknown,

embracing significant borrowing, and injecting a large number of resources in uncertain environments (Mason, Floreani, Miani, Beltrame, & Cappelletto, 2015; Lawal, Adegbuyi, Iyiola, Ayoade, & Taiwo, 2018; Kitigin, 2017). Both internal and external company settings present risks (Jeje, 2020). The performance of SMEs is greatly influenced by these settings (Basile, 2012). The internal environment, for instance, may lead to risks related to staff incompetence, limited resource accessibility, bankruptcy of important business partners and stakeholders, contract management failure, and lax adherence to pertinent laws, norms, and standards. However, external environmental concerns might be associated with economic conditions, political dynamics, purchasing power, and legal and tax systems (Belinskaja & Velickiene, 2015). SME competitiveness may be boosted by taking risks (Lawal et al., 2018; Kitigin, 2017; Bakar & Zainol, 2015). For instance, financial performance can be influenced by understanding risk management (Nanthuru et al., 2018).

Price risk is another term for marketing risks. A farmer would suffer from the uncertainty surrounding commodity pricing, the availability of farm produce on the market, and the potential for price fluctuations. Globally, the market factors that determine commodity pricing are mostly outside the control of agricultural farmers. According to a study by Tunde & Adeniyi (2012) carried out in Ogun State, the marketing of agricultural products is adversely affected by the high cost of transportation, poor roads, and lengthy distances from the fields to the market. Similarly, weak road networks, a lack of market data to find opportunities both domestically and internationally, and inadequate logistical infrastructure are the main obstacles to farm-to-market in most other states (Tunde & Adeniyi, 2012).

Agricultural SMEs in Nigeria confront a variety of difficulties, such as poor infrastructure, restricted loan availability, and volatile market pricing (Inuwa and Ali 2024). Strategies to reduce the hazards that farmers and agribusinesses faced, like price swings, unpredictable weather, and insect infestations, were necessary (Agboola, Yusuf & Oluwalaiye 2024). Over the years, Nigerian governments have undertaken several interventions to enhance the performance of Nigerian agricultural firms in recognition of these difficulties and the vital role played by the agricultural sector (Uche, Ekene, and Miebi 2024).

Additionally, by working with foreign organizations and development partners to enhance agricultural infrastructure and market access, the Nigerian government has taken further action to overcome these constraints and help the agricultural industry. For example, the Value Chain Development Programme (VCDP) partnership with the International Fund for Agricultural Development (IFAD) has enhanced market connections for farmers and aided in the construction of rural infrastructure, including roads and storage facilities. It is anticipated that these initiatives will improve the financial performance of SMEs in the agricultural value chain and lessen post-harvest losses.

Due primarily to enduring risks and difficulties, the financial performance of agricultural value chain SMEs in Nigeria, and more especially in Kwara State, is still below ideal despite these interventions

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(Adesope, Fatoki & Oguntoye 2022). These consist of ineffective supply chain logistics, weak infrastructure, and limited access to financing. Additionally, the financial viability of these SMEs is still seriously threatened by the volatility of agricultural markets. Price changes brought on by both domestic and foreign market forces can cause farmers' and agribusiness' incomes to fluctuate significantly, which can affect their capacity to pay back loans and make investments in technologies that increase productivity (Sandhu & Hussain 2021).

However, since research indicates that SMEs that implement comprehensive risk management strategies typically have more stable incomes, higher productivity, and better access to financing, it is anticipated that these risk management practices will have a positive effect on the marketing performance of agricultural value chain SMEs (Boakye, Ankrah, Agyei-Holmes, Baidoo, and Sarpong 2024). The impact of these risk management techniques on the marketing outcomes of the small and medium-sized agricultural value chain in Kwara State, Nigeria, has not, however, been thoroughly investigated. This necessitates the need to examine the influence of risk management practices and marketing performance of SMEs agricultural value chain in Ogun State, Nigeria.

Literature Review

Jay B. Barney is credited with formalizing the Resource-Based View (RBV) in his influential paper "Firm Resources and Sustained Competitive Advantage," published in 1991. According to RBV, businesses can obtain a competitive edge by making use of their special assets and skills. RBV would examine how, in the framework of risk management, good risk management techniques—which are regarded as strategic assets help SMEs in the agricultural value chain achieve better financial results by lowering risks and increasing operational effectiveness (Penrose 1959).

Risk can be divided into four categories: financial, operational, environmental, and marketing. Product price volatility and future market price uncertainty are the main causes of marketing risk. When there are uncertainties about managing cash flows, acquiring money, interest rates, and the capacity to fulfill financial commitments in agriculture under fluctuating economic conditions, financial risk arises (Wolf & Karszes, 2023). According to Nobanee et al. (2023), operational risk arises from unforeseen changes in the business's daily operations, such as equipment failure, human resource errors, and other dispersion of operations. Given the industry's reliance on natural resources and climatic circumstances, environmental risk is exacerbated by weather fluctuation, natural hazards, pests, and illnesses (Glauber et al. 2021). The financial performance of Nigerian SMEs in the agricultural value chain has been negatively impacted by these risks.

Marketing risk management is a key component of financial strategy, especially for SMEs in volatile industries like agriculture (Tunde et al. 2012). Marketing risk is the term used to describe the potential

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losses resulting from changes in market variables, such as commodity prices, interest rates, and foreign exchange rates, which have a direct impact on the financial performance of businesses (Kitigen, 2017). Because agricultural product prices are inherently volatile and global market conditions fluctuate, marketing risk management is essential for SMEs in the agricultural value chain. The concept of marketing risk management entails the identification, evaluation, and application of strategies to mitigate the negative effects of market fluctuations, ensuring the sustainability and profitability of businesses (Lawal et al., 2018).

According to Kotler et al. (2016), strategic pricing is essential in unstable industries like agriculture since it considers both internal costs and external market factors like competition and demand swings. Agricultural SMEs need to implement pricing strategies that are flexible enough to adjust to shifting market conditions. Dynamic pricing systems are promoted by Kaplan and Atkinson (1989), in which prices are continuously modified in response to supply and demand in the market. Businesses can react swiftly to changes in the market thanks to this adaptable strategy, which helps them stay competitive while controlling the risks brought on by price volatility.

The fluctuation of product pricing and the unpredictability of future market prices when choosing to produce a commodity provide major marketing risks for agricultural SMEs. According to research, futures markets are crucial for reducing these risks since they provide instruments for risk management, facilitate investments, and increase market efficiency (Lou, 2024). SMEs in the agriculture sector must control this risk. Several elements of marketing risk management strategies covered in this research include an organization's capacity to make efficient use of its resources and produce income from its primary commercial operations, which is referred to as marketing performance. It is an important metric that shows how well a business is doing overall. Marketing performance is influenced by several important factors, including profitability, operational efficiency, solvency, and growth potential (Yiwei, 2024). Marketing success is a crucial factor in determining the sustainability, growth, and investor appeal of Small and Medium Scale Enterprises (SMEs) in the agricultural value chain. (Akhtar and others, 2024) This performance includes several financial indicators that show the company's stability and health, including profitability, liquidity, leverage, growth, and efficiency (Febriyanti et al., 2024).

To improve marketing performance, it is essential to implement efficient risk management strategies. These procedures involve careful working capital management, budgeting, and marketing planning. Potential marketing risks are reduced, and resources are distributed effectively with the help of a sound marketing strategy. Budgeting aids in keeping spending under control, and good working capital management guarantees that the company has enough cash on hand to pay short-term debts and make investments in long-term expansion (Folajinmi and Peter, 2020).

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In their study titled “Enhancing enterprise risk management (ERM) practices through a risk-driven performance measurement system (PMS): insights from a SME case study,” Bettanti and Lanati (2023) explored the synergies between risk management and performance measurement systems (PMS). A theoretically grounded case study that explores the relationship between risk and performance in small to medium-sized enterprises (SMEs) is presented by the authors, who draw attention to the unrealized potential for alignment between these two areas due to a lack of suitable management tools and organizational structures. The research makes a valuable contribution by offering a conceptual model that connects risk and performance, giving enterprise risk managers a helpful tool to identify risks and support business growth. However, the study's focus on SMEs means that its conclusions might not be applicable to larger corporations or other contexts. Overall, this work clarifies the important relationship between risk management and performance, with a focus on practical consequences for SMEs. Future research might examine the scalability and generalizability of the risk-driven PMS framework across other organizational sizes and industries.

Additionally, Severine and Kessy's work, "Risk Management Practices in Agricultural Financing in Developing Countries: Experience from Selected Commercial Banks in Tanzania," provides empirical support for this claim (2022). The study examines the risks that lenders face, looks at risk management methods, and investigates the relationship between risk reduction tools and agricultural financing. The study's conclusions draw attention to the risks of illnesses and droughts to output. Collateral, appraisal methods, agricultural diversity, group liability, cash deposits and guarantees, loan structuring, and warehouse receipts are some of the strategies used in risk management. Notably, loans to the agricultural sector and risk mitigation methods have a favorable link, according to the Chi-square test. The report does not, however, address more general systemic problems or go into the difficulties experienced by small-scale farmers.

Samuel et al (2019) examined the Extent and Financial Cost of Cassava Postharvest Loss along the Cassava Value Chain in Kwara State, Nigeria. The study calculated the postharvest loss of cassava in Kwara State, pinpointed the contributing factors, and examined the financial ramifications. With an estimated loss of 3.8 tons per hectare, harvesting accounted for about 68% of the loss. The monetary impact was estimated to be $300 per hectare. Expected harvest quantity, household size, and farmer age were factors that influenced loss. These elements should be considered in loss reduction strategies to help cassava growers and processors. The study's focus on Kwara State, a particular region, may not accurately reflect larger cassava production contexts, which is one of its limitations.

Gajere (2023) considered Strategic Orientation and Performance of SMEs in Nigeria: Moderating Role of Competitive Intensity. The study explores the relationship between strategic orientation and SME performance, including the moderating effect of competitive intensity. While the report provides

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significant insights, it's necessary to realize its limitation: the study focuses primarily on Nigerian SMEs, thereby restricting generalizability to other contexts.

Offiong et al (2019) examined the Financial Risk and Performance of Small and Medium Enterprises in Nigeria. The study investigates the impact of financial risk on the performance of SMEs. The authors use data from the Central Bank of Nigeria to show a weak and negative correlation between financial risk and the long-term success of SMEs. Exchange rate risk, liquidity risk, interest rate risk, and inflation risk, however, have a big, short- and long-term impact on small and medium-sized businesses. To improve SME performance, the study emphasizes how crucial it is to manage financial risk. This study's exploratory research design is its main drawback, as it might not have captured all pertinent aspects influencing SMEs.

Methodology

The study focused on financial performance of SMEs agricultural value chain in Ogun State, Nigeria, the population of this study is all SMEs agricultural value chain in Ogun Central, Ogun East, and Ogun West senatorial districts that are registered agricultural SMEs. According to Nigeria Directory (2024), there are 850 agriculture and agro-allied SMEs in Ogun State.

S/N	Name	Population
1	Agric Consulting	25
2	Agric Farms	435
3	Agricultural Equipment	40
4	Agro Allied Servicers	73
5	Fertilizer, Manufacture and Sales	10
6	Fish Import and Export	6
7	Fisheries and Aquaculture	112
8	Livestock Feeds and Feed Millers	59
9	Poultry Farms and Hatcheries	82
10	Veterinary Clinics Hospital	8
	Total	850

Table 1: Agric-SMEs Population in Ogun State

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The population for the quantitative research design is 850agric-SMEs in Ogun State as of August 2024. To determine the sample size, a formula which was invented by Yamane, (1967) was used. The application of the formula proposed by Yamane (1967) is to provide a simplified formula to calculate the sample size. Therefore, the formula assumed a 95% confidence level and P = .05. The selected sample size arrived at by the following formula:

$$n = \frac{N}{1 + N(e)^2}$$

Where:

n= sample size

N: is the population size

e: The desired level of Precision e = 0.05 is assumed.

Sample Size for Number of Companies

$$n = \frac{850}{1 + 850\ (.05)^2}$$

$$n = \frac{850}{1+2.125} = 272$$

n = 272Agric-SMEs

The sample size is therefore 272 and these 272 Agric-SMEs were cut across the senatorial districts of Ogun State. Using the proportionate allocation of Agric-SMEs in Ogun State based on their relative contributions to the agricultural sector of the state. State has 3 senatorial districts: Ogun East, Ogun Central and Ogun West with a contribution of 35%, 40% and 25% respectively (Ogun State Data, 2020).

S/N	SenatorialDistrict	Production Areas	Proportionate Allocation Based on Sample Size
1.	Ogun East	Ijebu East, Ijebu North East, Odogbolu, and Ikenne Local Government Areas	35% of 272 = 95
2.	Ogun Central	Abeokuta North, Abeokuta South, Ewekoro and Ifo Local Government Areas	40% of 272 = 109
3.	Ogun West	Yewa South, Yewa North, Imeko Afon and Ipokia LGA	25% of 272 = 68

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			272

Table 2: Proportionate Allocation Based on Senatorial District Contributions to the Agricultural Sector

The data used for this study was primary data obtained through the administration of a structured questionnaire. The research instrument employed to obtain the data used in this study is a structured questionnaire. The questionnaire was divided into five (5) parts. Part I deals with the demographic info of the respondents while Part II - V focused on the research questions raised in chapter one. This structured questionnaire was given to the purposively selected owners and employees of the agric-SMEs to allow for a degree of representation. This well-structured questionnaire was given to the respondents who are literate and the procedure for completing the questionnaire was explained to them.

The model specification shows that internal environment, objective determination, identification of risk events, risk assessment, risk response, activity control information and communication, and monitoring were removed in line with the gap identified in the empirical review and objective of this study while financial risk, marketing risk, operational risk, and environmental risk were introduced into the model. Hence, the modified model from Yakob*et al.* (2019) is expressed as follows:

$Y_i = f\ (MR_i, ER_i)$ *3.1*

$Y_i = \beta_0 + \beta_2 MR_i + \beta_4 ER_{it} + \mu_{it}$ 3.2

Where: Y = financial performance of SMEs-Agric “i” (Dependent variable)

MR = Market Risk of SMEs-Agric “i” (Independent variable)

ER = Environmental Risk of SMEs-Agric “i” (Independent variable)

β_o = Intercept

$\beta_1 - \beta_4$ = Regression Coefficients

ε = Error Term

i = Agric-SMEs (cross sectional units)

This study first constructed model 1 - 2 to examine the marketing risk and environmental risk of risk management practices and marketing performance of agricultural value chain SMEs in Ogun State. This is constructed separately across the specified sampled parameters. Thus, the econometric models are explicated as follows:

Model One

Marketing risk and financial performance of agricultural value chain SMEs in Ogun State

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$Y_i = f\ (MRI_i, MD_i, CM_i, QCC_i)$

$Y_i = \beta_0 + \beta_1 MRI_i + \beta_2 MD_i + \beta_3 CM_{it} + \beta_4 QCC_{it} + \mu_{it}$ 3.3

Where:

Y = financial performance of SMEs-Agric "i" (Dependent variable)

MRI = Market research Information of SMEs-Agric "i" (Independent variable)

MD = Market Diversification of SMEs-Agric "i" (Independent variable)

CM = Contract Marketing of SMEs-Agric "i" (Independent variable)

QCC = Quality Control and Certification of SMEs-Agric "i" (Independent variable)

β_0 = Constant Coefficient

β_{1-4} = Parameters of the estimate

i = SMEs-Agric (cross sectional units)

ε_i = Error term (5% significance level)

Model Two

Environmental risk and financial performance of agricultural value chain SMEs in Ogun State

$Y_i = f\ (SWC_i, CMP_i, NM_i, CCA_i)$

$Y_i = \beta_0 + \beta_1 SWC_i + \beta_2 CMP_i + \beta_3 NM_{it} + \beta_4 CCA_{it} + \mu_{it}$ 3.6

Where:

Y = financial performance of SMEs-Agric "i" (Dependent variable)

SWC = Soil and Water Conservation of SMEs-Agric "i" (Independent variable)

CMP = Chemical Management and Pesticide of SMEs-Agric "i" (Independent variable)

NM = Nutrition Management of SMEs-Agric "i" (Independent variable)

CCA = Climate Change Adaptation of SMEs-Agric "i" (Independent variable)

β_0 = Constant Coefficient

β_{1-4} = Parameters of the estimate

i = SMEs-Agric (cross sectional units)

ε_i = Error term (5% significance level)

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Results and Discussion

Items	Mean	Standard deviation	Skewness	Kurtosis	Cronbach's alpha	Convergent Validity
Market Research Information						
MRI1	4.20	0.76	-0.881	0.796	0.868	0.839
MRI2	4.07	0.878	-0.413	-0.962		
MRI3	3.97	0.867	-0.372	-0.719		
MRI4	4.05	0.801	-0.449	-0.423		
Market Diversification						
MD1	3.77	0.98	-0.477	-0.318	0.844	0.810
MD2	3.78	0.998	-0.316	-0.589		
MD3	3.85	0.879	-0.393	0.113		
MD4	4.07	0.904	-0.963	0.916		
Contract Marketing						
CM1	3.64	0.939	-0.244	0.177	0.774	0.725
CM2	3.54	0.977	-0.303	-0.526		
CM3	3.80	0.965	-0.519	0.245		
CM4	3.97	1.002	-0.692	0.176		
Quality Control and Certification						
QCC1	3.97	0.95	-0.861	0.423	0.855	0.824
QCC2	3.94	0.849	-0.654	0.741		
QCC3	3.75	0.99	-0.446	-0.002		
QCC4	3.66	0.812	-0.354	0.587		

Table 3: Components of Marketing Risk Management Practices

Explanatory Notes: MRA1 to MRA4 are items related to Market Research Information; MD1 to MD4 refer to items on Market Diversification; CM1 to CM4 represent items under Contract Marketing; QCC1 to QCC4 are items concerning Quality Control and Certification.

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Table 3 presents the summary statistics of the items in each category of Market Research Information (MRI), Market Diversification (MD), Contract Marketing (CM), and Quality Control and Certification (QCC). It also presents the reliability and validity of each category using Cronbach's Alpha, inter-class correlation, and convergent validity. In total, 16 items were used to measure marketing risk management practices in Table 4.1, which were further broken down with each component containing four items.

In the Market Research Information component, the item with the highest mean score is MRI1 (M = 4.20, S.D = 0.76), followed by MRI4 (M = 4.05, S.D = 0.801), MRI2 (M = 4.07, S.D = 0.878), and MRI3 (M = 3.97, S.D = 0.867). All mean values are above the midpoint of 3, indicating that most participants agree with the items measuring market research information. The Cronbach's Alpha of 0.868 and convergent validity of 0.839 indicate that the items provide a very reliable measure of market research information practices in the context of marketing risk management.

For Market Diversification, the item with the highest mean score is MD4 (M = 4.07, S.D = 0.904), followed by MD3 (M = 3.85, S.D = 0.879), MD2 (M = 3.78, S.D = 0.998), and MD1 (M = 3.77, S.D = 0.98). Since all mean values are above the midpoint of 3, most respondents agreed with the assertions regarding market diversification. Cronbach's Alpha of 0.844 and convergent validity of 0.810 indicate that the items offer a good and reliable measure of market diversification within marketing risk management practices.

In the Contract Marketing component, the item with the highest mean score is CM3 (M = 3.80, S.D = 0.965), followed by CM4 (M = 3.97, S.D = 1.002), CM1 (M = 3.64, S.D = 0.939), and CM2 (M = 3.54, S.D = 0.977). The mean values for these items are all above the midpoint of 3, indicating general agreement with the questions related to contract marketing. The Cronbach's Alpha of 0.774 and convergent validity of 0.725 suggest that while the items have acceptable reliability, there may be room for further improvement in ensuring internal consistency.

For Quality Control and Certification, the item with the highest mean score is QCC1 (M = 3.97, S.D = 0.95), followed by QCC2 (M = 3.94, S.D = 0.849), QCC3 (M = 3.75, S.D = 0.99), and QCC4 (M = 3.66, S.D = 0.812). All mean values are above the midpoint of 3, suggesting that most participants agree with the items measuring quality control and certification. Cronbach's Alpha of 0.855 and convergent validity of 0.824 indicate that these items are a reliable measure of quality control and certification practices in marketing risk management.

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Items	Mean	Standard deviation	Skewness	Kurtosis	Cronbach's alpha	Convergent Validity
Soil and Water Conservation						
SWC1	3.57	1.19	-0.585	-0.353	0.904	0.883
SWC2	3.71	1.183	-0.582	-0.54		
SWC3	3.63	0.953	-0.713	1.027		
SWC4	3.58	1.129	-0.591	-0.176		
Chemical Management and Pesticide						
CMP1	3.69	0.834	0.481	-1.117	0.848	0.816
CMP2	3.83	0.807	-0.046	-0.796		
CMP3	3.82	0.923	-0.236	-0.366		
CMP4	3.94	0.919	-0.669	0.249		
Nutrition Management						
NM1	3.55	1.291	-0.731	-0.362	0.933	0.919
NM2	3.46	1.104	-0.436	-0.246		
NM3	3.64	1.138	-0.526	-0.183		
NM4	3.36	1.22	-0.543	-0.332		
Climate Change Adaptation						
CCA1	3.47	1.240	-0.741	-0.227	0.918	0.900
CCA2	3.56	1.181	-0.524	-0.709		
CCA3	3.68	1.065	-0.757	0.207		
CCA4	3.76	1.048	-1.057	1.068		

Table 4: Components of Environmental Risk Management Practices

Explanatory Notes: SWC1 to SWC4 are items related to Soil and Water Conservation; CMP1 to CMP4 refer to items on Chemical Management and Pesticide; NM1 to NM4 represent items on Nutrition Management; CCA1 to CCA4 are items concerning Climate Change Adaptation.

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Volume: 06 Issue: 02 Year: 2025
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Table 4 presents the summary statistics of the items in each category of Soil and Water Conservation (SWC), Chemical Management and Pesticide (CMP), Nutrition Management (NM), and Climate Change Adaptation (CCA). It also presents the reliability and validity of each category using Cronbach's Alpha, inter-class correlation, and convergent validity. In total, 16 items were used to measure environmental risk management practices in Table 4.2, which were further broken down with each component containing four items.

For Soil and Water Conservation, the item with the highest mean score is SWC2 (M = 3.71, S.D = 1.183), followed by SWC3 (M = 3.63, S.D = 0.953), SWC4 (M = 3.58, S.D = 1.129), and SWC1 (M = 3.57, S.D = 1.19). All mean values are above the midpoint of 3, suggesting general agreement with the items on soil and water conservation practices. The Cronbach's Alpha of 0.904 and convergent validity of 0.883 indicate excellent internal consistency and reliability for the items in measuring soil and water conservation practices.

For Chemical Management and Pesticide, the item with the highest mean score is CMP4 (M = 3.94, S.D = 0.919), followed by CMP3 (M = 3.82, S.D = 0.923), CMP2 (M = 3.83, S.D = 0.807), and CMP1 (M = 3.69, S.D = 0.834). All mean values exceed the midpoint of 3, indicating general agreement with the items measuring chemical management and pesticide practices. The Cronbach's Alpha of 0.848 and convergent validity of 0.816 suggest that the items are reliable measures of chemical management and pesticide practices.

For Nutrition Management, the item with the highest mean score is NM3 (M = 3.64, S.D = 1.138), followed by NM1 (M = 3.55, S.D = 1.291), NM2 (M = 3.46, S.D = 1.104), and NM4 (M = 3.36, S.D = 1.22). All mean values are above 3, indicating that most respondents agree with the questions on nutrition management practices. The Cronbach's Alpha of 0.933 and convergent validity of 0.919 indicate excellent internal consistency and reliability of the items in measuring nutrition management practices.

For Climate Change Adaptation, the item with the highest mean score is CCA4 (M = 3.76, S.D = 1.048), followed by CCA3 (M = 3.68, S.D = 1.065), CCA2 (M = 3.56, S.D = 1.181), and CCA1 (M = 3.47, S.D = 1.240). All mean values exceed 3, indicating that most participants agree with the items on climate change adaptation. The Cronbach's Alpha of 0.918 and convergent validity of 0.900 demonstrate excellent internal consistency and reliability for the items measuring climate change adaptation practices.

More specifically, Market Research Information allows businesses to gather and analyze data on consumer trends, competitor activities, and market conditions (Chaffey & Smith, 2022). This enables agricultural SMEs to make informed decisions, tailor their offerings, and mitigate the risks of market misalignment, thereby boosting profitability (West, Ford, & Ibrahim, 2023). Studies such as Mason &

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Harrison (2021) emphasize that market research enhances competitive advantage by enabling businesses to understand customer needs, predict demand, and adjust strategies accordingly.

Market Diversification reduces dependency on a single market by exploring new customer segments, geographical areas, or product lines (Verbeke, 2021). This strategic approach spreads risk and provides opportunities for growth, making businesses more resilient to market fluctuations and expanding revenue streams (Grant, 2022). Empirical research by Hoskisson et al. (2023) supports that diversification enhances firm sustainability and financial performance by reducing exposure to industry-specific shocks. Contract Marketing involves formal agreements and partnerships that help secure sales and reduce uncertainties (Cavusgil, Knight, & Riesenberger, 2022). By establishing long-term contracts with buyers or distributors, agro SMEs can stabilize their cash flow and build trust with stakeholders (Hill, Jones, & Schilling, 2023). This ensures consistent demand for their products and improves financial stability, as supported by Gereffi & Lee (2023), who found that contract-based relationships foster long-term cooperation and risk reduction in business transactions.

The findings on marketing risk management practices can be linked to the Resource-Based View (RBV), which emphasizes that firms gain a competitive advantage by utilizing valuable and unique resources. In the case of agricultural SMEs, marketing risk management practices such as robust market research, product diversification, and targeted marketing strategies, are key resources that enhance the firm's ability to navigate market uncertainties. Agro SMEs can leverage their unique market insights, brand reputation, and customer relationships to strengthen their competitive position through effective management of marketing risks. These resources are valuable and not easily replicated by competitors, allowing the firm to adapt to market changes, reduce exposure to price volatility, and tap into new market segments. It aligns with findings from studies such as those by Subagio & Saraswati (2022), who explored the impact of enterprise risk management on firm value, and Apaloo et al. (2022), who found that risk management practices positively influence SME performance. Furthermore, this study addresses gaps identified in earlier research, such as the limited geographical scope of studies (Gajere, 2023; Offiong et al., 2019) by providing empirical evidence from Ogun State, Nigeria.

The findings revealed that environmental risk management significantly influences the financial performance of SMEs agricultural value chain in Ogun State. This is driven by the ability to address various environmental challenges that impact production, operations, and profitability (Nelson, Lamb & Malek, 2023). Environmental risks such as climate change, resource scarcity, pollution, and natural disasters can significantly disrupt agricultural activities, leading to reduced yields, higher operational costs, and lower market competitiveness. However, when SMEs implement effective environmental

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risk management strategies, they reduce their vulnerability to such disruptions and create more resilient operations (Lemos, Boyd, & Tompkins, 2023).

Addressing these environmental challenges enables SMEs to optimize resource use, minimize waste, and improve the long-term sustainability of their operations (United Nations Environment Programme, 2022). These practices not only protect businesses from external shocks but also contribute to cost savings and efficiency (GIZ, 2023). Moreover, businesses that prioritize environmental sustainability are often more attractive to consumers, investors, and regulatory bodies, opening doors to new market opportunities and financial support (World Bank, 2023).

Conclusion and Recommendations

Growing interest has been shown in the function of risk management techniques in SMEs' agricultural value chains, particularly in emerging nations like Nigeria. Since the agriculture industry faces several obstacles, SMEs have implemented risk management strategies to increase profitability and sustainability. This study examines the influence of risk management practices and marketing performance of SMEs agricultural value chain. The specific impact of risk management strategies has not received much attention in the literature, despite the topic's increasing significance. This study aims to fill that knowledge gap. The study determines how marketing, financial, operational, and environmental risk management techniques affect the marketing performance of SMEs in the agricultural value chain.

This study examines the impact of marketing risk management practices on the marketing performance of SMEs agricultural value chain, with a particular focus on Nigerian enterprises. The study emphasizes the significance of implementing comprehensive risk management techniques and offers empirical evidence of the substantial impact these risk management practices have on SMEs' overall operational efficiency, sustainability, and profitability.

These recommendations are offered to enhance the marketing performance of agricultural value chain SMEs in Nigeria considering the study's findings and the conclusions that resulted from them.

1. SMEs should increase their market research capacity to better understand consumer demand and trends. Implementing focused marketing techniques and diversifying their product range can decrease the risks associated with market volatility.
2. SMEs should prioritize implementing technology to increase operational efficiency. Reducing operational disruptions can be achieved by implementing automated solutions for supply chain optimization and inventory management. Further improving SMEs' resilience and financial performance would need routinely evaluating and upgrading risk management procedures, which should include educating staff on potential hazards.

3. SMEs ought to spend money on environmentally friendly farming methods including conserving soil and water. SMEs may protect long-term productivity by using climate-resilient farming practices, which lessen their impact on the environment.

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