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## RISK MANAGEMENT PRACTICES AND FINANCIAL PERFORMANCE OF SMALL AND MEDIUM SCALE AGRICULTURAL VALUE CHAIN IN KWARA STATE, NIGERIA.

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### **Abstract**

*The role of risk management practices in agricultural value chains has generated increasing attention, especially in developing economies like Nigeria. Sequel to this, this study aimed at examining the effect of risk management practices on financial performance of small and medium scale agricultural value chain in Kwara State, Nigeria. Data for the analysis was collected through field surveys filled out by SMEs in the agricultural value chain in Kwara state, with responses gathered from key decision-makers and managers. The study utilized logistic regression for the models. The empirical findings indicated that financial risk management practices and operational risk management practices were significant determinants of the financial performance of SMEs agricultural value chain Kwara State. These components were shown to positively impact profitability and operational sustainability. The study concludes that emerges of financial risk management practices and operational 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.*

### **INTRODUCTION**

Every organization is susceptible to unforeseen negative events that could cost it money or force it to shut down. Because of this, the idea that risk exists everywhere and that everyone must manage it has spread widely. Due to the increasing rise of globalization, modern organizations now confront a greater range of risks (Linda, 2024). These days, the widespread use of digital technology frequently contributes to the formation of new dangers, and risk specialists have labeled climate change a "threat multiplier". Businesses across a range of industries soon faced an existential threat from the COVID-19 epidemic. To address the threats posed by the epidemic, several people made quick changes. However, businesses are still battling some of those hazards moving forward, such as the continuous requirement to oversee remote or hybrid work settings and the ways to lessen supply networks' susceptibility to interruptions (Linda, 2024).

In most developing nations, agricultural SMEs are a major force behind economic expansion. By raising income levels and ensuring food security, they also play a major role in creating jobs, improving nutrition, and reducing poverty (OECD, 2021; Zaridis et al., 2021). Agricultural SMEs,

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for instance, account for over 90% of all SMEs worldwide (Aceli, 2020), while SME agribusinesses are thought to account for over 50% of all SMEs in Africa (Aceli, 2020; Ali, 2016; Zada et al., 2021). In terms of food production and commerce, the proportion of Agri-SMEs in Africa hit a 60% barrier, accounting for over 50% of all agricultural jobs in the continent (Aceli, 2020).

Studies have highlighted the significance of effective agricultural value chains, especially in developing nations where they aid in bridging the gap between rural producers and urban markets (Diabat et al., 2012; Estes, Alemany, & Ortiz, 2018). Addressing market inefficiencies, increasing food supply, and stabilizing food prices all depend on a healthy agricultural value chain (Selvanayaki, 2016; Karadag, 2015). From farm to fork, encompassing production, processing, trade, distribution, and consumption, agri-food supply chains (AFSCs) are essential to the agricultural production process (Food and Agriculture Organization, 2021). Maintaining the effectiveness and resilience of AFSCs is essential in a business environment that is becoming more and more unstable, given their role in guaranteeing the availability of sustainable, reasonably priced, safe, and sufficient food, feed, fiber, and fuel.

SMEs' performance is greatly influenced by their capacity and willingness to start and carry out changes, especially by implementing successful entrepreneurial strategies. Taking risks is one of these tactics. To affect their profitability, SMEs must control risks (Nanthuru, Pingfeng, Guihua, & Mkonya, 2018). 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, 2021; Lawal, Adegbuyi, Iyiola, Ayoade, & Taiwo, 2018; Kitigin, 2017).

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 risks that farmers and agribusinesses faced, like price swings, unpredictable weather, and insect infestations, were necessary (Agbola, Yusuf, and 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). One of the most notable of these is the Agricultural Credit Guarantee Scheme Fund (ACGSF), which was created in 1977 and offers guarantees on bank loans to farmers. By encouraging financial institutions to give the agricultural sector greater credit, this program aimed to lower the financial risks that farmers and agribusinesses faced. Furthermore, to improve processor capacity utilization and boost agricultural output, the Central Bank of Nigeria (CBN) launched the Anchor Borrowers' Programme (ABP) in 2015 with the goal of establishing financial ties between smallholder farmers and respectable large-scale processors. One such project is the 2011 launch of the Nigeria Incentive-Based Risk Sharing System for Agricultural Lending (NIRSAL). By offering agribusinesses insurance, loan guarantees, and technical support, NIRSAL seeks to reduce risk along the agricultural value chain. This project has played a significant role in encouraging the adoption of modern farming methods and improving agricultural SMEs' access to financing (Tong and Yang 2021).

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Despite these measures, Nigerian agricultural value chain SMEs' financial performance is still below par, particularly in Kwara State, mostly because of enduring risks and difficulties (Adesope, Fatoki, and Oguntoye 2022). These include insufficient financial resources, subpar infrastructure, and ineffective supply chain management. Additionally, there are still serious dangers to these SMEs' financial stability from the volatility of agricultural markets. For farmers and agribusinesses, price swings caused by both domestic and foreign market dynamics can result in significant income unpredictability, which can affect their capacity to pay back loans and make investments in technologies that increase productivity (Sandhu and Hussain 2021).

The risk management process is essential to a corporation because it gives the organization the resources it needs to recognize and control potential risks. A company that practices risk management is better equipped to make informed decisions. When a company's approach to managing possible obstacles is continuously evaluated and develops strategies to deal with them, its chances of success rise. The literature on risk management states that better risk management practices will boost the company's financial performance. Businesses may guarantee a greater understanding of the benefits of applying to companies that have the most cutting-edge risk management techniques to outperform their rivals. risk management techniques by merging performance and risk management

Given that 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 financial performance of agricultural value chain SMEs (Boakye, Ankrah, Agyei-Holmes, Baidoo, and Sarpong 2024). The impact of these risk management techniques on the financial results 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 financial performance of SMEs agricultural value chain in Kwara State, Nigeria.

## LITERATURE REVIEW

Agency theory was primarily developed by Michael C. Jensen and William H. Meckling in their seminal paper "Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure," released in 1976. They built upon earlier research by economists like William Baumol and Ronald Coase. The relationship between principals, or owners, and agents, or managers, and how risk management techniques affect their alignment of interests, are at the heart of agency theory. By ensuring that managers make decisions that are in line with the owners' goals, it examines how risk management techniques can reduce agency costs and enhance financial performance (Van Thiel, Genugten, and Voorn, 2020). Effective risk management techniques, however, can aid in bringing principals' and agents' interests into alignment, according to agency theory. By employing risk management techniques, companies can lower agency costs in three ways: By giving principals better information about risks and how to manage them; by coordinating incentives and pay plans to encourage agents to make choices that optimize shareholder wealth; and by keeping an eye on and managing agents' behavior to make sure they behave in the company's best interests (Afifawati, Khasanah, and Giovanni, 2023; Gwala and Mashau 2023)

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There are four types of risk: financial, operational, environmental, and marketing. Product price fluctuations and the unpredictability of future market prices are the main causes of marketing risk. According to Wolf and Karszes (2023), financial risk arises when there are uncertainties around the management of cash flows, the acquisition of capital, interest rates, and the capacity to fulfill financial commitments under fluctuating economic conditions in the agricultural sector. Unpredictable changes in the business's daily operations, such as equipment breakdown, human resource errors, and other distribution of operations, give rise to operational risk (Nobanee et al., 2023). The industry's reliance on natural resources and climate conditions makes it especially vulnerable to environmental risk from pests, illnesses, weather variability, and natural hazards (Glauber et al. 2021). The financial performance of SMEs in Nigeria's agricultural value chain has suffered because of these concerns. Financial performance includes an organization's capacity to make efficient use of its resources and produce income from its main operations. It is a vital indicator of a business's general well-being and performance. According to Yiwei (2024), several factors are important in assessing financial performance, including profitability, operational efficiency, solvency, and growth potential. The financial performance of SMEs in the agricultural value chain is a crucial factor in determining their viability, expansion, and investor appeal. (Akhtar & colleagues, 2024) According to Febriyanti et al. (2024), this performance includes several financial variables that show the stability and health of the company's finances, including profitability, liquidity, leverage, growth, and efficiency.

Improving financial performance requires effective financial risk management techniques. Working capital management, budgeting, and careful financial planning are some of these procedures. Efficient resource allocation and the reduction of any financial risks are guaranteed by sound financial planning. While efficient working capital management guarantees that the company has the liquidity to pay its short-term obligations and make investments in long-term growth, budgeting aids in keeping spending under control (Folajinmi and Peter, 2020). Apaloo et al. (2022) investigated the impact of risk management practices on the performance of Small and Medium Scale Enterprises (SMEs). Using a sample size of 285 SMEs, it was discovered that the lack of awareness among owners regarding the identification, evaluation, treatment, and monitoring of operational risks is the main reason why risk management is not commonly used in SME enterprises. Performance and risk management practices were found to be positively correlated, indicating that effective risk management may have an impact on SME performance.

Additionally, Yakob et al. (2020) investigated the impact of enterprise risk management practices on the performance of SMEs. The study investigates how the performance of small and medium-sized businesses (SMEs) is affected by enterprise risk management, or ERP. The authors' multiple regression study revealed that ERM has a considerable impact on business performance, especially when it comes to objective determination. Nonetheless, the report admits its limits in assessing SMEs' ERM procedures. In general, SME managers can improve SME performance by using effective risk management to help them achieve business goals, increase firm value, and maximize profitability. The performance and financial management practices of the small and medium-sized poultry industry in Ogun State, Nigeria, were investigated by Folajinmi and Peter (2020). The study looks on the poultry industry's financial management procedures. Profitability is found to be greatly impacted by procedures including working capital management, capital structure management, and annual budgeting. It is noteworthy, nonetheless, that the study does not explore additional aspects that might influence the performance of the chicken business.

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Adesiji (2022) discussed the Assessment of Farmers’ Participation in the Value Chain of Rice Entrepreneurial Activities in Kwara State, Nigeria. The study sought to determine the knowledge sources accessible to rice entrepreneurs, characterize their mindset on entrepreneurship, and evaluate their involvement in the value chain. The results showed that the respondents' primary information sources were radio and other business owners. Most participants viewed rice entrepreneurship favorably, with a primary concentration on marketing and processing. Nonetheless, the report suggests government initiatives to encourage more women to start their own rice businesses and to use agricultural extension agents' proactive services. This study's concentration on Kwara State is its main drawback, and it might not accurately reflect the larger context of rice value chains in Nigeria.

Adesope et al (2022) considered Value Chain and Profitability Analysis of Shea Butter Production in Kwara State, Nigeria. The study evaluated the economic feasibility and value chain of Kwara State's shea butter production. The researchers collected data from 247 individuals in the State's shea butter value chain industry using a well-designed questionnaire. According to the study, women made up most shea nut processors and marketers (92%), whereas males made up most shea nut collectors (54.7%). The research area's shea nut harvesting, processing, and sales were profitable, according to the profitability analysis. Nonetheless, the primary obstacles encountered by collectors were the removal of shea trees (82.7%) and the absence of contemporary processing tools for processors and marketers. The authors advise giving rural women who produce shea butter access to financing facilities and contemporary equipment to increase output.

## METHODOLOGY

Quantitative design was adopted as the research design in this study. With the focus of this study being financial performance of SMEs agricultural value chain in Kwara State, Nigeria, the population of this study is all SMEs agricultural value chain in Kwara Central, Kwara South, and Kwara North senatorial districts that are registered agricultural SMEs. According to Nigeria Directory (2024), there are 839 agriculture and agro-allied SMEs in Kwara State.

Table 1: Agric-SMEs Population in Kwara State

S/N	Name	Population
1	Agric Consulting	23
2	Agric Farms	440
3	Agricultural Equipment	36
4	Agro Allied Servicers	71
5	Fertilizer, Manufacture and Sales	7
6	Fish Import and Export	5
7	Fisheries and Aquaculture	111
8	Livestock Feeds and Feed Millers	58
9	Poultry Farms and Hatcheries	82
10	Veterinary Clinics Hospital	6
	<b>Total</b>	839

Source: Nigerian Directory, (2025)

The population for the quantitative research design is the 839agric-SMEs in Kwara State as at 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

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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**

$$n = \frac{839}{1 + 839 (.05)^2}$$

$$n = \frac{839}{1+2.0975} = 270.86$$

n = 271 Agric-SMEs

The sample size is therefore 271 and these 271 Agric-SMEs were cut across the senatorial districts of Kwara State. Using the proportionate allocation of Agric-SMEs in Kwara State based on their relative contributions to the agricultural sector of the state. Kwara State has 3 senatorial districts: Kwara North, Kwara Central and Kwara South with a contribution of 40%, 30% and 30% respectively (KWMARD, 2020). See Table 3.2 presents the proportionate allocation based on senatorial districts contributions to the agricultural sector of Kwara state.

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

S/N	Senatorial District	Production Areas	Proportionate Allocation Based on Sample Size
1.	Kwara North	Baruten, Edu, Pategi, and Kaima Local Government Areas	40% of 271 = 109
2.	Kwara Central	Ilorin West, Ilorin East, Ilorin South, and Asa Local Government Areas	30% of 271 = 81
3.	Kwara South	Irepodun, Ekiti, Isin, Oke-Ero, and Oyun LGA	30% of 271 = 81
			<b>271</b>

Author’s Compilation and Computation, (2025)

Specified here is the model of this study to examine the risk management practices on financial performance of SMEs agricultural value chain in Kwara State, Nigeria. The model specification follows the objective of this study, which requires regression models to be achieved. The presentation of data was then done in a prose form. To examine the risk management practices on financial performance of SMEs agricultural value chain in Kwara State, Nigeria, the study adopted and modified model from Yakobet *al.* (2019). The original model is stated as follows:

$$PRES_i = f(PD_i, PO_i, PPR_i, PR_i, TBR_i, KA_i, MK_i, P_i, U_i, SP_i, SM_i, SZ_i)$$

$$PRES_i = a + b_1PD_i + b_2PO_i + b_3PPR_i + b_4PR_i + b_5TBR_i + b_6KA_i + b_7MK_i + b_8P_i + b_9U_i + b_{10}SP_i + b_{11}SM_i + b_{12}SZ_i + \varepsilon_i \dots\dots\dots 3.1$$

Where:  $PRES_i$  is representing SME performance (dependent variable) while enterprise risk management measurement consists of 8 elements which are  $PD_i$ : Internal Environment;  $PO_i$ : Objective Determination;  $PPR_i$ : Identification of Risk Events;  $PR_i$ : Risk Assessment;  $TBR_i$ : Risk Response;  $KA_i$ : Activity Control;  $MK_i$ : Information and Communication; and  $P_i$ : Monitoring. Control variables are characterized by  $U_i$ : Firm Age;  $SP_i$ : Legal Status;  $SM_i$ : Capital Source;  $SZ_i$ : Size are the control variables. Finally,  $a$  is the regression constant,  $b$  refers to regression coefficient and  $\varepsilon_i$  represents the error term.

From the original model 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 and operational risk were introduced into the model. Hence, the modified model from Yakobet *al.* (2019) is expressed as follows:

$$Y_i = f(FR_i, OR_{it})$$

$$Y_i = \beta_0 + \beta_1FR_i + \beta_2OR_{it} + \mu_{it} \dots\dots\dots 3.2$$

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

FR = Financial Risk of SMEs-Agric “i” (Independent variable)

OR = Operational Risk of SMEs-Agric “i” (Independent variable)

$\beta_0$  = Intercept

$\beta_1 - \beta_4$  = Regression Coefficients

$\varepsilon$  = Error Term

i = Agric-SMEs (cross sectional units)

This study first constructed model 1 & 2 to examine the financial risk and operational risk of risk management practices and financial performance of agricultural value chain SMEs in Kwara State. This is constructed separately across the specified sample parameters. Thus, the econometric models are explicated as follows:

**Model One**

Operational risk and financial performance of agricultural value chain SMEs in Kwara State

$$Y_i = f(RC_i, OEP_i, HRRM_i, PLM_i)$$

$$Y_i = \beta_0 + \beta_1RC_i + \beta_2OEP_i + \beta_3HRRM_{it} + \beta_4PLM_{it} + \mu_{it} \dots\dots\dots 3.5$$

Where:

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

RC = Regulatory Compliance of SMEs-Agric “i” (Independent variable)

OEP = Operational Efficiency and Productivity of SMEs-Agric “i” (Independent variable)

HRRM = Human Resource Risk Management of SMEs-Agric “i” (Independent variable)

PLM = Post-harvest lost management of SMEs-Agric “i” (Independent variable)

$\beta_0$  = Constant Coefficient

$\beta_{1-4}$  = Parameters of the estimate

i = SMEs-Agric (cross sectional units)

$\varepsilon_i$  = Error term (5% significance level)

**Model Two**

Financial risk and financial performance of agricultural value chain SMEs in Kwara State

$$Y_i = f(RAP_i, WCM_i, FAPM_i, CRM_i)$$

$$Y_i = \beta_0 + \beta_1RAP_i + \beta_2WCM_i + \beta_3FAPM_{it} + \beta_4CRM_{it} + \mu_{it} \dots\dots\dots 3.3$$

Where:

- Y = Financial Performance of SMEs-Agric “i” (Dependent variable)  
 RAP = Risk Assessment and Planning of SMEs-Agric “i” (Independent variable)  
 WCM = Working Capital Management of SMEs-Agric “i” (Independent variable)  
 FAPM = Financial Analysis and Performance Monitoring of SMEs-Agric “i” (Independent variable)  
 CRM = Credit Risk Management of SMEs-Agric “i” (Independent variable)  
 $\beta_0$  = Constant Coefficient  
 $\beta_{1-4}$  = Parameters of the estimate  
 $\varepsilon_i$  = Error term (5% significance level)  
 i = SMEs-Agric (cross sectional units)

## RESULTS AND DISCUSSION

The results are based on the responses provided by the respondents. The interpretation follows the research instrument structure. This section also shows other analysis to the study’s objectives, which helps to provide clear insights into the relationship between risk management practices and financial performance of agricultural value chain SMEs in Kwara state.

Table 3: Components of Financial Risk Management Practices

Items	Mean	Standard deviation	Skewness	Kurtosis	Cronbach’s alpha	Convergent Validity
<b>Risk Assessment and Planning</b>						
RAP1	3.67	0.719	-0.227	-0.100	0.814	0.775
RAP2	3.81	0.872	-0.25	-0.672		
RAP3	3.68	1.021	-0.77	0.458		
RAP4	4.03	0.832	-0.228	-1.13		
<b>Working Capital Management</b>						
WCM1	4.24	0.74	-0.414	-1.078	0.758	0.742
WCM2	3.66	0.763	-0.025	-0.401		
WCM3	4.23	0.849	-0.807	-0.255		
WCM4	3.52	1.139	-0.971	0.181		
<b>Financial Analysis and Performance Monitoring</b>						
FAPM1	3.99	0.854	-0.136	-1.277	0.701	0.637
FAPM2	3.97	1.001	-0.444	-1.041		
FAPM3	3.87	0.771	-0.178	-0.492		
FAPM4	3.79	0.779	-0.607	1.278		
<b>Credit Risk Management</b>						
CRM1	3.78	0.923	-0.897	0.512	0.829	0.793
CRM2	3.33	1.19	-0.319	-0.932		
CRM3	3.43	1.059	-0.649	-0.047		
CRM4	3.65	0.963	-0.455	0.145		

Source: Author’s Computation, (2025).

**Explanatory Notes:** RAP1 to RAM 4 are questions on Risk Assessment and Planning; WCM1 to WCM4 are questions on Working Capital Management; FAPM1 to FAPM4 are questions on Financial Analysis and Performance Monitoring; CRM1 to CRM4 are questions on Credit Risk Management.

Table 3 presents the summary statistics of the items in each category of Risk Assessment and Planning (RAP), Working Capital Management (WCM), Financial Analysis and Performance Monitoring (FAPM), and Credit Risk Management (CRM). It also presents the reliability and validity of each of these categories using the Cronbach's Alpha and inter-class correlation, Cronbach Alpha, and convergent validity. In total, 16 items were used to measure financial risk management practices in Table 3, which was further broken with each component taking four items. For Risk Assessment and Planning (RAP), the item with the highest mean score is RAP4 (M = 4.03, S.D = 0.832), followed by RAP2 (M = 3.81, S.D = 0.872), RAP3 (M = 3.68, S.D = 1.021), and RAP1 (M = 3.67, S.D = 0.719). All mean values are above the midpoint of 3, indicating that most participants agree with the questions measuring risk assessment and planning. The Cronbach's Alpha of 0.814 suggests good internal consistency, and the convergent validity of 0.775 supports the reliability of these items in measuring risk assessment and planning practices.

For Working Capital Management (WCM), the item with the highest mean score is WCM1 (M = 4.24, S.D = 0.74), followed by WCM3 (M = 4.23, S.D = 0.849), WCM2 (M = 3.66, S.D = 0.763), and WCM4 (M = 3.52, S.D = 1.139). Since all mean values are above the midpoint of 3, the majority of respondents agreed with the assertions regarding working capital management practices. The Cronbach's Alpha of 0.758 and convergent validity of 0.742 indicate that the items provide a reliable measure of working capital management within organizations.

For Financial Analysis and Performance Monitoring (FAPM), the item with the highest mean score is FAPM1 (M = 3.99, S.D = 0.854), followed by FAPM2 (M = 3.97, S.D = 1.001), FAPM3 (M = 3.87, S.D = 0.771), and FAPM4 (M = 3.79, S.D = 0.779). All mean values exceed the midpoint of 3, indicating general agreement with the items measuring financial analysis and performance monitoring. The Cronbach's Alpha of 0.701 and convergent validity of 0.637 suggest moderate internal consistency and reliability for the items in measuring financial analysis and performance monitoring. For Credit Risk Management (CRM), the item with the highest mean score is CRM1 (M = 3.78, S.D = 0.923), followed by CRM4 (M = 3.65, S.D = 0.963), CRM3 (M = 3.43, S.D = 1.059), and CRM2 (M = 3.33, S.D = 1.19). All mean values are greater than 3, suggesting general agreement with the questions regarding credit risk management. The Cronbach's Alpha of 0.829 and convergent validity of 0.793 indicate good internal consistency and reliability for the items measuring credit risk management.

Table 4: Components of Operational Risk Management Practices

Items	Mean	Standard deviation	Skewness	Kurtosis	Cronbach's alpha	Convergent Validity
<b>Regulatory Compliance</b>						
RC1	3.69	0.943	-0.158	-0.893	0.747	0.693
RC2	3.86	1.006	-0.132	-1.359		
RC3	3.64	0.905	0.036	-0.874		
RC4	3.99	0.984	-0.574	-0.78		
<b>Operational Efficiency and Productivity</b>						
OEP1	4.27	0.813	-0.699	-0.626	0.713	0.652
OEP2	3.82	0.868	-0.356	0.156		
OEP3	3.88	0.715	-0.838	2.614		
OEP4	3.59	0.912	-1.273	1.64		

**Human Resource Risk Management**

HRRM1	3.5	1.001	-0.566	0.262	0.901	0.879
HRRM2	3.53	1.017	-0.928	0.596		
HRRM3	3.49	1.001	-0.989	1.08		
HRRM4	3.66	1.049	-0.927	0.711		

**Post-Harvest Lost Management**

PLM1	3.56	0.807	0.174	-0.528	0.818	0.779
PLM2	3.93	0.801	-0.322	-0.443		
PLM3	3.96	0.853	-0.606	-0.128		
PLM4	3.86	1.025	-0.763	0.358		

Source: Author’s Computation, (2025).

**Explanatory Notes:** RC1 to RC4 are items related to Regulatory Compliance; OPP1 to OPP4 represents items on Operational Efficiency and Productivity; HRRM1 to HRRM4 are items under Human Resource Risk Management; PLM1 to PLM4 refer to items on Post-Harvest Loss Management.

Table 4 presents the summary statistics of the items in each category of Regulatory Compliance (RC), Operational Efficiency and Productivity (OEP), Human Resource Risk Management (HRRM), and Post-Harvest Loss Management (PLM). 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 operational risk management practices in Table 4.3, which were further broken down with each component containing four items. For Regulatory Compliance, the item with the highest mean score is RC4 (M = 3.99, S.D = 0.984), followed by RC2 (M = 3.86, S.D = 1.006), RC1 (M = 3.69, S.D = 0.943), and RC3 (M = 3.64, S.D = 0.905). All mean values are above the midpoint of 3, indicating general agreement with the items measuring regulatory compliance. The Cronbach’s Alpha of 0.747 and convergent validity of 0.693 suggest that the items provide an acceptable but moderately reliable measure of regulatory compliance practices.

For Operational Efficiency and Productivity, the item with the highest mean score is OEP1 (M = 4.27, S.D = 0.813), followed by OEP3 (M = 3.88, S.D = 0.715), OEP2 (M = 3.82, S.D = 0.868), and OEP4 (M = 3.59, S.D = 0.912). All the mean values are above the midpoint of 3, suggesting that most respondents agree with the items on operational efficiency and productivity. The Cronbach’s Alpha of 0.713 and convergent validity of 0.652 indicate that the items offer a moderate to acceptable level of internal consistency and reliability for operational efficiency and productivity practices.

For Human Resource Risk Management, the item with the highest mean score is HRRM4 (M = 3.66, S.D = 1.049), followed by HRRM1 (M = 3.50, S.D = 1.001), HRRM2 (M = 3.53, S.D = 1.017), and HRRM3 (M = 3.49, S.D = 1.001). All mean values are above 3, showing general agreement with the items related to human resource risk management. The Cronbach’s Alpha of 0.901 and convergent validity of 0.879 indicate excellent internal consistency and reliability, suggesting that the items are a very reliable measure of human resource risk management practices. For Post-Harvest Loss Management, the item with the highest mean score is PLM3 (M = 3.96, S.D = 0.853), followed by PLM2 (M = 3.93, S.D = 0.801), PLM4 (M = 3.86, S.D = 1.025), and PLM1 (M = 3.56, S.D = 0.807). All mean values are above the midpoint of 3, indicating that most participants agree with the items measuring post-harvest loss management. The Cronbach’s Alpha

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of 0.818 and convergent validity of 0.779 indicate good internal consistency and reliability of the items in measuring post-harvest loss management practices.

As reported in the findings, financial risk management practices were found to be insignificant, indicating that they do not influence the financial performance of SMEs agricultural value chain in Kwara State. However, credit risk management, being a sub-component of financial risk management, was found to have a positive and significant effect on financial performance. This finding aligns with Basel Committee on Banking Supervision (2006), which emphasizes that effective credit risk management leads to financial stability and improved business performance. The implication of this is that an increase in credit risk management brings about an increase in the financial performance of agricultural SMEs. This can be attributed to improved access to capital (Miller & Modigliani, 1958), reduced default rates (Altman, 1968), and better financial decision-making (Brigham & Ehrhardt, 2019). As credit risk management practices strengthen, agricultural businesses can better assess, mitigate, and manage the risks associated with lending, particularly in a sector prone to fluctuating market conditions and environmental uncertainties (OECD, 2020).

The study also found operational risk management to have significant influence on financial performance of SMEs agricultural value chain in Kwara state. This increases stem from the ability to identify and mitigate risks that could disrupt day-to-day operations. By proactively managing risks related to production, supply chain logistics, and regulatory compliance, SMEs can reduce operational downtime, increase efficiency, and lower costs. Effective operational risk management ensures that businesses can anticipate potential disruptions, such as equipment breakdowns, labor shortages, or changes in regulations, and take preventive measures. This leads to smoother operations, better resource utilization, and increased productivity. With a more efficient operational structure, agricultural SMEs can enhance their profitability, reduce waste, and improve customer satisfaction by meeting demand on time. Additionally, strong operational risk management practices attract investors and financial institutions by demonstrating stability and long-term viability, further boosting the financial performance of SMEs in the agricultural value chain.

More specifically, regulatory compliance plays a pivotal role in ensuring that agricultural SMEs operate within the boundaries of relevant laws and industry standards. Non-compliance can result in legal penalties, fines, and operational disruptions, which negatively affect the financial stability of these businesses. By managing regulatory risks effectively, agricultural SMEs can avoid such costs, foster operational continuity and reduce financial liabilities. Operational Efficiency and Productivity are directly linked to a firm's profitability. Efficient operations lead to optimal resource utilization, reduced operational costs, and better management of production processes. These factors enable agricultural SMEs to minimize waste, maximize output, and maintain competitiveness, thus enhancing their financial performance. Human Resource Risk Management addresses the risks associated with workforce management, including issues such as labor shortages, employee turnover, and workplace safety. By managing these risks effectively, agricultural SMEs can ensure a stable, productive workforce, reducing operational disruptions and recruitment costs, ultimately contributing to better financial outcomes. Post-Harvest Loss Management is critical in the agricultural sector, where significant losses can occur during handling, storage, and transportation of produce. Effective management of post-harvest losses

ensures a higher yield is available for sale, reducing waste and increasing revenue, thereby directly influencing the financial health of agricultural SMEs.

The findings on operational risk management practices align closely with the Resource-Based View (RBV), which posits that firms achieve competitive advantage through the effective utilization and management of valuable, rare, inimitable, and non-substitutable resources. Operational risk management practices, such as improving operational efficiency, managing labor risks, and optimizing production processes, directly contribute to the better utilization of internal resources. By implementing technology-driven solutions, optimizing resource allocation, and ensuring efficient risk management, agricultural SMEs can enhance productivity and reduce operational costs. This allows them to create a sustainable competitive advantage. This finding corresponds with what previous studies like Bettanti and Lanati (2023), Yakob et al (2020), and Zhao et al (2020) reported.

### **CONCLUSION AND RECOMMENDATIONS**

Particularly in developing nations like Nigeria, the role of risk management practices in SMEs' agricultural value chains has drawn more attention. Due to the many obstacles facing the agricultural industry, SMEs have implemented risk management strategies to increase sustainability and profitability. This study explores the influence of risk management practices on the financial performance of SMEs agricultural value chain. The study aims to fill this gap by identifying the effects of financial risk management practices, marketing risk management practices, operational risk management practices, and environmental risk management practices on the financial performance of agricultural value chain SMEs. This is although, despite the topic's increasing importance, little research has been done on the precise impact of risk management practices.

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

Based on the findings of this study, as well as the conclusions that emerged from these findings, the following recommendations are made to improve financial performance of agricultural value chain SMEs in Nigeria

- i. By diversifying their product offerings and using focused marketing tactics, SMEs can lower the risks associated with market changes and improve their understanding of consumer demand and trends.
- ii. SMEs should concentrate on using technology to increase operational efficiency. Operational disruptions can be minimized by putting automated supply chain optimization and inventory management technologies into place. The resilience and financial performance of SMEs will be further improved by routinely evaluating and upgrading risk management procedures, which should include educating staff on potential hazards.
- iii. Sustainable farming methods, like conserving soil and water, should be funded by SMEs. By lowering their environmental impact, climate-resilient farming methods help SMEs maintain long-term productivity.

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