

SOCIO-CULTURAL FACTORS INFLUENCING THE PRODUCTION OF KOLANUT IN EKITI STATE, NIGERIA

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ABSTRACT

The study assessed the socio-cultural factors influencing kola nut production in Ekiti State, Nigeria. Specifically, it described the socio-economic characteristics of kola nut farmers, examined the level of kola nut production, determined the extent to which socio-cultural factors influence production, and identified the constraints to production. A three-stage sampling technique was used to select 120 respondents. Data were collected through a structured interview schedule and analysed using descriptive statistics and Ordinary Least Squares (OLS) regression. The results showed that most respondents were male (81.7%), above 60 years (50.8%), and married (80.3%), with secondary education (28.3%) as the highest level attained by most. Respondents had an average farm size of 1.8 hectares and produced 0.4 metric tons of kola nut annually. Findings further revealed that socio-cultural factors strongly influenced kola nut production. Items with high perceived influence included kola nut's role in traditional ceremonies ($\bar{x} = 4.18$, $SD = 0.66$), hospitality and friendship ($\bar{x} = 4.22$, $SD = 0.58$), medicinal benefits ($\bar{x} = 4.10$, $SD = 0.60$), prayer for longevity ($\bar{x} = 3.95$, $SD = 0.71$), and its cultural symbolism in marriage and unity. In terms of production constraints, the most severe were lack of access to credit ($\bar{x} = 3.41$, $SD = 0.63$), unfavourable weather ($\bar{x} = 3.37$, $SD = 0.62$), inadequate knowledge of improved practices ($\bar{x} = 3.34$, $SD = 0.74$), poor information on preservation strategies ($\bar{x} = 3.23$, $SD = 0.69$), and high cost of pesticides ($\bar{x} = 3.13$, $SD = 0.78$). The OLS regression analysis showed that income generation ($\beta = 0.916$, $p = 0.011$), medicinal value ($\beta = 0.055$, $p = 0.008$), cultural relevance ($\beta = 0.085$, $p = 0.000$), and spiritual significance ($\beta = 0.081$, $p = 0.011$) were significant predictors of kola nut production. The study concludes that kola nut production is deeply socio-culturally rooted but constrained by systemic, financial, and environmental challenges. It recommends improved access to extension services, farm inputs, and the integration of cultural heritage into development strategies to enhance sustainable kola nut production.

Keywords: Culture, extinction, kola nut, relevance, values

INTRODUCTION

Foods are important to humans' mental and social health. Food contains nutrients such as carbohydrates, protein, vitamins, fats, and minerals, which are very necessary for our physical and mental growth (National Institute of Ageing, 2019). Some foods are derived directly from plants. Kola nut is a tropical crop with over 20 species, and the trees are native to the tropical rainforests of Africa (Unya, 2021). Yalwa and Bello (2017) affirmed that kola-nuts comprise about 2% caffeine, and other stimulants (kolanin and theobromine). Kola is grown commercially and globally, particularly in Nigeria, Sri Lanka, Indonesia, Brazil, and other parts of South America (Yalwa and Bello, 2017). Nigeria produces about 120,000 tons of kola-nut annually (Ndagi, *et al*, 2012) mostly, from the Southwest States of Ogun, Ekiti, Ondo, Oyo, Osun, and Lagos (Agbebaku *et al*, 2020). It is popular because of its caffeine content (Ojo and Ehinmowo, 2010). Kola-nuts are exported to Europe and North America for flavouring kola drinks and for use in the manufacture of pharmaceuticals as well as dyes (Jayeola and Olayiwola, 2018).

Beyond the economic values of kola-nuts, it also has some cultural and social values. According to Wood (2017), kola nut has a ubiquitous presence in Yoruba culture. It connotes different meanings to different situations in Ekiti state. It is highly valued in traditional ceremonies. It forges and strengthens bonds among the people. It is regarded as one of the

original immaterial and immortal divinities in the universe, known in Yoruba as *Irun mole*. It is presented by the groom's family to the bride's family for the traditional Yoruba wedding ceremony where it signifies fertility and protection from evil (Wood, 2017; Bawa, and Suuk 2019).

Despite the significance of Kola-nuts to the culture of Ekiti state, research efforts are concentrated on the economic values. While existing studies, such as Akinagbe and Ikusika (2016), examined household roles in kola nut production and marketing in Ekiti State, there is a dearth of information on the sociocultural influences on kola nut production in the region. This gap underscores the necessity for further studies to explore these sociocultural dimensions. The primary objective of the study is to determine the sociocultural factors influencing kola-nut production in Ekiti State. The specific objectives include describing the socio-economic characteristics of kola-nut farmers in the study area; ascertaining the level of kola-nut production; determining the extent to which social and cultural values influenced kola-nut production and identify the constraints to kola-nut production in Ekiti State.

METHODOLOGY

The study was carried out in Ekiti state, Nigeria. Ekiti State, located in the southwestern region of Nigeria, covers a land area of approximately 6,353 square kilometres. It lies between latitude 7°15'N

and 8°5'N and longitude 4°45'E and 5°45'E. The state is predominantly inhabited by the Yoruba ethnic group, and Yoruba language is widely spoken, with various Ekiti dialects. As of the 2006 national census, Ekiti State had a population of about 2.4 million, with current estimates placing it at 3.5 million due to natural growth (Ekiti State Government, 2023). The population is largely rural and agrarian. Ekiti State is known for its fertile soil and favorable climate, which support the cultivation of both food and cash crops. Major food crops include yam, cassava, maize, and rice, while cash crops such as cocoa, oil palm, and kola nut are also widely cultivated. The state's economy is heavily dependent on agriculture, with a significant proportion of the population engaged in farming. Other notable features include a high literacy rate compared to national averages and a reputation for producing scholars, which has earned it the nickname "Fountain of Knowledge."

A multi-stage sampling technique was used in the selection of the respondents for the study. In the first stage, three out of 16 Local Government Areas were purposively selected due to the predominance of kola-nut producers in the areas. The second stage involves a random selection of 5 villages from each LGA to give a total of 15 villages. The third stage entails a snowball selection of eight kola-nut

producers from each village/community, which gave a total sample size of 120 respondents for the study. A structured interview schedule was used for data collection. Data collected were analysed using descriptive statistics such as frequency counts and percentages and mean. The extent to which social and cultural values influence kola nut production was determined using a 5-point Likert-type rating scale of Large Extent (LE), Somewhat Extent (SE), Undecided (UD), low extent (LE) and No Extent (NE), on a scale of 5 to 1 point. The results were analysed using frequencies and percentages. The constraints to social and cultural values on kola nut production were determined using the same procedure.

RESULTS AND DISCUSSIONS

Socioeconomic characteristics

The result in Table 1 shows that 81.7% of the respondents were male. The mean age of the respondents was 60.5 years, an indication of the ageing population of kola-nut farmers in the study area, which can negatively influence the sustainability of the plantations, especially if there are no succession plans by the farmers for the takeover of their farms after their demise. Most (79.0 %) of the respondents were married, and 70.0% had no occupation other than farming.

Table 1: Socioeconomic Characteristics of the Respondents

Variables	Frequency	Percentage
Gender		
Male	98	81.7
Female	22	18.3
Age		
31-60 years	58	48.2
>61 years	62	50.8
Marital status		
Single	05	4.2
Divorced	08	9.6
Married	97	80.3
Widow	12	10.0
Secondary occupations		
Farming	84	70.0
Artisan	14	11.7
Civil servants	07	5.8
Trading	15	12.5
Highest Qualification		
No formal education	26	21.7
Adult education	16	13.3
Primary education	28	23.3
Secondary education	34	28.3
Tertiary education	16	13.3
Religion		
Islam	32	26.7
Christianity	68	56.7
African Traditional Religion	20	16.6

A majority (78.3%) of the respondents were literate and they cut across all the main religious practices in the area, with %56.7%, 26.7% and 16.6% practising Christianity, Islamic and African Traditional religions, respectively. It shows that Kola-nut production in Ekiti state is dominated by male literate farmers, mostly married, who are relatively old and cut across all the religious practices in the study area. The socioeconomic characteristics of kola-nut farmers in Ekiti state are similar to farmers in Niger state and Southeastern Nigeria as reported by Unya (2021).

Level of kola-nut production

In determining the level of kola nut production, the farm size as well as the quantity produced annually were considered. The result in Figure 1 indicates that 39.0% of the respondents cultivated between 1 and 2.5 hectares of kola nut farm with a mean farm size of 1.8 hectares, an indication of small-scale production. It is important to note that kola-nuts were cultivated along with cocoa plantations. It suggests that kola nut production in Ekiti State is largely small-scale. This small farm size limits economies of scale and implies relatively low output levels per farmer, which could affect market surplus, income generation, and the potential for commercialisation. Oluwalana *et al.* (2016), in their study of kola nut production in Ogun State, indicated that the average farm size for kola nut cultivation was 2.71 hectares, suggesting small-scale operations. Additionally, it was observed that kola nut is often intercropped with other crops, which may imply its secondary status in some farming systems. They emphasised the need for improved support and market linkage to boost production. Ashaye *et al.* (2021) also reported that

low investment and poor access to credit among kola nut farmers contribute to stagnated production levels, despite the crop's cultural and economic value in southern Nigeria.

Additionally, the fact that kola nut is often intercropped with cocoa suggests that it is not the primary crop for many farmers but is grown as part of a mixed farming system, possibly for risk management or household use. This intercropping practice might also lead to sub-optimal yield due to competition for resources such as nutrients, water, and sunlight. Alawode, and Oladeji (2020) found that smallholder farmers in southwestern Nigeria operate on small land sizes, which constrain productivity and income levels. They also noted that intercropping systems are prevalent among tree crop farmers as a strategy for maximizing land use and income.

Small plot sizes may limit the adoption of mechanization and improved agronomic practices, which are critical for higher productivity. These findings highlight the need for agricultural extension support, input subsidies, and land consolidation policies that can encourage increased investment and specialization in kola nut production.

Given the predominance of smallholder, intercropped systems and the average farm size of 1.8 hectares, it can be concluded that the overall level of kola nut production in Ekiti State is moderate but largely underdeveloped. Despite favourable agroecological conditions, limited specialization, low input use, and small farm sizes constrain expansion and productivity. The state holds potential for increased production if efforts are made to provide credit, improved planting materials, extension services, and access to markets.

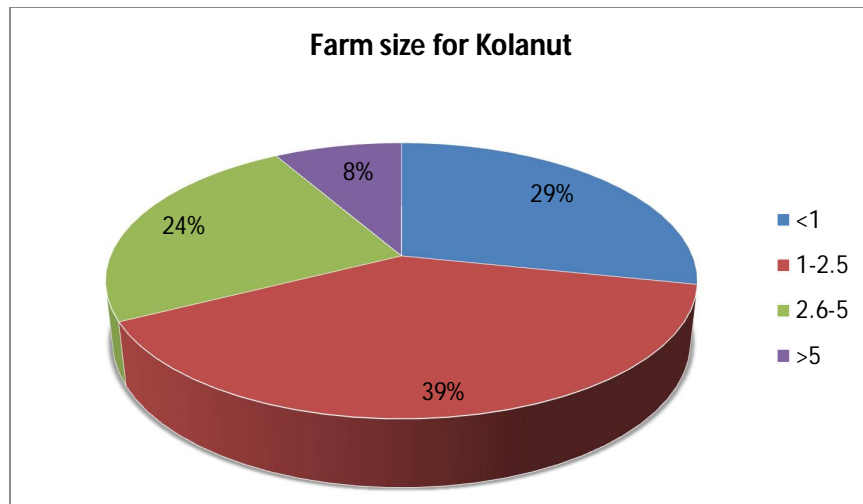


Figure 1: Size of kola nut farms

The Quantity of kola-nuts harvested annually

The data presented in Figure 2 indicates that a significant majority (76.7%) of respondents harvest

between 1 to 50 bags of kola nuts annually, while 10.8% harvest between 51 to 100 bags. Considering each bag is approximately 25 kg, the average annual

production per farmer stands at 16 bags, totalling 400 kg. This production level is considerably below the national average yield of 500 kg per hectare reported by the Cocoa Research Institute of Nigeria (CRIN, 2021). The low production levels can be attributed to several factors. Oluwalana *et al.* (2016) highlighted that most kola nut farmers operate on small-scale farms, with 43% cultivating between 2 to 2.9 hectares and only 1% managing farms above 5 hectares. Additionally, the age of kola trees plays a crucial role; older trees tend to have reduced productivity, and many existing plantations consist of ageing trees that have surpassed their peak production years (CRIN, 2021).

Furthermore, the lack of adoption of improved cultivation practices and limited access to high-

yielding kola nut varieties contribute to the suboptimal yields. CRIN has developed improved propagation techniques and high-yielding hybrids that can produce up to 2,000 nuts per tree annually, compared to the 250 nuts from unselected materials. However, the dissemination and adoption of these innovations remain limited among farmers (CRIN, 2021). The current average annual production of 400 kg per farmer underscores the need for interventions aimed at rejuvenating kola nut plantations, adopting improved agronomic practices, and facilitating access to high-yielding varieties to enhance productivity and ensure the sustainability of kola nut farming in Ekiti State, Nigeria.

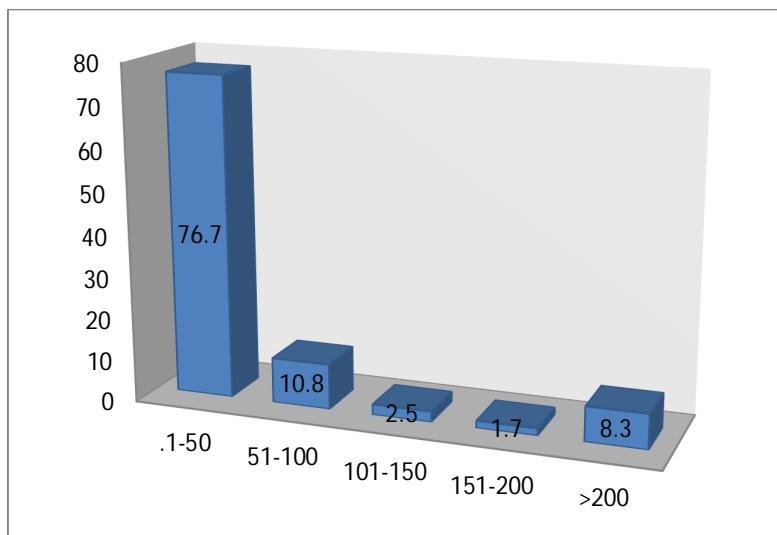


Figure 2: Quantity of kola nut harvested annually

Influence of socio-cultural factors on kola-nut production

The findings presented in Table 2 revealed that socio-cultural factors significantly influence kola-nut production among respondents. Notably, the highest mean score was recorded for the economic motivation for kola cultivation ($\bar{x} = 4.60$, $SD = 0.54$), highlighting that beyond its cultural significance, kola nut remains a critical income-generating crop for rural farmers. This aligns with the report by Adebayo *et al.* (2021), which emphasised the dual economic and socio-cultural functions of traditional crops like kola nut in sustaining rural livelihoods. Cultural and symbolic functions such as usage during traditional ceremonies ($\bar{x} = 4.18$), hospitality and respect ($\bar{x} = 4.07$), and as a requisite item in traditional marriage rites ($\bar{x} = 4.22$) also recorded high scores, supporting earlier findings by Akinyemi (2010) and Okafor (2015) that kola nut plays a central role in rituals, social cohesion, and symbolic communication within Nigerian communities. It also supported the assertion by Unya (2021), who

described kola-nut as “*the king of fruits*”, integral to rites of passage, traditional marriage ceremonies, and kinship reinforcement, particularly among the Igbo ethnic group. Furthermore, the spiritual uses of kola nut—including for prayer ($\bar{x} = 3.85$), sacrifice ($\bar{x} = 3.97$), and appeasement of deities ($\bar{x} = 3.55$)—underscore its religious relevance, consistent with Falade and Okunade (2020), who noted that indigenous belief systems often dictate agricultural choices in many African settings. It echoes Lovejoy (2007) and Sprague (2018), who found that kola-nut holds symbolic and religious importance in Nigeria, Ghana, Sierra Leone, and Gambia—used in prayers, rituals, and oath-taking to signify sincerity and spiritual alignment.

The recognition of kola nut as a symbol of unity ($\bar{x} = 3.84$) and acceptance ($\bar{x} = 3.73$) further demonstrates its embeddedness in communal values and identity. Obineche (2017) explains that the presentation and sharing of kola-nut at events symbolize unity, peace, and gratitude, reinforcing communal ties. Additionally, its medicinal attributes

($\bar{x} = 4.10$) reinforce its multifunctionality, aligning with the findings of Asogwa *et al.* (2012), who documented that kola-nut contains caffeine and theobromine, compounds known for their stimulant and therapeutic effects in traditional medicine. Adegoke and Odesanmi (2019), also identified the nut's pharmacological properties. Collectively, these findings reinforce the notion that kola-nut is not merely an agricultural commodity, but a cultural

institution whose production is influenced by a complex mix of economic, spiritual, and social values. Policy makers and agricultural extension agents must therefore recognize and integrate these socio-cultural dimensions into development programs aimed at revitalising kola-nut production in Ekiti State (Ogunniyi *et al.*, 2012; Adetunji and Rauf, 2015).

Table 2: Influence of socio-cultural values on kola-nut production

Item	LE (%)	SE (%)	UD (%)	LOE (%)	NE (%)	Mean
I produce Kola nut for economic purposes.	62.5	35.0	2.5	0.0	0.0	4.60
Kola nut production is a symbol of hospitality, respect and friendship.	41.6	43.3	2.5	5.8	6.7	4.07
Kola nut production is influenced by usage during traditional ceremonies.	46.7	41.7	2.5	1.7	7.5	4.18
I produce kola nut because of its prayer value for longevity.	24.2	52.5	10.0	10.8	2.5	3.85
Kola nut is an object of worship and sacrifice.	36.7	40.0	9.2	11.7	2.5	3.97
The use of kola nut to appease to gods for guidance influences my production.	19.2	44.2	19.2	7.5	10.0	3.55
Kola is a symbol of acceptance.	20.0	42.5	28.3	9.2	0.0	3.73
I produce Kola nut because I know it enhances unity.	29.2	35.0	26.7	9.2	0.0	3.84
I produce kola because it symbolizes good fortune.	19.2	60.0	15.0	5.8	0.0	3.93
I produce Kola nut because of its medicinal properties.	31.7	53.3	8.3	6.7	0.0	4.10
Kola nut is a must item in the traditional marriage engagement list.	39.2	55.0	0.0	0.0	5.8	4.22

Constraints to kola nut production

Table 3 presents the constraints encountered by kola-nut producers, measured through the respondents' level of agreement using a 4-point Likert scale. The constraints with the highest mean scores indicate the most severe or widely experienced issues, while those with lower means are considered less significant by respondents. The most critical constraint identified is lack of access to credit facilities ($\bar{x} = 3.41$, $SD = 0.64$). This finding aligns with the broader literature on agricultural finance in Nigeria, where smallholder farmers often face exclusion from formal credit systems due to lack of collateral, high interest rates, and limited financial literacy (Akinola, 2013; Oboh and Ekpebu, 2011). Credit is essential for acquiring inputs, labour, and agrochemicals, and its absence severely limits productivity and farm expansion. Unfavourable weather conditions ($\bar{x} = 3.38$, $SD = 0.60$) also ranked highly. This is consistent with findings from Nwajiuba (2012), who emphasised the vulnerability of perennial crops like kola-nut to climate variability, particularly erratic rainfall and increasing temperatures, which affect flowering, fruiting, and disease resistance. The high cost of pesticides ($\bar{x} = 3.20$, $SD = 0.99$) and poor access to improved kola-nut seedlings ($\bar{x} = 3.17$, $SD = 0.90$) are major production challenges. These highlight the systemic issues of input supply and technology

dissemination in the kola-nut value chain. According to Agwu, Anyanwu, and Mendie (2012), input affordability and accessibility remain significant constraints to smallholder farmers, especially in tree crop production where costs are sustained over several years before returns are realized. Old and moribund trees ($\bar{x} = 3.07$, $SD = 0.92$) point to the ageing nature of kola plantations, indicating low replanting rates and inadequate rejuvenation efforts. This suggests a need for targeted intervention in farm rehabilitation programs, as suggested by Adebayo *et al.* (2020), who emphasised the role of public-private partnerships in revitalizing tree crop plantations in West Africa. Furthermore, inadequate extension services ($\bar{x} = 2.87$) and lack of knowledge of improved farm practices ($\bar{x} = 3.01$) reinforce the widespread concern over weak agricultural extension systems. Extension services are vital for transferring innovations and building capacity, yet coverage and specialization in crops like kola-nut remain poor (Arokoyo, 2003; Olowu and Oyedokun, 2000).

Lower scoring constraints like decline in cultural values of kola-nut ($\bar{x} = 3.03$) and infertile farmland ($\bar{x} = 2.67$) may reflect localized or more subjective factors. While cultural decline may affect kola-nut's ceremonial demand, physical production

constraints like pests and diseases ($\bar{x} = 2.66$) and infertile soils continue to undermine productivity.

These findings reflect the complex interplay of biological, economic, environmental, and institutional constraints undermining kola-nut production. Comprehensive policy interventions are

required, focusing on farmer training, access to improved planting materials, credit facilitation, disease management, and revitalisation of cultural relevance through agro-tourism and community engagement.

Table 3: Respondents' constraints to kola-nut production

Item	SA (%)	A (%)	U (%)	D (%)	Mean
Most of the kola-nut trees are old and unproductive	37.5	35.0	16.7	6.7	3.07
The kola trees host many diseases	17.5	40.0	14.2	16.7	2.66
Infertile farmland	28.3	17.5	19.2	18.3	2.67
Difficulty in establishing new farms	30.0	31.7	23.3	8.3	2.90
Decline in the cultural values of kola nut	43.3	23.3	10.0	15.0	3.03
High cost of pesticides	43.3	23.3	10.0	8.3	3.20
Lack of access to credit	49.2	42.5	8.3	0.0	3.41
Unfavourable weather conditions	43.3	48.3	5.8	0.0	3.38
Inadequate knowledge of improved practices	29.2	51.7	11.7	7.5	3.01
Poor information on preservation strategies	37.5	47.5	8.3	3.3	3.25
Unstable market prices	34.2	26.7	16.7	16.7	2.82
Lack of improved kola-nut seedlings	40.0	39.2	8.3	8.3	3.17
Lack/low extension services	25.8	34.2	21.7	8.3	2.87

Source: Field survey, 2021

Table 4: Socio-cultural factors influencing kola-nut production

The result of the OLS model in Table 4 shows that Income Generation ($\beta=0.916$, $p=0.011$) significantly and positively affects kola nut production. Respondents who perceive kola as a source of income are more likely to increase their production. This finding aligns with Asogwa *et al.* (2012) and Adetunji and Rauf (2015), who identified economic motivation as a primary driver for perennial crop cultivation, especially in rural Nigeria. The belief in the medicinal properties ($B = 0.055$, $p = 0.008$) of kola nut, such as its use in treating headaches, boosting energy, and aiding digestion, positively influences production. This supports Egharevba *et al.* (2015), who noted the ethnomedicinal relevance of kola nut in traditional medicine systems in West Africa. The use of kola nut in traditional ceremonies ($B = 0.085$, $p = 0.000$), especially marriage rites, was the most significant predictor with the highest beta coefficient ($\beta = 0.444$). This demonstrates that cultural practices remain strong motivators for kola nut cultivation, consistent with Ukaegbu (2019) and

Ndukwe *et al.* (2017), who emphasised kola's role as a symbol of hospitality, peace, and respect in African culture. Kola nut's role in religious and spiritual rituals ($B = 0.081$, $p = 0.000$), including sacrifices and prayers for longevity or guidance, significantly influences production. This finding is supported by Idowu *et al.* (2016), who reported the continued integration of kola nut in Yoruba cosmology and divination rituals.

The Non-significant Variables include age, sex and marital status of the respondents, an indication that they are not significant in influencing kola nuts production

The regression analysis underscores that cultural relevance, medicinal use, income-generating potential, and spiritual significance are the main socio-cultural factors influencing kola nut production. These findings align with the cultural-ecological model, which suggests that agricultural practices are shaped not only by economic conditions but also by values, beliefs, and traditions (Netting, 1993).

Table 4: Linear regression analysis of socio-cultural factors influencing kola-nut production

	Beta	t-value	Sig.
(Constant)		0.904	0.368
Age	-0.008	-0.085	0.933
Sex	0.135	1.733	0.086
Marital Status	-0.144	-1.698	0.092
Income generation	0.228	2.578	0.011
Medicinal values	0.034	4.503	0.008
Cultural value (traditional weddings)	0.444	5.813	0.000
Religious/ spiritual relevance	2.578	0.011	0.000

This highlights the need for agricultural and cultural policy frameworks that integrate indigenous values when promoting crop production, especially for culturally significant crops like the kola nut. Extension programs should leverage these socio-cultural motivations to revive interest, especially among youth and women, in the sustainable cultivation of kola.

CONCLUSION AND RECOMMENDATIONS

This study assessed the influence of socio-cultural values on kola nut production in Ekiti State, Nigeria, with specific attention to farmers' socio-economic characteristics, production levels, cultural motivations, and constraints limiting productivity. The findings reveal that kola nut farmers are predominantly elderly, married men with limited formal education, often combining kola farming with secondary occupations such as trading and artisanal work. Although not the primary source of income for many, kola nut production remains deeply embedded in local socio-cultural traditions. Socio-cultural values were found to exert a substantial influence on kola nut production. As evidenced in Table 2, a majority of respondents associated kola nut cultivation with traditional ceremonies ($\bar{x} = 4.18$), hospitality and friendship ($\bar{x} = 4.22$), medicinal use ($\bar{x} = 4.10$), and prayer for longevity ($\bar{x} = 3.95$). These symbolic meanings highlight the crop's entrenched cultural and spiritual significance, particularly in community cohesion, rituals, and heritage preservation. Such findings confirm that kola nut farming is not merely economically motivated but culturally driven, especially among older farmers who uphold traditional values.

However, as shown in Table 3, kola nut production is constrained by multiple challenges. Prominent among these are lack of access to credit ($\bar{x} = 3.41$), unfavourable weather conditions ($\bar{x} = 3.37$), inadequate knowledge of improved practices ($\bar{x} = 3.34$), high cost of pesticides ($\bar{x} = 3.13$), and ageing, unproductive trees. These constraints are compounded by weak extension services and limited youth interest, threatening the long-term sustainability of kola nut farming.

Regression analysis further affirmed that income generation ($\beta = 0.916$, $p = 0.011$), cultural relevance ($\beta = 0.085$, $p = 0.000$), medicinal value ($\beta = 0.055$, $p = 0.008$), and spiritual significance ($\beta = 0.081$, $p = 0.011$) were statistically significant drivers of kola nut production. This underscores the need to address both the socio-cultural and agronomic dimensions of kola farming in development efforts.

To revitalise kola nut production in Ekiti State, a multi-pronged strategy is necessary. First, rejuvenation of existing kola farms should be

prioritised through the distribution of improved, high-yielding seedlings and hands-on training in modern agronomic techniques. Strengthening cultural education by integrating kola nut's symbolic importance into school curricula and community programmes can help sustain youth interest and intergenerational knowledge transfer. Financial inclusion initiatives such as kola-specific low-interest credit schemes and cooperative-based savings and loans structures should be implemented to ease capital constraints. Agricultural extension systems should be strengthened with a focus on pest and disease management, post-harvest practices, and adaptation to changing weather conditions. Establishing value chains through processing, packaging, and branding of kola nut and its derivatives can increase profitability and attract new markets. Additionally, the cultural, medicinal, and spiritual relevance of kola nut should be leveraged in branding and public awareness campaigns to boost domestic consumption and heritage tourism. Finally, state and national agricultural policies must incorporate kola nut into strategic development plans, with support for research into climate-resilient varieties, sustainable land management, and digital technologies for smallholder farmers.

REFERENCES

- Adebayo, F. A., Olagunju, K. O., and Yusuf, B. A. (2021). Socio-economic factors influencing farmers' decision to cultivate traditional crops in Southwestern Nigeria. *Journal of Rural Studies*, 82, 141–150. <https://doi.org/10.1016/j.jrurstud.2021.01.003>
- Adebayo, O. A., Olagunju, F. I., and Oyekunle, O. (2020). Rejuvenating Tree Crop Plantations in Nigeria: Challenges and Prospects. *Journal of Agricultural Extension*, 24(2), 55–66.
- Adebayo, S. A., Adewale, B. D., and Ogunbayo, S. A. (2019). Challenges of kola nut (*Cola spp.*) production in Nigeria: A case study of Ondo State. *Nigerian Journal of Agricultural Extension*, 20(2), 45–52.
- Adegoke, G. O., and Odesanmi, A. T. (2019). Nutritional and medicinal benefits of kola nut: A review. *Food Science and Nutrition*, 7(5), 1561–1570. <https://doi.org/10.1002/fsn3.1112>
- Adetunji, M. O., and Rauf, M. O. (2015). Socio-economic constraints to kola-nut production in Nigeria. *African Journal of Agricultural Research*, 10(23), 2366–2371.
- Agbebaku, E. E. O., Ogundeji, B. A., Baba Nitsa, M., Ogunjobi, T. E., Olorunmota, R. T., Awodumila, D. J., Famuyiwa, B. S., Dada, A. O., and Mustopha, F. B. (2020). Information trend on kola production and

- the need for kola rehabilitation techniques in Nigeria. *World Journal of Innovative Research*, 9(5), 100–106. <https://doi.org/ISSN:2454-8236> (Note: include DOI if available, else keep as is)
- Agwu, A. E., Anyanwu, A. C., and Mendie, E. I. (2012). Adoption of improved agricultural technologies disseminated via radio: The case of rice farmers in Nigeria. *African Journal of Agricultural Research*, 7(35), 4945–4950.
- Akinagbe, O. M., and Ikusika, F. S. (2016). Role of household members in kolanut production and marketing in Ekiti State, Nigeria. *Journal of Agricultural Extension*, 20(2), 44–58
- Akinola, A. (2013). Smallholder Farmers and Access to Credit in Nigeria: Evidence from the National Living Standard Survey. *Global Journal of Agricultural Economics, Extension and Rural Development*, 1(1), 23–30.
- Akinyemi, A. (2010). *Orature and Yoruba aesthetics: A study of oral tradition and literary forms*. Palgrave Macmillan.
- Alawode, O. O., and Oladeji, O. A. (2020). Land access, land use conflict, and smallholder commercialization in Southwest Nigeria. *Open Access Journal of Agricultural Research*, 5(3), 000251.
- Arokoyo, T. (2003). ICTs in the Transformation of Agricultural Extension: The Case of Nigeria. Paper presented at the CTA Observatory on ICTs, Wageningen.
- Ashaye, W. O., Alao, B. I., Daramola, R. B., Chukwu, U. C., and Kupoluyi, O. O. (2021). Socio-economic characteristic and innovation technology of kolanut production in Ogun State. *JABU International Journal of Agriculture and Food Science (IJAFS)*, 11, 1659–1671.
- Asogwa, E. U., Mokwunye, F. C., and Yahaya, M. (2012). Kola nut production, processing and marketing in the South-Eastern States of Nigeria. *Journal of Agriculture and Social Research*, 12(1), 34–41.
- Bawa, K., and Suuk, L. (2019). The kola nut: Its symbolic significance in Chinua Achebe's *Things Fall Apart*. *International Journal on Studies in English Language and Literature*, 7(8), 26–40.
- Cocoa Research Institute of Nigeria (CRIN, 2021). Kola https://crin.gov.ng/programmes/kola/?utm_source=chatgpt.com.
- Egharevba, R. K. A., Kunle, O. F., and Orishadipe, A. T. (2015). Ethnopharmacological survey of plants used for the treatment of headaches in Ibilu, Edo State, Nigeria. *Research Journal of Phytochemistry*, 9(1), 1–8.
- Ekiti State of Nigeria (2023). Ekiti State of Nigeria Facts and Figures 2023. chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/<https://www.ekitistate.gov.ng/wp-content/upload>.
- Falade, J. B., and Okunade, E. O. (2020). The role of traditional belief systems in shaping rural agricultural practices in Nigeria. *African Journal of Indigenous Knowledge Systems*, 19(2), 32–45.
- Frederick, A.-A., Oduro, S. S., Doe, E. K., Asani, M., Nyadanu, D., and Konlan, S. (2021). Supply-side practices and constraints of the kola nut (*Cola nitida* (Vent) Schott. and Endl.) value chain in Ghana: A descriptive evidence. *International Journal of Agronomy*, Article ID 9942699, 16 pages. <https://doi.org/10.1155/2021/9942699>
- Jayeola, C. O. J., and Olayiwola, O. (2018). Production of bioactive compounds from waste. In *Kola nuts*. Retrieved from <https://www.sciencedirect.com/topics/agricultural-and-biological-sciences/kola-nuts>
- Lovejoy, P. E. (2007). Kola nuts: The coffee of Central Sudan. In J. Goodman, P. E. Lovejoy, and A. Sheratt (Eds.), *Consuming habits: Drugs in history and anthropology* (pp. 81–96). Routledge.
- National Institute of Aging. (2019). *Important nutrients to know: Proteins, carbohydrates, and fats*. USA.gov. <https://www.nia.nih.gov/health/important-nutrients-know-proteins-carbohydrates-and-fats>
- Ndagi, F. D., Babalola, I. U., Mokwunye, C. F., Anagbogu, I. A., Aderolu, O., Ugioro, E. U., Asogwa, M., Idrisu, M., and Mokwunye, F. C. (2012). Potentials and challenges of kolanut production in Niger State, Nigeria. *ISRN Agronomy*, 2012, Article ID 492394, 9 pages. <https://doi.org/10.5402/2012/492394>
- Netting, R. M. (1993). Smallholders, householders: Farm families and the ecology of intensive, sustainable agriculture. Stanford University Press.
- Nwajiuba, C. (2012). Climate Change and Rural Livelihoods in Nigeria. In N. Uzoma (Ed.), *Rural Livelihoods and Sustainability in Nigeria*. Ibadan: Spectrum Books
- Obineche, J. O. (2017). Kola nut: Revisiting the Igbo socio-cultural values and identity. *International Journal of Arts and Humanities (IJAH)*, 6(2), 153–165.
- Oboh, V. U., and Ekpebu, I. D. (2011). Determinants of formal agricultural credit allocation to the farm sector by arable crop

- farmers in Benue State, Nigeria. *African Journal of Agricultural Research*, 6(1), 181–185.
- Ogunniyi, L. T., Omonona, B. T., and Kormawa, P. M. (2012). Land ownership and technical efficiency of smallholder farmers in Nigeria: A stochastic frontier approach. *African Journal of Agricultural Research*, 7(36), 5115–5120.
- Ojo, S. O., and Ehinmowo, O. O. (2010). Economic analysis of kola-nut production in Nigeria. *Journal of Social Sciences*, 22(1), 1–5. <https://doi.org/10.1080/09718923.2010.1189277>
- Okafor, R. C. (2015). Cultural symbolism of kola nut in Igbo land. Enugu: University of Nigeria Press
- Olowu, T. A., and Oyedokun, F. O. (2000). Farmer perception of problems in the use of extension communication channels in Oyo State, Nigeria. *Journal of Agricultural Extension*, 4(1), 54–62
- Oluwalana, E. O., and Olayemi, F. F. (2016). An analysis of yields of kola-nut production, processing and marketing in Sagamu LGA, Ogun State, Nigeria. *Journal of Humanities, Social Science and Creative Arts*, 11(1), 1–10. Retrieved from <https://journal.funaab.edu.ng/index.php/JHSSCA/article/view/1695>
- Onwuejeogwu, M. A. (2007). *The social anthropology of Africa: An introduction*. Heinemann Educational Books.
- Sprague, K. (2018). *The kola nut: West African commodity in the Atlantic World*. African Study Centre, Los Angeles, USA.
- Ukaegbu, J. O. (2019). The kola nut: As an Igbo cultural and social symbol. *The Igbo Network*.
- Unya, I. U. (2021). The historical significance and role of the kola nut among the Igbo of Southeastern Nigeria. *Journal of Religion and Human Relations*, 13(1). <https://dx.doi.org/10.4314/jrhr.v13i1.13>
- Wood, F. E. (2017). *Objects and immortals: The life of Obi in Ifa-Oriṣa religion* [Doctoral dissertation, Harvard University]. Harvard University Graduate School of Arts and Sciences.
- Yalwa, I. R., and Bello, A. M. (2017). Determination of caffeine content in some varieties of kolanut (*C. acuminata*). *Bayero Journal of Pure and Applied Sciences*, 10(1), 247–251