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Evaluation of cocoa farmers' perception of the cocoa rebirth program in Kwara State, Nigeria

Evaluación de la percepción de los productores de cacao sobre el programa de renacimiento del cacao en el estado de Kwara, Nigeria

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Abstract

Cocoa, a significant cash crop in Nigeria, contributes significantly to the Nation's economic growth. However, the declining trend in cocoa production is worrisome, and therefore, there is a need for a reset of the cocoa industry through the Cocoa Rebirth Program (CRP). Hence, the study describes the socioeconomic characteristics of cocoa growers in the study area, determines the level of practice of CRP, describes the attitude of cocoa farmers towards CRP, and identifies the constraints against the Adoption of CRP in Kwara state, Nigeria. Descriptive statistics, multiple regression analysis, and Pearson product Moment correlation were used to analyze the data. Results revealed that farmers' mean age, farming experience, and farm size were 52.4 years, 23.3 years, and 1.74 hectares, respectively. The level of practice of sustainable water programs was high. Recognizing the significance of Cocoa Rebirth Programs is crucial for the long-term viability of the cocoa industry and has the highest mean score at 4.23. The respondents have a positive attitude towards CRP with $\bar{x} = 2.19$. Market access and price Volatility ($\bar{x} = 2.63$) and climate change vulnerability ($\bar{x} = 2.54$) were significant constraints to the practice of CRP. Farmers' age ($\beta = -0.122$), years of education ($\beta = -0.412$), years of experience ($\beta = -0.045$), and frequency of extension contact ($\beta = 0.011$) determined farmers' attitude towards the perception of CRP. The study concluded that the perception of cocoa farmers on CRP is appreciable in the study area. Findings underscore the need for more research on CRP and Cocoa, and other agricultural research institutes should explore breeding pest- and disease-resistant as well as high-yielding varieties of Cocoa.

Keywords: *Cocoa rebirth program, attitude, perception, cocoa farmers, cash crop*

Resumen

El cacao, un cultivo comercial significativo en Nigeria, contribuye al crecimiento económico de la nación. Sin embargo, el declive de la producción de cacao es preocupante, por lo tanto, existe la necesidad de reiniciar la industria del cacao a través del *Cocoa Rebirth Program* (CRP). El estudio describe las características socioeconómicas de los productores de cacao, determina el nivel de práctica de la CRP, describe la actitud de los agricultores de cacao hacia la CRP e identifica las limitaciones contra la adopción de CRP en el estado de Kwara, Nigeria. Se utilizaron estadísticas descriptivas, análisis de regresión múltiple y correlación de momento del producto Pearson para analizar los datos. Los resultados revelaron que la edad media de los agricultores, la experiencia agrícola y el tamaño de la granja fueron 52.4 años, 23.3 años y 1.74 hectáreas, respectivamente. El nivel de práctica de los programas de agua sostenibles fue alto. Reconocer la importancia de los programas de renacimiento de cacao tiene la puntuación media más alta en 4.23, lo cual es crucial para la viabilidad a largo plazo de la industria del cacao. Los encuestados tuvieron una actitud positiva hacia CRP con $\bar{x} = 2.19$. El acceso al mercado y la volatilidad de los precios ($\bar{x} = 2.63$) y la vulnerabilidad del

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cambio climático ($\bar{x}$ = 2.54) fueron restricciones significativas para la práctica de la PCR. La edad de los agricultores (β = –0.122), años de educación (β = –0.412), años de experiencia (β = –0.045) y frecuencia de contacto de extensión (β = 0.011) determinaron la actitud de los agricultores hacia la percepción de la CRP. El estudio concluyó que la percepción de los agricultores de cacao en la CRP es apreciable en el área de estudio. Los hallazgos subrayan la necesidad de más investigación sobre CRP y el cacao, con el apoyo de otros institutos de investigación agrícola se debería explorar las variedades de cacao resistentes a las plagas y enfermedades, y de alto rendimiento.

Palabras clave: *Programa renacimiento del cacao, actitud, percepción, cacaocultores, cultivo comercial.*

Introduction

Cocoa (*Theobroma cacao* L.), a commercial crop from the family of Malvaceae, is grown in the humid tropics, with around 6.5 million hectares planted in 57 countries (Akintelu et al., 2019). Cocoa is a major cash crop in Nigeria and one of the most important crops in various African countries, accounting for a significant portion of rural employment, foreign exchange revenues, and agricultural GDP. Nigeria ranks as the third largest producer of Cocoa and sixth globally (Olutegbe & Sanni, 2021). Cocoa cultivation employs approximately 300,000 farmers in Nigeria, contributing substantially to the country's rural economy (Oyekale, 2022). Cocoa was the main agricultural stake of Nigeria's economy until the 1970s when crude oil was discovered in quantities suitable for commercial exploitation. Nigeria is now the world's fourth largest producer of Cocoa, after Ivory Coast, Indonesia, and Ghana, and the third largest exporter, after Ivory Coast and Ghana (Bečvářová & Verter, 2014).

Cocoa contributes significantly to biodiversity conservation, natural resource management, and the diversification and intensification of food crop systems. Its importance to many emerging economies cannot be overstated, as it is produced by over fifty developing countries in Asia, Africa, and Latin America, all located in tropical or subtropical regions. In Nigeria, Cocoa is a vital economic asset critical in sustaining the country's workforce, providing income for more than five million people (Olasupo & Aikpokpodion, 2019).

Cocoa has remained a significant export and cash crop in fourteen of Nigeria's thirty states, including Kwara, Ondo, Ogun, Osun, Oyo, Ekiti, Cross River, Edo, Abia, Kogi, Adamawa, Akwa Ibom, Taraba, and Delta (Fatai et al., 2024). Nigeria continues to produce 300-350 metric tons of Cocoa annually, the majority of which is exported; the country exports approximately 96 % of its cocoa crop (Afolayan, 2020). Many farmers in Nigeria buy, sell, move, and export cocoa. In Nigeria, Cocoa is interplanted with various crops such as coffee, citrus, plantain, and many other crops to form a farming system due to risk aversion and environmental and economic benefits, among others (Abidogun et al., 2019). Cocoa can manufacture cocoa powder, chocolate products, beverages, wine, soap, cocoa bread, butter, jams, fruits, nuts, and animal feed. Also, according to Taubert et al. (2007), Cocoa is a group of compounds that have beneficial health effects and are utilized as a plant-based food because they contain natural minerals, vitamins, lipids, and carbohydrates.

However, several factors, including the discovery of petroleum, the policies, and actions of the Nigerian Cocoa Marketing Board of 1978 – 1986, the high cost and unavailability of inputs for cocoa production, the activities of middlemen, old and low-yielding trees; non-remunerative prices; the lack of farm labor; outdated agronomic practices; the poor nutrient status of cultivated land; and the lack of credit available to cocoa farmers, are to be blamed for the declining trend in cocoa production (Akinnagbe & Ajayi, 2012).

A comprehensive grasp of the variables affecting the efficiency or inefficiency of the sub-current sector is crucial for raising productivity and optimizing efficiency in the agricultural domain, particularly for cocoa growers. Also, the enormous benefits of Cocoa as a modest source of revenue for both farmers and the government convey an urgent need to propose ways to improve cocoa quality and output.

Worried about the deteriorating status of cocoa production in Nigeria, as reported by Awoyemi & Aderinoye-Abdulwahab (2019), International Cocoa Organization [ICCO], (2021), and Shahbandeh (2021) and to diversify the Nigerian economy, the Federal Government in 2005 chose

to reinvigorate cocoa business by launching the Cocoa rebirth program (CRP) by the Olusegun Obasanjo administration. This program sought to revive and restore cocoa production and marketing in Nigeria to its former glory, improve knowledge of Cocoa's wealth creation potential, promote increased output, lure young into cocoa cultivation, and help raise cash for the industry's development. The resuscitation of Nigeria's cocoa industry through CRP would provide farmers and agricultural youth with sufficient capacity to improve the Nation.

This prompted a rollout of CRP in Kwara state, Nigeria, to boost cocoa production by providing farmers with better planting materials, agricultural techniques, and inputs. This could include developing high-yield cocoa cultivars, encouraging sustainable farming practices, and guaranteeing access to critical resources. Farmers were trained in efficient cocoa agronomic farming practices, pest and disease management, postharvest handling, and other yield-optimization strategies. The program also aimed to improve the quality of cocoa beans grown in Kwara state. Infrastructure improvements will boost the cocoa value chain, including constructing or rehabilitating processing facilities, storage warehouses, transportation networks, and marketplaces to facilitate efficient postharvest handling, value addition, and market access.

Given this, it is pertinent to analyze the perception of cocoa farmers on the CRP, and specifically, the study sought to**:**

1. describe the socioeconomic characteristics of cocoa farmers in the study area;
2. determine the level of practice of the Cocoa Rebirth Program;
3. describe the attitude of cocoa farmers towards the cocoa rebirth program and
4. Identify the constraints militating against adopting the cocoa rebirth program for cocoa farmers in the local government areas of Isin and Irepodun in Kwara state.

Materials and Method

The study area

This study was conducted in Kwara State, Nigeria. The state is one of the cocoa-producing states in Nigeria (Akinnagbe & Okunlola, 2012). Kwara state is located between latitudes $7^0 45^{'}$ and $9^0 30^{'}$ North and longitudes $2^0 30^{'}$ and $6^0 25^{'}$ East, with her capital in Ilorin. The state comprises 16 Local Government Areas (LGAs) and has Agriculture as the mainstay of its economy. With an annual rainfall that ranges from 1000 mm to 1500 mm and an average temperature that varies between 30^0 C and 35^0 C, crops commonly grown include Cassava, Rice, Maize, Kolanut, Cocoa, Coffee, Tobacco, Beniseed, Cotton, Palm produce, and Vegetables such as Amaranthus, Okra, and Pepper (Omotesho et al., 2019). Isin and Irepodun Local Government Area were purposively selected for the study because of the state's high cocoa production.

Sampling procedure and sample size

A two-stage sampling procedure was used to select respondents for the study, The first stage involved the purposive selection of the two LGAs in Kwara state, this was due to increased cocoa production in the 2 LGAs according to Oluyole et al. (2011) and Fatai et al. (2024).

According to the list of registered cocoa farmers obtained from Kwara State Agricultural Programs (KWADP), Irepodun has 140 cocoa farmers while Isin has 87 cocoa farmers. Therefore, the second stage involved the random selection of 60 % out of the total number of cocoa registered farmers in the two LGAs arriving at 84 cocoa farmers from Irepodun and 77 from Isin LGAs, arriving at a total of 161 cocoa farmers that were used for the study. The justification for the selection was to select cocoa farmers who practiced cocoa rebirth programs in both LGAs.

Data analysis

The structured interview schedule was used to obtain information from the cocoa farmers. The face and content validity of the instrument for data collection was carried out by agricultural extension and rural development experts. The test-

retest method was used to ensure the instrument's reliability for data collection (Omotesho et al., 2019). The reliability of the instrument was analyzed using the Cronbach's alpha coefficient. 0.82 was obtained as co-efficient and was satisfactory for the instrument's reliability. The instrument was analyzed using descriptive statistical tools such as frequency, percentages, mean, and standard deviation, while correlation and regression were used for inferential statistics. The CRP was operationalized using a 4-point Likert-type scale to ascertain the level of practice. Respondents were given a selection of CRP activities, and they were asked to rate how well they practiced it on a scale of one to four. The scale was graduated as Not done (1), rarely (2), often (3) and very often (4). Individual respondents' weighted ratings were summed and converted to a mean, which was adopted as a measure of the respondents' level of CRP practice.

The attitude of cocoa farmers towards CRP was measured using a 5-point Likert-type scale. The scale was graded as follows: strongly disagree =1, disagree =2, indifferent =3, agree =4, and strongly agree = 5. A decision means of 3 was derived. Any category with a mean value less than 3 was regarded as low, and any category with a mean value more than 3 was regarded as high (positive attitude).

To identify constraints to CRP, a list of possible constraints was drawn, and respondents were required to rate their level of severity on a scale of one to three graduated as follows: Not severe = 1, Severe = 2, Very severe = 3.

Results and discussion

Socioeconomic characteristics of cocoa farmers in Kwara state

Results presented in Table 1 show that the respondents' mean age is 52.4 years old, which implies that cocoa farmers are not too young, and there is a need for the young generation to be involved in Cocoa. This agrees with the views of Ejike & Chidiebere-Mark (2019), who reported that the mean age of Cocoa farmers is 53.4 years. The majority of the cocoa farmers (94.4%) are males, this aligns with the findings of Oluyole (2011), Akintelu et al. (2019), and Awoyemi & Aderinoye-Abdulwahab (2019) which confirms that male-headed households constituted the majority of cocoa farmers in the study area. These results imply that cocoa production is a male-dominated enterprise which may likely result from the tedious nature of

Table 1: Distribution of the Cocoa farmers by their socioeconomic characteristics

Socioeconomic characteristics	Frequency	Percentage (%)	Mean	Standard Deviation
Age (years)				
≤35	14	8.7	**52.4 years**	21.9
36-55	101	62.7		
<55	46	28.6		
Sex				
Male	152	94.4		
Female	9	5.6		
Farm type				
Purchase	10	6.2		
Lease	54	33.5		
Inherited	97	60.2		
Years of formal education				
0	61	37.9		
1-6	80	49.7	**5.4**	9.1
7-12	17	10.6		
>12	3	1.86		
Land area (hectares)				
1-5	138	85.7	**1.74**	10.1
6-10	23	14.3		
Income realized per season (N)				
100,000-500,000	29	18.0	**891 333**	15.9
500,0001-1,000000	91	56.5		
>1,000000	41	25.5		
Cocoa farming experience (years)				
≤10	2	1.2	**23.3**	9.7
11-20	22	13.7		
≥21	137	85.1		
Extension contacts in the past 6 months				
Yes	130	80.7		
No	31	19.3		
If yes, how often				
Once	101	77.7		
Twice	22	16.9	**1.4**	3.7
More	7	5.4		

Source: Field survey (2023).

operation involved in its production. Results in Table 1 further show that 60.2 % of the cocoa farmers inherit the cocoa farm. This implies that sales of cocoa farms are not a common practice in the study area as the land inheritance system is still held from generation to generation. This is confirmed by the findings of Ogundiran et al. (2021). Results in Table 1 also show that the average years of formal education is 5.4, and the mean is 1.74 cultivated land. This conforms with the findings of Nkang et al. (2009), who affirm that a high number of cocoa farmers plant on plots ranging between 1 and 5 hectares of land. Also, as reported in Table 1, the income realized per sale is N 891.33. This concurs with the findings of Badiru et al. (2023) which indicate that cocoa farmers may face financial challenges, potentially leading to reduced investments in cocoa farm production. Farmers also have a mean years of farming experience of 23.3 years, with an average of 1.4 as contact with extension agents in six-month intervals. This implies that, based on their vast years of experience, cocoa farmers have the knowledge and skills to manage their cocoa production effectively. However, contact with extension agents implies limited access to agricultural advice and support, potentially hindering farmers' ability to address issues, adopt new techniques, and improve their farming practices throughout the year. Similar findings have been reported by Kayode et al. (2022) that low frequency of extension contact could hurt farmers' knowledge and Adoption of improved farming practices.

Level of Practices of Cocoa Rebirth Program

Results in Table 2 reported how well cocoa farmers practiced different management practices related to the cocoa rebirth program, which focuses on improving cocoa farming while taking care of the environment. Sustainable Water Management is at the 1st, with a mean score of 2.27. This implies that farmers are relatively good at sustainably managing water resources while growing Cocoa. This affirms the findings of Neville et al. (2020) that sustainable management practices will increase a considerable number of farmers' efficiency and lead to more certified cocoa bean production. Cocoa Productivity Enhancement Program comes second, with a mean score of 1.87. However, cocoa farmers need to adopt practices that enhance productivity, such as Integrated Pest and Disease Management, which ranked third, with a mean score of 1.83. This result is different from the findings of Uwagboe & Famuyiwa (2016) that cocoa farmers have a favorable attitude toward the use of integrated pest management practices in Edo and Ogun states, Nigeria. Postharvest Processing and Quality Improvement is in the fourth position, with a mean score of 1.75. This implies that postharvest handling among cocoa farmers needs improvement to maintain its quality. Other management practices, such as Climate Change Adaptation and Resilience ($\bar{x}$ = 1.60) and Farm Rehabilitation and Renovation, rank sixth ($\bar{x}$ = 1.48), Sustainable Agroforestry Management ($\bar{x}$ = 1.33) and Farmers's Training ($\bar{x}$ = 1.06) are at the bottom of the practices, which implies that there is a need for more sensitization, training, and education for farmers to improve their practices. This result corroborates the finding of Adebiyi & Okunlola (2013).

It is worth noting that most empirical studies

Table 2: Distribution of the Respondents by the Level of Practices of the Cocoa Rebirth Program

Cocoa Rebirth Programs	Not done F (%)	Rarely F (%)	Often F (%)	Very Often F (%)	Mean Score	Rank	Remark
Sustainable Water Management	4 (2.5)	14 (8.6)	37 (23.0)	106 (65.8)	2.27	1st	High
Cocoa productivity enhancement program	5 (3.1)	11 (6.8)	85 (52.8)	60 (37.3)	1.87	2nd	Low
Integrated pest and disease management	14 (8.7)	26 (16.1)	68 (42.3)	53 (32.9)	1.83	3rd	Low
Planting of improved varieties with early maturity	4 (2.5)	30 (18.7)	74(45.9)	53(32.9)	1.75	4th	Low
Postharvest Processing and Quality Improvement	4 (2.5)	30 (18.7)	74 (45.9)	53 (32.9)	1.75	4th	Low
Climate change adaptation strategies and resilience	10 (6.2)	53 (32.9)	76 (47.2)	22 (13.7)	1.60	5th	Low
Farm Rehabilitation and Renovation	30 (18.6)	71 (44.1)	43 (26.7)	17 (10.6)	1.48	6th	Low
Sustainable Agroforestry Management	41 (25.5)	82(50.9)	22 (13.7)	16 (9.9)	1.33	7th	Low
Farmers Training	53 (32.9)	63 (39.1)	29 (18.1)	16(9.9)	1.06	8th	Low

Source: Field survey (2023). Benchmark = 2 therefore MS < 2: Low and MS ≥ 2: High

Akmel et al. (2016); Benjamin et al. (2011); Folayan (2010); Levai et al. (2015); Niemenaka et al. (2014); Quarmine et al. (2012) have focused on the management practices and constraints that limit farmers from producing quality Cocoa. They found out that farmers' level of management practices had a positive and significant relationship with cacao bean quality. Therefore, operators in the cocoa sector continue to seek solutions to improve cocoa beans' quality—moreover, all efforts to improve bean quality, quality, especially on the identified practices.

Attitude of Farmers on Cocoa Rebirth Program

The attitude and perception of cocoa farmers in the usage and implementation of cocoa management practices are expected to play an important role in_farmers' decision to adopt a new production practice. Using the mean score and standard deviation to rank the order of perception, Results in Table 3 show an analysis of how farmers perceived the Cocoa Rebirth Program, which is aimed at revitalizing and improving cocoa production. The table provides a mean score for each statement, indicating how strongly cocoa farmers feel about each section of the program. Recognizing the significance of Cocoa Rebirth Programs is crucial for the long-term viability of the cocoa industry and has the highest mean score at 4.23. This statement highlights that farmers place great importance on acknowledging the program's significance for the cocoa industry's future. This attitudinal statement in Table 3 shows that farmers emphasized the program's significant positive influence on cocoa production. The findings of this study corroborate the study of Akintelu et al. (2019), Daudu et al. (2021), Awoyemi & Aderinoye-Abdulwahab (2019), Olutegbe & Sanni (2021), and Fatai et al. (2024) on cocoa farmers' attitudes towards management practices.

Categorization of the Attitude of the Respondents towards Cocoa Rebirth Program.

The study from Table 4 reveals that about (57.8 %) of the respondents had a high perception of the CRP. Those with very high perception accounted for 37.3 %, while the remaining 4.9 % of the respondents had low perception. The overall mean of respondents' perception of the CRP is 2.19. The overall picture revealed that respondents had a positive attitude towards the quality of CRP services. This is similar to the results of Mutyasira et al. (2018), who showed that changing farmers' attitudes and perceptions, increased awareness, and on-farm demonstrations are vital for the Adoption of sustainable agricultural practices.

Table 4: Categorization of Respondents Based on Level of Perception Towards Cocoa Rebirth Program in Kwara State

Level	Frequency	Percentage	Mean
Low (< 1.50)	8	4.9	
High (1.50-2.25)	93	57.8	2.19±0.33
Very High (> 2.25)	60	37.3	

Source: Field survey, 2023.

Table 3: Distribution of Respondents by Attitude Towards Cocoa Rebirth Program

Attitudinal Statement	Strongly Disagree F (%)	Disagree F(%)	Indifferent F(%)	Agree F (%)	Strongly AgreeF (%)	Mean Score
CRP enhances cocoa production	1 (0.6)	5(3.1)	15 (9.4)	91 (56.5)	49 (30.4)	4.12
The program is essential for the sustainable future of Cocoa	0(0.0)	3(1.9)	9 (6.0)	90 (55.9)	59 (36.2)	4.14
programs are crucial for the long-term viability of the cocoa industry.	-	2 (1.2)	11 (6.9)	82 (50.9)	66(41.0)	4.23
CRP catalyzes positive change in cocoa farming practices	-	7 (4.3)	24 (14.9)	84 (52.2)	46 (28.6)	4.03
The success of cocoa production hinges on the effective implementation of CRP.	9 (6.0)	12 (7.5)	22 (13.2)	79 (49.1)	39 (24.2)	3.95
The commitment to cocoa rebirth programs is a testament to the industry's dedication to sustainability and responsible farming	6(3.7)	8 (4.9)	14 (8.8)	88 (54.7)	45 (27.9)	4.10
CRP fosters innovation and resilience in the cocoa sector.	-	5 (3.1)	12 (7.5)	94 (58.3)	50 (31.1)	4.02

Source: Field survey, 2023. Benchmark = 3 therefore MS < 3: Low and MS ≥ 3: High

Constraints of Cocoa Rebirth Program

Table 5 analyzes the constraints or challenges faced by the cocoa rebirth program. Market Access and Price Volatility is the 1st and has a 2.63 mean score. Farmers face difficulties accessing markets and dealing with cocoa price fluctuations; this result is supported by the finding of Afolayan (2020), which emphasized that the price of agricultural products in developing countries is not always stable, which can affect their income. Climate change vulnerability is the 2nd and has a 2.56 mean score. Cocoa farms are vulnerable to climate change impacts, such as unpredictable weather patterns. Aging of plantation and Access to Inputs is the 3rd and has a 2.5 mean score.

Hypotheses testing

Multiple Regression analysis showing the relationship between the socioeconomic characteristics of the respondents and their perception of CRP

The results in Table 6 show the Multiple regression analysis of the relationship between the socioeconomic characteristics of the respondents and their perception of the Cocoa Rebirth Program. It shows that age (β =0.209), educational status (β =412), farming experience, extension contact (β =0.045), and extension schedule (β =0.011) are significant factors in the perception of CRP. This result implies that the age of the participants plays a significant role in influencing the outcome, suggesting that the older the farmer is, the more positive attitude he has towards CRP. Also, respondents' educational backgrounds have a significant impact, emphasizing the importance of education in understanding or influencing the variables being studied. Farming experience has a statistically significant effect, indicating that participants' level of experience in agriculture is a crucial factor in the research context. The level of contact with agricultural extension services is significant, implying that access to and utilization of extension services can have a notable influence on the variable under investigation. The timing and frequency of extension services have a significant impact, suggesting that the scheduling of such services may need to be optimized or tailored to achieve desired outcomes better. This finding supports the assertion of Daudu et al. (2021) that an increase in the variables could improve management practices in cocoa production.

The result of Pearson's Product Moment Correlation Analysis shows the relationship between the level of practice of CRP and the perception of CRP among cocoa farmers

Table 7 shows the correlation analysis between the level of practice of CRP and the perception of cocoa farmers. The result reveals that the level of practice had a positive significant relationship with cocoa farmers' perception of CRP. This implies that farmers' positive perception of benefits derived from CRP increased their level of participation in the CRP services. Farmers with high levels of perception tend to practice CRP

Table 6: Regression analysis showing the relationship between the socioeconomic characteristics of the respondents and their perception of CRP

Predictors	Unstandard co-efficient		Standard co-efficient	T	Sign
	B	Std error	Beta		
Constant		0.766		-0.765	0.411
Age	0.122	0.033	- 0.231	-0.056	0.013*
Sex	0.234	0.155	0.301	0.851	0.501
Household size	0.342	0.014	0.311	0.319	0.063
Education status	0.412	0.204	0.203	0.233	0.004*
Farm type	0.006	0.176	0.212	0.431	0.183
Farm size	0.013	0.111	0.028	0.462	0.060
Income	-4.895 E-7	0.000	0.044	0.024	0.109
Farming experience	0.045	-0076	-0.003	-0.331	0.017*
Extension contact	0.011	0.121	0.219	0.345	0.023*

Source: Field survey, 2023. R^2 = 0.701 Adjusted R^2 = 0.622

more than those with low levels of perception. The fact that the cocoa farmers' level of practice was positively related to their perception gives credence to this assertion.

Table 7: Result of Pearson's Product Moment Correlation Analysis showing the relationship between level of practice of CRP and Perception of CRP Services

	Practice	Perception
Practice	1	0.320***
Perception	0.320***	1

Source: Field survey (2023).

Conclusion and Recommendations

Cocoa farmers in the study area have a favorable attitude towards the cocoa rebirth program, and that it influences the quality of Cocoa products; however, there is a need to adopt more of these practices, so the following recommendations are put forward:

- Policies and programs that address the quality and not quantity of cocoa globally, be implemented.
- As indicated in the results in Table 1, the mean results reflect low extension services therefore, extension agents and other related organizations should sensitize cocoa farmers on effective management practices in order to enhance their skills in profitability and sustainable management.
- Cocoa Research Institute of Nigeria (CRIN) and other agricultural research institutes should explore breeding pest- and disease-resistant varieties of cocoa, as well as high-yielding varieties.
- The government and relevant stakeholders should strengthen the resilience of cocoa farmers to climate change by sensitizing the farmers to the appropriate climate change adaptation strategies.
- Extension agents should facilitate links between farmers and markets for Cocoa.

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Authors' Contributions

KAO- Conceptualization. literature review and final editing

MOB- Data Collection and Analysis

OAA- Interpretation of results, summary, and conclusion of findings.

All authors contributed to this research

Conflicts of Interest

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