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ENTREPRENEURSHIP TRAINING AND THE OUTPUT OF ANCHOR BORROWER RICE FARMERS IN SOKOTO STATE

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Abstract

This study examined the impact of Entrepreneurship Training on the output of Anchor Borrower Rice Farmers in Sokoto State, Nigeria. The study adopt a mixed-methods research design, combining quantitative and qualitative approaches to provide a balanced and comprehensive analysis. The target population for this study consists of rice farmers participating in the Anchor Borrower Program in the State. A sample size of 133 participants was determined using [redacted]

Yamane's formula for finite population: To achieve robust and reliable findings, both primary and secondary data sources were used: The primary data was collected through structured questionnaires and semi-structured interviews. Both quantitative and qualitative data analysis techniques were employed: Descriptive Statistics, describe participants'

Key Words:
Anchor Borrowers; Entrepreneurship; Output; Rice Farmers; Training.

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demographics and responses to key variables, such as training effectiveness, financial literacy, and market access. Inferential Statistics, to test the relationships between entrepreneurship training and outcomes like productivity and income. While, correlation analysis and multiple regression were employed to assess the impact of training intensity, frequency, and content on financial literacy and productivity outcomes. Data from interview was transcribed and analyzed using NVivo software, focusing on recurrent themes related to skill acquisition, challenges in implementing training, and perceived value. The findings highlighted significant improvements across several key areas: The average yield increased by 53.33%, from 1.5 tons/hectare before the training to 2.3 tons/hectare after the training. This improvement was attributed to better farming techniques, optimal resource use, and improved pest control methods. Farmers' monthly income rose by 50%, from ₦50,000 to ₦75,000. Additionally, return on investment increased by 45%, operating costs decreased by 20%, and profit margins improved by 35%. The study concludes that, entrepreneurship training has a transformative impact on productivity, financial performance, and market access of smallholder farmers. However, the study also underscores the systemic challenges—such as financial constraints and infrastructural inadequacies—that hinder the full realization of training benefits. Addressing these barriers is critical for sustaining the positive outcomes observed. It is recommended that, Collaborations between government, private sector players, and development organizations can enhance technical support, improve input supply chains, and expand market access.

Introduction

Agriculture is the backbone of many economies, providing employment, food, and income for millions of people worldwide. In Nigeria, agriculture is a significant sector, accounting for about 25% of

the country's GDP (CBN, 2020). Rice is one of the staple crops in Nigeria, and its production is crucial for food security and economic growth.

On their part, Nwanze, Mohapatra, Kormawa, Shellemiah and Bruce-Oliver (2006), opined that rice production in sub-Saharan Africa (SSA) has quadrupled, between 1961 and 2003, from about 3 metric tons to about 13 metric tons, and this increase is attributed to the increase in rice cultivation. This is an indication that in most African countries where rice is cultivated, farmers do not practice rice intensification. Ironically, this tremendous increase in SSA's rice production effort failed to provide the needed quantity of rice to solve this rice deficiency problem (Tiamiyu et al., 2015). Nwanze et al (2006), in their study indicated that in most African countries, the availability and prices of rice have become a main yardstick in the measurement of the welfare of the poorest segments of rice consuming citizens who are considered least in food security. Rice is therefore on the front line in the fight against hunger and poverty in SSA (Otsuka, 2019) and Azumah and Zakaria (2019) stated that rice is considered one of food security crops.

According to Sher et al. (2019) farmers' entrepreneurial skills are the essential elements required for enhanced performance in terms of potential market location and prompt delivery of food commodities. However, Sinyolo and udhara (2018) opine that some levels of entrepreneurship skills and competencies could possibly improve production output among the farming households and hence impacts food security. As opined by Nieuwoudt et al., (2017). Various studies (Jordaan and Grové, 2012; Nieuwoudt, 2016; Ataeia et al., 2020) in developing countries have shown that entrepreneurial skills impact the TE of smallholder's farms. The realization of goals of any business (farming business inclusive) depends heavily on the manager's ECs that is translated into efficiency in production (Nasuredin et al., 2016; Umar et al., 2019). Presently, the economy of countries worldwide is adversely affected by the economic meltdown; leading to a shortage of food supplies. The situation has led to the need for increased food production especially a staple crop like rice. Thus, this study set to determine the efficiency of entrepreneurship training on anchor

borrowers' rice farmers in Sokoto state, Nigeria, looking at how it has boosted rice production and the economic power of the farmers.

Statement of the Problem

Nigeria, as one of the largest rice-consuming nations in Africa, has placed a significant emphasis on domestic rice production to achieve food security and economic stability. The Anchor Borrowers Program (ABP), introduced by the Central Bank of Nigeria, aims to support smallholder farmers by providing them with financial and technical assistance [CBN, 2015}. One crucial aspect of enhancing the effectiveness of this program is the role of entrepreneurship training for rice farmers.

The rice farming sector in Nigeria faces challenges in adopting modern agricultural technologies. Entrepreneurship training may play a pivotal role in encouraging the adoption of innovative and sustainable farming practices. Akinola, and Popoola, (2018).Innovation is a must to scale production to an enviable position to guarantee food security and even have surplus to export to other countries of the world. The success of rice farming as a business is closely tied to financial management. Assessing the impact of entrepreneurship training on enhancing financial literacy among rice farmers is crucial for sustainable agricultural practices. Ojo, Ojo, and Babajide, (2019). Failure to manage the finance properly will eventually lead to business collapse.

Despite the growing body of evidence on the impact of entrepreneurship training on smallholder farmers, there is a need for more research on the specific context of anchor borrower rice farmers in Sokoto State. This study aims to fill this research gap by investigating the role of entrepreneurship training on the output of anchor borrower rice farmers in Sokoto.

Objectives of the Study

The main objective of this study is to assess the Role of Entrepreneurship Training on the output of Anchor Borrower Rice Farmers in Sokoto State, Nigeria. The specific objective includes;

1. Assess the effectiveness of entrepreneurship training programs in enhancing the output of anchor borrower rice farmers in Sokto State.
2. Investigate the extent to which entrepreneurship training contributes to the adoption of modern and sustainable agricultural practices among rice farmers participating in the Anchor Borrower Program.

Literature Review

Entrepreneurship as a concept embodies a dynamic and multi-dimensional construct encompassing the identification, creation, and exploitation of opportunities to establish and expand a business endeavor. Central to this concept is the willingness to undertake calculated risks, promote innovation, and judiciously allocate resources (Shane & Venkataraman, 2000). Entrepreneurs are distinguished by their possession of attributes such as creativity, proactivity, and a high threshold for ambiguity (Gartner, 1988). Their pivotal contributions to economic progress, job generation, and innovation are felt across diverse industries and sectors (Audretsch & Thurik, 2001).

Entrepreneurship training is critical for the success of smallholder farmers, including those under the ABP. Such training equips farmers with the necessary skills, knowledge, and attitudes to manage their farms as businesses, make informed decisions, and respond to market demands (IFAD, 2018). Entrepreneurship training can cover various topics, including business planning, financial management, marketing, and risk management.

Entrepreneurial training constitutes organized initiatives and interventions designed to equip aspiring and established entrepreneurs with the essential knowledge, skills, and competencies required to initiate, administer, and expand a thriving business enterprise (Colombo et al., 2010). Encompassing an array of subjects ranging from business planning to financial management, marketing strategies, innovation, and risk assessment (Minniti, 2008), such training is typically disseminated through formal education, workshops, mentorship programs, and hands-on experiences. Its overarching aim is to

augment entrepreneurial success rates and bolster overall economic progress (Moro & Toms, 2007).

The Concept of Anchor Borrower Training

To boost agricultural production and reduce food imports, the Central Bank of Nigeria (CBN) launched the Anchor Borrower Program (ABP) in 2015. The program aims to provide affordable financing to smallholder farmers, increase agricultural production, and improve food security (CBN, 2015). Rice farmers are among the beneficiaries of the program.

Farming in Nigeria has traditionally been viewed as a subsistence activity, but there is a growing recognition of its potential as a profitable business venture. The anchor borrower program aims to provide an enabling environment for the transition towards viewing farming as a business, encompassing various aspects such as entrepreneurship, modernization, and policy interventions.

The concept of entrepreneurship in farming is gaining prominence in Nigeria. Entrepreneurs in agriculture are individuals who identify opportunities, innovate, and take calculated risks to create profitable agribusiness ventures (Adebayo & Ifeanyi-obi, 2017). This shift towards an entrepreneurial mindset is crucial for transforming farming into a sustainable business activity.

Modernization of farming practices is essential for enhancing productivity and profitability. This involves adopting advanced technologies, such as precision farming, mechanization, and use of improved seed varieties (Oyinbo et al., 2019). Integrating these technologies into farming operations transforms it from a subsistence activity to a viable business.

Access to finance is critical for establishing and expanding farming businesses. Financial institutions, including commercial banks and microfinance institutions, play a crucial role in providing credit facilities to farmers (Adeoye et al., 2016). Government intervention programs, such as the Anchor Borrowers' Program, have further facilitated access to credit for smallholder farmers. Transitioning from subsistence to market-oriented farming is a crucial aspect of viewing farming as a business. Farmers are encouraged to produce

based on market demands, ensuring that their produce meets quality standards and fetches competitive prices (Adepoju et al., 2018). This approach enhances profitability and sustainability in the agricultural sector.

However, there are some constraints such as; Price Volatility: The profitability of farming in Nigeria is susceptible to price fluctuations, which can be influenced by various factors, including the buying decisions of up-takers (Tijani & Ogunniyi, 2019). Post-Harvest Losses: Inefficiencies in the value chain can result in significant post-harvest losses. Uptakers may reject produce that does not meet their quality standards, leading to losses for farmers (Onu & Ewuzie, 2017). Market Access Barriers: Farmers may face challenges in accessing markets due to poor infrastructure, transportation, and geographical barriers, which can hinder their ability to sell their produce profitably (Ajibefun & Adepoju, 2018). There are opportunities for collaboration between farmers and Off-takers to enhance profitability of the farming business.

Theoretical Framework

The theoretical framework for this study is based on the Human Capital Theory (HCT), which posits that investments in human capital, such as education and training, can lead to increased productivity and economic growth (Becker, 1962). In the context of this study, entrepreneurship training is seen as an investment in human capital that can enhance the productivity and output of anchor borrower rice farmers.

Empirical Literature on the Effect of Entrepreneurship Training on Anchor Borrower

Rice Farmers

Several studies have demonstrated the positive impact of entrepreneurship training on the productivity and output of smallholder farmers. For example, a study by (Moyo et al., 2019) found that entrepreneurship training increased the productivity of smallholder maize farmers in Zimbabwe by 25%. Another study by (Adegbite et al., 2018) found that entrepreneurship training improved the

business skills and knowledge of smallholder rice farmers in Nigeria, leading to increased output and income.

Entrepreneurship training for farmers has emerged as a crucial tool in enhancing agricultural productivity and livelihoods. The following are the multifaceted impact of entrepreneur training on farmers, encompassing knowledge acquisition, income augmentation, adoption of innovative practices, and socio-economic empowerment.

Entrepreneurship training equips farmers with essential business skills, financial acumen, and strategic thinking. Studies indicate that such training programs lead to a notable enhancement in farmers' understanding of market dynamics, risk management, and business planning (Mugera et al., 2019). This acquired knowledge empowers farmers to make informed decisions, consequently elevating the efficiency and sustainability of their agricultural enterprises.

One of the paramount outcomes of entrepreneur training is the substantial increase in farmers' income levels. By imparting skills related to market identification, value addition, and financial management, training programs empower farmers to negotiate better prices for their produce and diversify their revenue streams (Rashid et al., 2020). Consequently, this leads to improved profitability and economic well-being among farming communities.

Entrepreneur training often serves as a catalyst for the adoption of progressive and sustainable agricultural techniques. Farmers who undergo such training are more inclined to embrace technologies like precision farming, organic cultivation methods, and crop diversification (Sobas et al., 2019). This transition towards innovative practices not only amplifies yields but also contributes to long-term environmental sustainability.

Beyond individual benefits, entrepreneur training has a ripple effect on the broader socio-economic landscape. It engenders self-confidence, leadership, and a sense of empowerment among farmers (Sahoo & Bhat, 2019). Additionally, it fosters community cohesion and encourages collective action for common agricultural goals.

Entrepreneur training emerges as a potent tool in augmenting the capabilities and prosperity of farmers. Through the acquisition of knowledge, income generation, adoption of innovative practices, and socio-economic empowerment, these training programs not only enhance individual livelihoods but also contribute to the overall development of rural communities.

Methodology

The study adopts a mixed-methods research design, combining quantitative and qualitative approaches to provide a balanced and comprehensive analysis. The quantitative approach is used to assess measurable outcomes, such as productivity levels, income changes, and financial literacy. Simultaneously, qualitative data will capture participants' perceptions and experiences, offering contextual perceptions into how training impacts their daily farming activities and business decisions.

The target population for this study consists of rice farmers participating in the Anchor Borrower Program in Sokoto State. The ABP provides inputs, loans, and training to smallholder farmers to boost production and enhance financial independence. The study uses a stratified random sampling technique to ensure that participants are representative of diverse demographics, including age, gender, and farm size. Stratification helps ensure that findings are not skewed by over-representing one demographic subgroup.

The sample size for this study is determined using Yamane's formula for finite population:

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

Where:

∩ = sample size

N = population size (200)

e = margin of error (0.05)

After applying the formula, the sample size is calculated as follows:

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$$\cap = \frac{200}{1 + 200\ (0.05)^2} = \frac{200}{1.5} = 133$$

Thus, a sample size of 133 participants is considered adequate to ensure statistical reliability and validity. The random selection of respondents within each stratum minimizes bias and provides a balanced representation of the population.

To achieve robust and reliable findings, both primary and secondary data sources were used: The primary data was collected through structured questionnaires and semi-structured interviews.

Questionnaires: A structured questionnaire was administered to capture quantitative data on productivity, income changes, market access, and financial literacy. The questionnaire employs a 5-point Likert scale (ranging from "Strongly Agree" to "Strongly Disagree") to assess farmers' perspectives on the value of training. Questions focus on key areas such as skills acquisition, business management, and financial practices. Similarly, a semi-structured interviews are conducted with a subset of respondents and key informants, such as local ABP coordinators and agricultural extension officers. Interviews provide qualitative perceptions into participants' experiences with training and the challenges they face in implementing entrepreneurship skills.

Secondary data on regional agricultural performance, training programs, and market access was gathered from reports by the Central Bank of Nigeria (CBN), Sokoto State Ministry of Agriculture, and NIRSAL. This data complements primary data by providing a macro perspective on the ABP's impact on Sokoto agricultural sector.

The study uses both quantitative and qualitative data analysis techniques: **Descriptive Statistics**: Frequencies, means, and percentages will describe participants' demographics and responses to key variables, such as training effectiveness, financial literacy, and market access. **Inferential Statistics**: To test the relationships between entrepreneurship training and outcomes like productivity and income, correlation analysis and multiple regression was

employed. This analysis will assess the impact of training intensity, frequency, and content on financial literacy and productivity outcomes.

Thematic Analysis: Data from interviews was transcribed and analyzed using NVivo software, focusing on recurrent themes related to skill acquisition, challenges in implementing training, and perceived value. Coding will help identify patterns and insights that contribute to understanding how training translates into practical applications in farming.

Content Validity: To ensure that the questionnaire accurately captures the study's objectives, feedback from agricultural experts, local ABP coordinators, and academic advisors will be incorporated. A pilot study will be conducted with a small subset of respondents to refine questions and ensure they are clear and relevant.

Construct Validity: Multiple indicators are used to measure complex concepts such as financial literacy and productivity, strengthening the construct validity.

Internal Consistency: The Cronbach's Alpha coefficient will assess the internal consistency of questionnaire items, with a value above 0.70 considered acceptable.

Test-Retest Reliability: A subset of respondents will complete the questionnaire twice at a two-week interval to assess the stability of responses over time.

Discussion and Findings

Understanding the demographics of the study participants provides context to the findings and ensures a balanced representation. Key demographic factors include age, gender, education level, and farming experience.

The gender distribution of respondents reveals a male-dominated participation rate (63.91% male versus 36.09% female). This disparity reflects the traditional gender dynamics in Nigerian agriculture, particularly in the northern regions. However, the significant female representation (36.09%) indicates progress in gender inclusion within the Anchor Borrowers Program, though there remains room for improvement in achieving gender parity.

Table 1: Demographic Characteristics of Respondents

Demographic Variable	Frequency	Percentage (%)
Gender		
Male	85	63.91
Female	48	36.09
Age Group		
Below 30	27	20.30
30–40	56	42.11
41–50	34	25.56
Above 50	16	12.3
Education Level		
No Formal Education	21	15.79
Primary Education	32	24.06
Secondary Education	51	38.35
Tertiary Education	29	21.80
Farming Experience		
Less than 5 years	19	14.29
5–10 years	63	47.37
More than 10 years	51	38.35

Source: Field Survey (2024)

The age distribution of participants shows a concentration in the economically active age brackets: Below 30 years: 20.30% 30–40 years: 42.11% 41–50 years: 25.56%, above 50 years: 12.03%. The predominance of farmers in the 30-40 age group (42.11%) suggests a strong presence of experienced yet adaptable farmers who are likely to be receptive to new agricultural technologies and entrepreneurial practices. The relatively low percentage of farmers above 50 years (12.03%) might indicate a gradual shift towards younger farming populations, which could facilitate the adoption of modern farming techniques and business practices.

Also, the relatively high proportion of participants with at least secondary education (60.15% combined secondary and tertiary) suggests a potentially good capacity for understanding and implementing entrepreneurial concepts. However, the significant percentage of farmers with limited formal education (39.85% with primary or no formal education) highlights the need for adapted training methodologies to ensure effective knowledge transfer across all educational levels.

While, the distribution of farming experience shows: Less than 5 years: 14.29% 5–10 years: 47.37% More than 10 years: 38.35%. This distribution indicates a healthy mix of experience levels, with the majority of farmers (85.72%) having significant farming experience (5 years or more). This extensive experience base suggests that most participants have a solid foundation in farming practices upon which entrepreneurial skills can be built.

Descriptive Analysis of Key Variables

This section examines responses related to entrepreneurship training, financial literacy, productivity, and market access.

Entrepreneurship Training and Skills Development

The training provided to farmers aimed to enhance skills in financial management, marketing, and modern farming techniques.

Table 2: Perception of Training Effectiveness

Statement	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)
Training improved my financial literacy	52.63	32.33	10.53	3.51	1.00
Training enhanced my knowledge of marketing	45.11	40.23	9.02	4.51	1.13
Training introduced modern farming methods	60.15	30.45	5.26	3.01	1.13

Source: Field Survey (2024)

The study found strong positive responses to financial literacy training: as 52.63% strongly agreed that the training improved their financial literacy, 32.33% agreed, 10.53% remained neutral and Only 4.51% expressed disagreement

(combined disagree and strongly disagree) This high positive response rate (84.96% combined agreement) suggests that the training effectively addressed financial management needs. Participants particularly valued: Basic bookkeeping skills, Budget planning, Investment decision-making and Risk management strategies

Marketing training showed similarly positive results: 45.11% strongly agreed with improved marketing knowledge, 40.23% agreed, 9.02% neutral and 5.64% combined disagreement. The high positive response (85.34% combined agreement) indicates successful transfer of marketing concepts, including: Market research techniques, price negotiation strategies, and product positioning and customer relationship management

The strongest positive response was seen in the adoption of modern farming methods: 60.15% strongly agreed, 30.45% agreed, 5.26% neutral and 4.14% combined disagreement. The overwhelming positive response (90.60% combined agreement) suggests highly effective transfer of modern farming techniques.

Productivity and Financial performance

The study analyzed whether entrepreneurship training improved productivity and financial performance of farmers.

Table 3: Productivity Metrics Pre- and Post-Training

Indicator	Pre-Training (Mean)	Post-Training (Mean)	% Change
Average Yield (tons/ha)	1.5	2.3	+53.33
Average Income (₦/month)	50,000	75,000	+50.00

Source: Field Survey (2024)

The results revealed significant improvements in crop yield following the entrepreneurship training. The pre-training average yield of 1.5 tons per

hectare increased to 2.3 tons per hectare post-training, reflecting a net improvement of 0.8 tons per hectare or a 53.33% increase. This substantial growth is attributed to the adoption of enhanced farming techniques, better resource management, improved pest control methods, and optimal fertilizer application.

Similarly, financial performance metrics demonstrated notable advancements. The average monthly income rose from ₦50,000 pre-training to ₦75,000 post-training, marking a net increase of ₦25,000 or a 50% improvement. Additional financial indicators showed a 45% rise in Return on Investment (ROI), a 20% reduction in operating costs, and a 35% enhancement in profit margins, highlighting the effectiveness of the training in improving both agricultural productivity and financial outcomes.

Inferential Analysis

To test the relationship between entrepreneurship training and farmers' outcomes, a multiple regression model was used.

Model Specification:

$$Y = \beta o + \beta 1\, X1 + \beta 2X2 + \beta 3\, X3 + C \quad (4.1)$$

Where:

Y = Productivity (measured by yield and income)

X_1 = Entrepreneurship training

X_2 = Financial literacy

X_3 = Market access

ϵ = Error term

Table 4: Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	0.432	0.123	3.512	0.001**
Training (X1)	0.612	0.054	11.333	0.000**
Financial Literacy	0.342	0.067	5.104	0.000**
Market Access (X3)	0.208	0.089	2.337	0.022*

Source: E-views 10, 2024. Notes: a: (*) Significant at the 10%; (**) Significant at the 5%; (***) Significant at the 1% and (no) Not Significant

The regression results highlight the factors influencing entrepreneurship training among Anchor Borrower Rice Farmers in Sokoto State. The constant term (β = 0.432, p = 0.001) is statistically significant at the 1% level, indicating a baseline value of entrepreneurship training even in the absence of other factors. Financial literacy has a positive and significant impact (β = 0.342, p = 0.000), suggesting that as farmers improve their financial literacy, the likelihood of their participation in entrepreneurship training increases by 0.342 units, holding other variables constant. Market access also contributes positively (β = 0.208, p = 0.022), with a statistically significant relationship at the 5% level, implying that better market access encourages farmers to engage in entrepreneurship training, albeit with a smaller effect size compared to financial literacy. Overall, the findings emphasize the critical roles of financial literacy and market access in fostering participation in entrepreneurship training, with financial literacy showing the strongest influence.

Qualitative Analysis

The qualitative phase of this study involved semi-structured interviews with 25 participants and five focus group discussions, generating value into the impact of entrepreneurship training on Anchor Borrowers Rice Farmers. NVivo software facilitated the analysis, employing Braun and Clarke's (2006) six-step thematic analysis framework, which includes data familiarization, initial coding, theme identification, theme review, theme definition, and report production. This systematic approach revealed three primary themes—enhanced decision-making capabilities, market access enhancement, and implementation challenges—offering a nuanced understanding of how training interventions influence agricultural outcomes.

Enhanced Decision-Making Capabilities emerged as a central theme, with farmers reporting significant improvements in financial management and strategic planning skills. Participants highlighted enhanced confidence in making informed financial decisions, such as budget planning, investment prioritization, risk assessment, and cash flow management. For instance, one

farmer noted that adopting analytical decision-making increased their profits by 40% in the last season. Strategic planning also became integral to farming operations, as farmers began developing business plans, setting operational objectives, and adapting to market trends, transitioning from traditional approaches to more business-oriented strategies.

Market Access Enhancement was another critical area of improvement. Training equipped farmers with market intelligence skills, enabling them to identify opportunities, understand price dynamics, analyze competition, and assess risks. Participants also reported improved negotiation skills, the ability to build strong buyer relationships, and the implementation of diversification strategies such as direct-to-consumer sales, value addition initiatives, and export market exploration. One female farmer shared that her negotiation skills, developed through training, secured her regular buyers who valued her produce.

However, the study also revealed **Implementation Challenges and Barriers**. Financial constraints emerged as a significant hurdle, including limited access to credit, high interest rates, stringent collateral requirements, and working capital shortages. Infrastructural limitations, such as inadequate storage facilities, poor transportation networks, and unreliable power supply, further compounded these challenges. Additionally, farmers cited gaps in extension services, technical support, market information systems, and quality control facilities as barriers to maximizing training benefits.

Cross-cutting issues such as **gender dynamics** and **technology adoption** also surfaced. Female farmers faced additional credit access challenges but exhibited higher adoption rates of financial management practices. Technology adoption varied among participants, with some leveraging mobile banking, digital marketing platforms, agricultural apps, and online markets.

Conclusion

The findings integrate well with theoretical frameworks such as Human Capital Theory and Agricultural Innovation Systems Theory. The results affirm the role

of skill development in enhancing agricultural productivity, as postulated by Human Capital Theory, while demonstrating the interconnectedness of agricultural stakeholders and the critical role of institutional support as highlighted by Agricultural Innovation Systems Theory.

This study corroborates previous research, including Egbunike and Okafor's (2019) findings on the dual impact of training on skills and market access, Adeola and Adebayo's (2020) emphasis on structural barriers, and Olayemi (2018) identification of systemic challenges. By confirming and extending these findings, the study highlights the importance of integrated interventions that address both capacity building and systemic constraints to maximize the impact of entrepreneurship training on agricultural outcomes.

The study concludes that entrepreneurship training has a transformative impact on the productivity, financial performance, and market access of smallholder farmers. By equipping farmers with essential skills in financial management, strategic planning, and market intelligence, the training empowers them to make informed decisions, enhance their income, and contribute to the agricultural value chain. However, the study also underscores the systemic challenges—such as financial constraints and infrastructural inadequacies—that hinder the full realization of training benefits. Addressing these barriers is critical for sustaining the positive outcomes observed.

Recommendations

Based on the findings, the following recommendations are proposed:

Policy Recommendations

Access to Credit: Policymakers should introduce low-interest agricultural loans and simplify application procedures to ensure credit availability for smallholder farmers.

Rural Infrastructure Development: Investments should focus on improving storage facilities, transportation networks, and irrigation systems to reduce post-harvest losses and enhance productivity.

Public-Private Partnerships: Collaborations between government, private sector players, and development organizations can enhance technical support, improve input supply chains, and expand market access.

Programmatic Recommendations

Tailored Training Programs: Entrepreneurship training should be customized to reflect regional needs, focusing on practical and context-specific applications.

Incorporation of Digital Tools: Farmers should be trained to utilize mobile banking, digital marketing platforms, and agricultural apps to enhance efficiency and profitability.

Strengthened Extension Services: The government and stakeholders should invest in extension services to provide farmers with ongoing technical assistance and market information.

Farmer-Led Initiatives

Cooperative Formation: Farmers are encouraged to form cooperatives to pool resources, negotiate better input prices, and access larger markets.

Continuous Learning: Farmers should engage in regular training and adopt innovative farming practices to sustain productivity gains.

References

Adebayo O.R., & Ifeanyi-obi C.C., (2017). 'Journal of Entrepreneurship Education'. *Entrepreneurship in Agriculture: A Panacea for Economic Development in Nigeria. 20(3), 1-9.*

Adegbite, O. A., Adebayo, O. O., & Olorunsola, E. O. (2018). Impact of entrepreneurship training on the business skills and knowledge of smallholder rice farmers in Nigeria. Journal of Agricultural Extension, 22(1), 1-12.

Adegeye A.J., Dittoh J.S., & Agbamu J.U., (2013). 'The Nigerian Journal of Economic and Social Studies'. *Food demand and supply projections for Nigeria. 13(1), 1-15.*

Adejumo A.O., & Olayemi J.K., (2018). 'Journal of Agriculture and Food Sciences'. *Challenges and Strategies for Improving Profitability in Nigerian Agriculture. 16(2), 32-42.*

Adekunle T., Oluwaseun A., & Ibrahim M. (2021). 'Journal of Agricultural Economics'. *Financial literacy and agricultural productivity among smallholder farmers in Nigeria, 12(3), 45-5.*

Adeola O., & Adebayo K., (2020). 'African Journal of Business Development'. *Addressing structural barriers in agricultural entrepreneurship in Nigeria, 18(2), 67-82.*

Adubi A.O., et al., (2017). 'Academic Research Journal'. *Agricultural sector development and self-sufficiency in rice production in Nigeria. 5(8), 319-329.*

Alam M.J., & Rupa J.K., (2021). 'Advances in Agriculture'. *Agricultural Extension Services and Rice Production of Smallholder Farmers in Nigeria: An Empirical Analysis. 2021, 1-10.*

Ajala O.A., Ajala M.K., & Ojo T.O., (2019). 'Journal of Agriculture and Social Research'. *Assessment of farmers' access to agricultural credit in Nigeria. 19(2), 10-23.*

Ajibefun I.A., & Adepoju A.A. (2018). 'Journal of Agriculture and Social Research'. *Farmers' Adoption of Modern Agricultural Technologies in Nigeria. 22(1), 64-74.*

Akande S.O., et al... (2018). 'American Journal of Food Science and Technology'. *Rice Production and Food Security in Nigeria. 6(2), 44-50.*

Alabi R.O., Aluko O.A., & Akinlabi B.H., (2019). 'Agricultural & Environmental Law Journal'. *Analysis of Factors Affecting the Profitability of Rice Farming Enterprises in Nigeria. 2(1), 21-38.*

Bakare S., et al., (2017). 'International Journal of Development and Sustainability'. *Value addition in rice production: Evidence from Nigeria. 6(6), 932-944.*

Becker, G. S. (1962). Investment in human capital: A theoretical analysis. Journal of Political Economy, 70(5), 9-49.

Brück T., Llussá F., & Tavares J, (2012). 'Economics of Transition'. *Entrepreneurship, human capital, and labor demand in Eastern and Western European firms. 20(2), 299-341.*

Brixiová Z., Égert B., & Kangoye T., (2018). 'Journal of African Development'. *Entrepreneurship, productive employment and economic growth in African countries. 20(3), 27-47.*

CBN (Central Bank of Nigeria). (2015). Anchor Borrower Program: Guidelines for implementation.

Colombo M.G., Franzoni C., & Rossi-Lamastra C., (2015). 'Entrepreneurship Theory and Practice'. *Internal social capital and the attraction of early contributions in crowd funding projects. 39(1), 75-100.*

Colombo M.G., Grilli L., & Shams S.M., (2010). 'Economics Letters'. *Start-up size: The role of external financing. 106(1), 25-27.*

Egbunike F.C., & Okafor I., (2019). 'International Journal of Agricultural Management'. *Entrepreneurship training and market access for smallholder farmers: Evidence from Sub-Saharan Africa, 25(4), 123-136.*

Fayolle A., (2013). 'Entrepreneurship & Regional Development'. *Personal views on the future of entrepreneurship education. 25(7-8), 692-701.*

Gartner W.B., (1988). 'American Journal of Small Business'. *Who is an entrepreneur? Is the wrong question. 12(4), 11-32.*

Ihedioha O.J., Udeaja E.A., and Nnaji C.U., (2017). 'Journal of Agricultural Extension'. *Agricultural risk management and rural development in Nigeria: The role of insurance. 21(2), 1-12.*

Kantis H., Ishida M., & Komori A., (2002). 'Small Business Economics'. *The employment impact of highly innovative small firms in Argentina and Chile. 18(1-3), 31-40.*

Kayanula D., & Quartey P., (2000). 'Journal of Small Business Management'. *The policy environment for promoting small and medium-sized enterprises in Ghana and Malawi. 38(3), 59-65.*

Mafimisebi T. E., & Ojo T.O., (2018). 'Journal of Agricultural Extension'. *Enhancing smallholder farmers' access to agribusiness ventures through integrated value chain financing model in Nigeria. 22(2), 85-98.*

Minniti M., (2008). 'Entrepreneurship Theory and Practice'. *The role of government policy on entrepreneurial activity: Productive, unproductive, or destructive? 32(5), 779-790.*

Mugera A.W., Burton M., & White B., (2019). 'Journal of Agricultural Economics'. *The impact of business training on farm-level efficiency in Northern Ghana., 70(2), 547-566.*

Nkonya E., et al., (2016). 'International Food Policy Research Institute (IFPRI)'. *How to make agriculture work for Nigeria.*

Ogunniyi L.T., & Ajayi M.T., (2019). 'Journal of Agricultural Extension'. *Government policies and small scale farming in Nigeria. 23(3), 12-23.*

Ojo S.O., Arowomole B.I., & Taiwo O.J., (2018). 'Journal of Agricultural Extension'. *Agricultural cooperative societies and farmers' access to credit in Nigeria. 22(1), 12-19.*

Okoroafor, C., & Eze, A. (2020). 'Journal of Rural Development'. *Entrepreneurial capacity building for smallholder farmers in Nigeria. 10(1), 21-34.*

Olayemi T., (2018). 'Nigerian Journal of Development Studies'. *Credit accessibility and its impacton agricultural development in Nigeria. 14(1), 33-47.*

Olaniyi O.A., & Ojo T.O., (2020). 'Journal of Agricultural Extension'. *Financial institutions and agricultural credit policy in Nigeria. 24(2), 20-29.*

Olomola A.S., (2011). 'Journal of Sustainable Development'. *Domestic rice production and the challenges of food security in Nigeria. 4(1), 242-249.*

Onu J.I., & Ewuzie E.N., (2017). 'Journal of Agriculture and Social Research (JASR)'. *Challenges in Agricultural Value Chain Linkages in Nigeria: Perspectives of Up takers. 17(2), 1-12.*

Perry G., Maloney W.F., Arias O.S., Fajnzylber P., Mason A.D., & Saavedra-Chanduvi J., (2007). 'The World Bank'. *Informality: Exit and exclusion.*

Rashid S., Minot N., & Said A., (2020). 'Evidence from Zambia. World Development'. *Can agricultural input vouchers improve the performance of micro and small agribusinesses? 127, 104806.*

Shane S., & Venkataraman S., (2000). 'Academy of Management Review'. *The promise of entrepreneurship as a field of research. 25(1), 217-226.*

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