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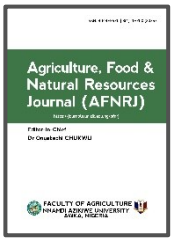

Original Article

Farmers' perception on the quality of agricultural extension services under the value chain development programme in Niger State, Nigeria

OPEN ACCESS

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ABSTRACT

This study assessed farmers' perceptions of the quality of agricultural extension services provided under the Value Chain Development Programme (VCDP) in Niger State, Nigeria. The specific objectives were to examine the socioeconomic characteristics of participating farmers, explore their perceptions of extension service quality, and identify the challenges they experienced during programme implementation. Data were collected through structured questionnaires from a total of 100 rice farmers who were purposively selected from two rice-producing communities each in Mokwa and Bida Local Government Areas (LGAs). These were analysed using descriptive statistics and the weighted mean score of a four-point Likert scale. Results revealed that 65% of the respondents (mean = 2.80) agreed that extension agents provide timely and relevant information, while 77% of the farmers (mean = 3.03) perceived extension agents as knowledgeable about value chain processes. Additionally, farmers reported several constraints such as poor tailoring of advisory services to local conditions (70%, mean = 2.90), high cost of credit (66%, mean = 2.82), transportation difficulties (73%, mean = 3.03), and low digital literacy (63%, mean = 2.78). The study concludes that although extension services under the VCDP are generally valued, their effectiveness is hindered by these challenges. It was recommended that government agencies, NGOs, and development partners collaborate to enhance the capacity of extension agents, improve input supply, strengthen rural infrastructure, and support digital literacy initiatives to ensure more inclusive and impactful service delivery.

KEYWORDS: *Adoption, Digital Literacy, Extension Services, Value chain*

INTRODUCTION

Smallholder agriculture remains the backbone of many African economies, providing livelihoods for a majority of the rural population and contributing significantly to national food security and GDP (Fofana *et al*., 2020). Despite its central role, the sector continues to suffer from stagnant or declining productivity due to a host of persistent challenges, including land degradation, climate variability, poor access to credit, weak market linkages, and inadequate input supply (Arowosegbe *et al*., 2024). Compounding these issues is the rapid pace of change in the global agricultural landscape, driven by technological advances, shifting consumer preferences, and policy reforms that often marginalize smallholders. In this context, agricultural extension services are widely recognized as a vital component for revitalizing smallholder farming systems (Fofana *et al*., 2020).

Agricultural extension is an agriculture-based informal education, training, capacity building, and knowledge sharing rendered to farmers or prospective farmers. These services are done to improve farming systems, techniques, and performances in livelihood standards and environmental sustainability (Ovharhe *et al*., 2020). In Nigeria, the Value Chain Development Programme (VCDP) is a partnership between the Federal Government and International Fund for Agricultural Development (IFAD) designed to strengthen rice and cassava value chains in selected states through input support, capacity building, and market

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linkage interventions (Anyanwu *et al*., 2025). Thus, extension agents under VCDP are entrusted with delivering technical training, organizing demonstration plots, linking farmers to finance, and disseminating market information, all aimed at integrating smallholders into more lucrative value-chain nodes (Fofana *et al*., 2020).

Despite the centrality of extension services in VCDP, there seems to be a disconnect between service provision and positive perception of participating farmers. According to Somanje *et al*. (2021), many smallholder farmers perceive extension services as irregular, too generic, or insufficiently responsive to their local needs. In Kwara State, for instance, only 58% of respondents judged extension contact under VCDP as "satisfactory," citing infrequent visits and lack of follow-up support (Olatinwo *et al*., 2024). Similarly, in South Africa and Ghana, farmers rated extension quality and relevance as moderate at best, with fewer than two-thirds expressing high satisfaction (Moshobane & Antwi, 2022). In Niger State, there is a noticeable paucity of empirical studies that assess how participating farmers perceive the quality of extension services delivered under the VCDP. This gap in the literature constrains a comprehensive understanding of the programme's effectiveness from the perspective of its primary beneficiaries and impedes the formulation of evidence-based strategies for targeted improvements. Consequently, this study seeks to address this critical gap by systematically evaluating farmers' perspectives on extension service delivery within the VCDP framework.

METHODOLOGY

The Study Area

The study was carried out in Niger State. The State lies between Latitudes 9° 35' 0.7980" N and Longitudes 6° 32' 46.7376" E. It covers a land area of 76,469.903 square kilometers (about 10% of the total land area of Nigeria) out of which about 85% is arable. As a result, most of the inhabitants are engaged in crop production and animal husbandry. Niger State experiences distinct dry and wet seasons with annual rain fall varying from 1,100 mm in the northern parts to 1,600 mm in the southern parts. The maximum temperature (usually not more than 94°C) is recorded between March and June, while the minimum is usually between December and January. The rainy seasons last for about 150 days in the northern parts to about 120 days in the southern parts of the State.

Sampling Technique and Sampling Size

The population for this study is all farmers who participated in the value chain development programme in Niger State. Multi-stage sampling technique was used to select the rice farmers. In the first stage, Mokwa and Bida Local Government Areas (LGAs) were purposively selected due to their prevalence in rice production, with 2,154 participating farmers in Mokwa and 1,821 in Bida under the programme. In the second stage, two rice-producing communities were purposively selected from each LGA. In Mokwa LGA, the selected communities had 103 and 95 participating farmers respectively, while in Bida LGA, the selected communities had 84 and 79 participating farmers respectively. In the third stage, 25 rice farmers were purposively selected from each community, making a total sample size of 100.

Method of Data Collection

Primary and secondary data were used for this research. Primary data were collected with the aid of a well-structured questionnaire while secondary data were sourced from textbooks, journals, magazines, and online articles.

Method of Data Analysis

Descriptive statistics (frequency and percentages) were used to describe socioeconomic characteristics of the respondents. Weighted mean analysis of four-point Likert Scale (Strongly Agree, Agree, Disagree, Strongly Disagree) was employed to determine farmers' perceptions on extension service delivery. A mean score of 2.50 was used as the decision benchmark; mean values of 2.50 and above were regarded as agreement, while mean values below 2.50 were regarded as disagreement.

RESULTS AND DISCUSSION

Socio-Economic Characteristics of Respondents

Table 1 shows the socioeconomic characteristics of rice farmers who participated in the Value Chain Development Programme (VCDP) in the study area. The majority of the respondents (42%) fall within the age range of 31 – 40 years, followed by 29% who are between 41-50 years. This age distribution suggests a relatively young and active farming population, capable of adopting innovations and engaging in physically demanding agricultural tasks. This finding aligns with Anyanwu *et al*. (2025), who reported that most VCDP-participating rice farmers in Anambra State were within the economically active age group of 30 – 45 years.

In terms of gender distribution, 74% of the respondents were male, while 26% were female, indicating male dominance in rice farming activities in the study area. This trend is consistent with Fawole and Tijani (2021), who observed that rice production in Nigeria is largely dominated by men due to land ownership patterns and cultural norms. Regarding marital status, a significant proportion (79%) of respondents were married, while 15% were single. This reflects the family-oriented structure of rural farming households, similar to the findings of Olatinwo *et al*. (2024) in their study of maize-based farmers in Kwara State.

As for household size, 38% of the respondents reported having between 6 and 8 members in their household, while 34% had between 3 and 5 members. This indicates moderately large households, which may provide labour for farming activities. This result is in line with Okoro *et al.* (2022), who reported a mean household size of 6 persons among rural farming households in Delta State.

With regard to educational attainment, 36% of the respondents had secondary education, 28% had primary education, and 21%

possessed tertiary qualifications. This suggests that most of the rice farmers have basic formal education, which could enhance their ability to comprehend extension messages and adopt improved farming practices. Similar educational trends were reported by Chikezie *et al*. (2019) in their study on value chain resilience among farmers in Imo State.

In terms of farming experience, 47% of the respondents had between 11 and 20 years of farming experience, while 33% had 1-10 years. This indicates that the majority of rice farmers are fairly experienced, which may influence their decision-making and openness to agricultural innovations. These findings are supported by Masere and Worth (2021), who emphasized that farming experience is a key determinant of technology adoption among smallholder farmers in Zimbabwe.

Lastly, the data revealed that 56% of rice farmers operated farms between 1.5 and 3 hectares in size, while 27% cultivated between 3.1 and 5 hectares. This reflects the smallholder nature of rice farming under the VCDP in Niger State. This pattern is consistent with Fofana *et al*. (2020), who noted that VCDP primarily targets small-scale farmers cultivating less than 5 hectares of land.

Perception of farmers on the quality of extension services provided under VCDP

Table 2 shows that 26% of the respondents strongly agree and 39% agree that extension agents provide timely and relevant information under the VCDP. With a mean score of 2.8, the response leans toward agreement but not strongly, due to the notable proportion of farmers who disagreed (24%) or strongly disagreed (11%). The implication of this result is that, for a significant minority, extension services may not consistently meet expectations in terms of provision of timely and relevant information. Also, most of the respondents in the study area perceive the advice given by extension agents under the VCDP as having improved their agricultural production with 38% strongly agreeing and 40% agreeing. This reflects a generally positive perception of the quality and relevance of extension services received. However, the presence of dissenting views (14% disagree and 8% strongly disagree) implies that some farmers may not be benefiting equally, possibly due to gaps in delivery methods or contact frequency.

A combined 77% of the respondents agree that extension agents demonstrate adequate knowledge of value chain processes, as reflected by the mean score of 3.03. This suggests a generally positive perception of the quality of extension services provided under the VCDP. The farmers' agreement implies confidence in the technical competence and advisory capacity of the agents, which is crucial for the successful implementation of value chain initiatives. As regards the statement, I trust the recommendations given by extension agents, 24% and 33% of the respondents strongly agree and agree respectively. Conversely, 30% of the respondents disagree while 13% strongly disagree thereby indicating scepticism. This outcome is critical in the context of the research question, as trust in extension advice is a direct indicator of perceived service quality. The notable level of disagreement could stem from factors such as inconsistent service delivery, limited follow-up, or a mismatch between farmer needs and the recommendations given.

Table 1: Socio-Economic Characteristics of Farmers

Variables	Frequency	Percentage
Age (years)		
< 30	11	11
31 – 40	42	42
41 – 50	29	29
51 – 60	18	18
Total	**100**	**100**
Gender		
Male	74	74
Female	26	26
Total	**100**	**100**
Marital status		
Single	15	15
Married	79	79
Divorced	5	5
Separated	1	1
Total	**100**	**100**
Household Size		
1 – 2	8	8
3 – 5	34	34
6 – 8	38	38
> 8	20	20
Total	**100**	**100**
Educational Qualification		
No formal education	15	15
Primary	28	28
Secondary	36	36
Tertiary	21	21
Total	**100**	**100**
Farming Experience (years)		
1 – 10	33	33
11 – 20	47	47
21 – 30	20	20
Total	**100**	**100**
Farm Size (Hectares)		
Less than 1.5	17	17
1.5 – 3.0	56	56
3.1 – 5.0	27	27
Total	**100**	**100**

Source: Field Survey Data (2025)

In addition, Table 2 reveals that 27% and 33% of the respondents strongly agree and agree respectively that extension agents help solve problems quickly when challenges arise, while a notable 40% (30% disagree and 10% strongly disagree) hold the opposite view. This reflects varying perceptions of the responsiveness and effectiveness of extension services under the VCDP. While a majority acknowledge timely problem-solving, the high level of

disagreement could indicate gaps in accessibility, high agent-to-farmer ratio, or logistical support that hinder prompt intervention. Furthermore, a combined 53% of the respondents (41% disagree and 12% strongly disagree) expressed dissatisfaction with the quality of extension services received under the VCDP; while only 47% (21% strongly agree and 26% agree) reported satisfaction. This finding suggests that farmers perceive the quality of extension services as inadequate or inconsistent. Possible reasons for this dissatisfaction may include limited contact with extension agents, poor follow-up, generic or outdated advisory content, or logistical constraints affecting delivery. These findings are in line with Fofana *et al*. (2020), Somanje *et al*. (2021), Moshobane and Antwi (2022) & Olatinwo *et al*. (2024).

Table 2: Perception of farmers on the quality of extension services provided under VCDP

Statement	Strongly agree	Agree	Disagree	Strongly disagree	Mean
Extension agents provide timely and relevant information	26 (26%)	39 (39%)	24 (24%)	11 (11%)	2.80
The advice given by extension agents has improved my production	38 (38%)	40 (40%)	14 (14%)	8 (8%)	3.08
Extension agents demonstrate adequate knowledge of value chain processes	35 (35%)	42 (42%)	14 (14%)	9 (9%)	3.03
I trust the recommendations given by extension agents	24 (24%)	33 (33%)	30 (30%)	13 (13%)	2.68
Extension agents help solve problems quickly when challenges arise	27 (27%)	33 (33%)	30 (30%)	10 (10%)	2.77
I am satisfied with the quality of extension services I have received	21 (21%)	26 (26%)	41 (41%)	12 (12%)	2.56

***Source**: Field survey, 2025*

Extension-Related Problems Experienced by Farmers During the Implementation of VCDP

Table 2 highlights extension-related challenges experienced by farmers under the VCDP. A notable concern is that advisory services are not always tailored to the farmers' local conditions, with 70% of respondents (30% strongly agree, 40% agree) acknowledging this limitation, resulting in a relatively high mean score of 2.90. This suggests that despite receiving guidance, many farmers find the recommendations insufficiently relevant to their specific contexts. Insufficient provision of inputs such as seeds and fertilizers was also reported, with a mean score of 2.67. While a combined 58% strongly agreed or agreed with this problem, a significant 42% disagreed or strongly disagreed, indicating a mixed experience possibly tied to location or agent reach. In terms of financial support, 66% of respondents perceived the cost of credit facilitated through extension services as high, leading to a mean score of 2.82. This reflects financial constraints that hinder farmers' ability to implement recommended practices.

Logistical barriers also emerged as a major issue. With 73% of respondents agreeing or strongly agreeing and a mean score of 3.03, transportation and access-related challenges were significant, potentially limiting participation in extension activities. Lastly, low digital literacy and poor access to ICT-based advisory tools were identified by 63% of respondents as a problem, with a mean of 2.78. This highlights a technological gap that may affect farmers' ability to benefit from modern extension innovations. Overall, the results underscore the need for more context-specific, accessible, and inclusive extension service delivery. These results agree with the findings of Odjebor *et al*. (2024), Olatinwo *et al*. (2024) and Ojo *et al*. (2024).

Table 3: Extension-Related Problems Experienced by Farmers During the Implementation of VCDP

Statement	Strongly agree	Agree	Disagree	Strongly disagree	Mean
Advice often not tailored to local conditions	30 (30%)	40 (40%)	20 (20%)	10 (10%)	2.90
Insufficient provision of inputs (seeds, fertilizers, etc.)	26 (26%)	32 (32%)	25 (25%)	17 (17%)	2.67
High cost of credit or finance facilitated through extension agents	27 (27%)	39 (39%)	23 (23%)	11 (11%)	2.82
Transportation/logistical challenges in accessing extension events	39 (39%)	34 (34%)	18 (18%)	9 (9%)	3.03
Low digital literacy and access to ICT-based advisory tools	29 (29%)	34 (34%)	23 (23%)	14 (14%)	2.78

***Source**: Field survey, 2025*

CONCLUSION AND RECOMMENDATIONS

The study concludes that farmers in Niger State perceive the extension services provided under the VCDP as generally effective, particularly in terms of the timely and relevant information offered, the competence of extension agents, and the contribution of advisory services to improved agricultural production. However, challenges such as poor tailoring of advice to local conditions, inadequate input provision, high credit costs, transportation difficulties, and limited digital literacy were identified.

Based on these findings, it is recommended that the frequency and consistency of farmer–extension agent interactions be improved and that advisory services be better tailored to farmers' local conditions. Efforts should also be made to strengthen input distribution systems and facilitate farmers' access to affordable credit.

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Authors' Contributions

AM: Conceptualization, study design, data collection, writing – original draft preparation, project administration, and final approval of the manuscript. AL: Methodology development, data analysis, and critical revision of the manuscript. AE: Literature review, field coordination, and data quality assurance. YE: Wrote review and editing, questionnaire design, and formatting of references.

Ethical Statement

Not applicable.

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