



Assessment of Coffee Production and Consumption Status Among Farmers in Ogun State, Southwest, Nigeria

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ABSTRACT

Production and consumption of coffee among farmers in Ogun state in 2019 – 2021 was assessed. Obafemi Owode and Sagamu Local Government Areas were purposively selected; random sampling was used to obtain data from 138 farmers with structured questionnaires. Descriptive statistics, composite score analysis and linear regression were used in data analysis. Results on age distribution showed that 77 % of the farmers were between 31 and 60 years (mean = 48 ± 11), the gender was 88 % male. Most farmers (77 %) did not source coffee planting materials from reputable outlets, 64 % adopted the recommended field spacing and shade plants in establishment. In 2019 and 2020, (6, 87 and 7) % of the farmers constituted the low, intermediate and high categories of production respectively. However, in 2021 farmers in the low and high categories reduced by 1.4 and 5.7 % respectively, the intermediate increased by 5.7 %. On the consumption of coffee, 42 % consumed it fortnightly. In 2019, there were more farmers in the low level of consumption (78.3 %) than the intermediate and high levels of 4.4 and 17.3 % respectively. Similar pattern was observed in 2020 and 2021. This study revealed a reduction in coffee production and consumption in Ogun state due to poor market, cost of labour, lack of planting materials, production techniques and scarce land resources. Major determinants of consumption were price, taste, and no budget provision. It was concluded that more sensitisation on production, capacity building and improvement on taste could enhance production and consumption of coffee among farmers in Ogun state.

Keywords: Coffee, consumption, economic growth, production and sensitization

INTRODUCTION

Coffee (*Coffea* species) is grown in about eighty nations worldwide, traded by over 50 nations where it serves as a source of foreign exchange earnings (ICC, 2015). Additionally, it has generated millions of jobs in the countries of production which produce $\geq 9,000,000$ tons of green beans each year (ICC, 2015). With global trade reaching \$10 billion, coffee is the second-most popular beverage

after water globally (Iscaro, 2014). The majority of coffee is drunk in industrialized nations like USA, Finland, Belgium, Sweden, and Japan (Agbongiarhuoyi, *et al.*, 2007). Averagely, about 3.5 million cups of coffee are drunk every day globally (Akinfenwa, 2019). According to the International Coffee Organization (ICO, 2021) coffee exports increased from 10.47 million bags in July, 2020 to 10.61 million bags in July 2021.

However, in Nigeria, poor farming techniques, inadequate mechanization, poor funding, climate change among other factors inhibits coffee production (PwC, 2017; Mohammed *et al.*, 2013, and Ayoola *et al.*, 2012). Depending on the varieties cultivated, factors like climatic, weather and soil conditions greatly limit coffee production (Ayoola *et al.*, 2012). The 2020/2021 growing season in Nigeria was predicted to experience a decrease in coffee production as a result of delayed rains in some of the producing regions (Malhi, *et al.*, 2021; Bjornlund *et al.*, 2020). In addition, climate change is associated with rise in the outbreak of pests and diseases (Gizaw, *et al.*, 2021) which greatly inhibited coffee production thus, reducing farmers' income. Most coffee farmers in Nigeria have abandoned their farms due to old age and moribund plantations; poor price for coffee beans stemming from poor primary processing of the berry thereby resulting into declined production (Modinat *et al.*, 2020, Ogundeji *et al.*, 2019, Aderolu *et al.*, 2014). There is therefore the need to assess the current status of coffee production and consumption among farmers in Ogun state in order to know their constraints and sensitize them on the importance of returning to coffee production, hence the justification for this study.

Objectives of the Study

- i. To identify socio economic characteristics of coffee producers and consumers in the study area;
- ii. To determine the level of coffee production and consumption;
- iii. To assess the factors influencing production and consumption of coffee in the study area.

MATERIALS AND METHODS

The project was carried out among coffee farmers in Ogun state. Obafemi Owode and Sagamu Local Government Areas (LGAs) were purposively selected in the state based on the concentration of coffee farmers in these areas. With the aid of structured questionnaires, data were collected from 138 farmers that were randomly selected from the communities. The data obtained were analysed

using descriptive statistics, composite score analysis and linear regression.

Composite Score Analysis

This was used to measure:

- 1.) The level of coffee production into 3 categories namely:
 - (i) High category = between highest coffee production (kg) to (mean + S.D) points
 - (ii) Medium (intermediate) = between upper and lower categories
 - (iii) Low category = between (mean – S.D) points to 0 point.
- 2.) The levels of coffee consumption were also categorised into 3 namely:
 - (i) High category = between highest coffee consumption (kg) to (mean + S.D) points
 - (ii) Medium (intermediate) category = between upper and lower categories
 - (iii) Low category = between (mean – S.D) points to 0 point.

RESULTS AND DISCUSSION

Demographic Characteristics of Coffee Farmers in Obafemi Owode and Sagamu LGAs of Ogun State

The percent farmers interviewed were 51 and 49 % from Obafemi Owode and Sagamu LGAs respectively (Table 1). The gender of the respondents showed that majority (88 %) of them was male. This was in tandem with the findings of Kangile *et al.*, (2022) who reported gender disparity in coffee production in Tanzania. The mean household size, as shown in Table 1, was 7 ± 4 persons with 46 % of the households having 6-10 membership. Most (94 %) of them were married; and majority (90 %) had farming as their main occupation, while most (87 %) of them resides in the rural communities (Table 1). Majority (77 %) were between 31 and 60 years in age with mean of 48 ± 11 years (Figure 1). This is an indication that most of the coffee farmers were in their active years thus had energy to work and be actively involved in coffee production. Majority of these farmers (78 %) were literate with education background ranging from primary to tertiary level (Figure

2). Adeyemi, et al., (2020) reported similar findings on the educational status of cashew farmers in Oyo and Kogi States of Nigeria which could enhance adoption of

recommended farming practices that may improve production and productivity of farmers.

Table 1: Socio Economic Characteristics of Coffee Farmers in Obafemi Owode and Saganmu LGAs of Ogun State

Variable	Frequency	%
Local government Areas		
Obafemi owode	70	50.7
Saganmu	68	49.3
Gender		
Male	122	88.4
Female	16	11.6
Household size		
1-5	58	42.0
6-10	64	46.4
10 / max	16	11.6
Mean	7±4	
Marital status		
Single	6	4.3
Married	130	94.2
Widow	2	1.5
Main occupation		
Farming	124	89.8
Trading	12	8.7
Civil Service	2	1.5
Place of residence		
Rural	120	87.0
Urban	18	13.0

Source: Field Survey (2022)

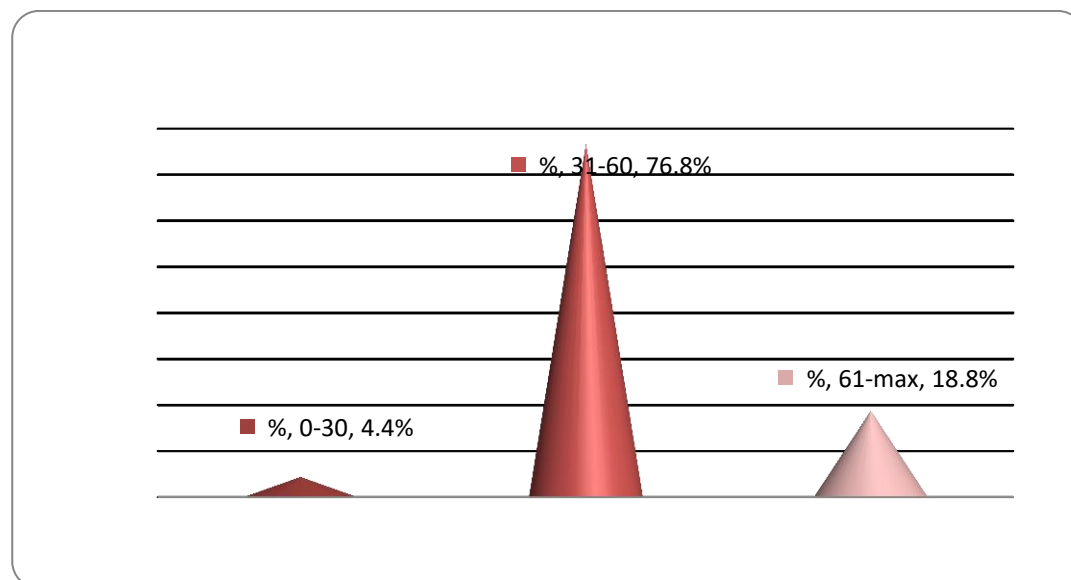


Figure 1: Age of Coffee Farmers in the Study Area

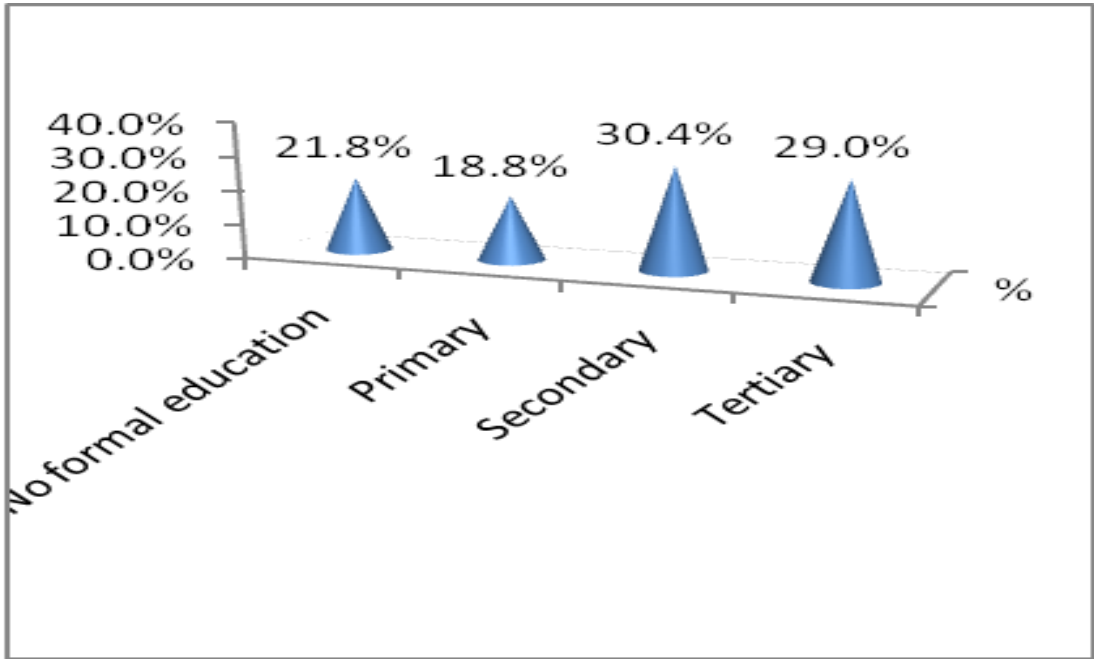


Figure 2: Educational Level of Coffee Farmers

Farmers’ Practices on Coffee Production and Consumption in Ogun State

Majority of the farmers in the studied areas were small scale holders with a mean of 1.4 ± 1.3 ha (Fig. 3) that obtained their planting materials from own farms for field expansion (Fig. 4). In Table 2, the recommended planting space of 3 x 3m and the use of plantain as shade plants were practised by 64 % of the farmers, while the effects of climate change on coffee production were acknowledged by 77 % of respondents and only 9 % of the farmers

made used of fertiliser in organic forms (poultry droppings, pig dung) and liquid forms (miracle-grow (all purpose) and super-grow). The practice of soil testing prior to fertiliser application was carried out by 4 % of the respondents, while pesticides application, mainly inform of insecticide, was done by 77 % of the farmers for control of insects like termite and leaf hoppers (Table 2). Out of the respondents, only 28% consumed coffee of which 42 % drank it at a fortnight interval (Figures 5 and 6).



Figure 3: Farm Size (ha) of Coffee Farmers

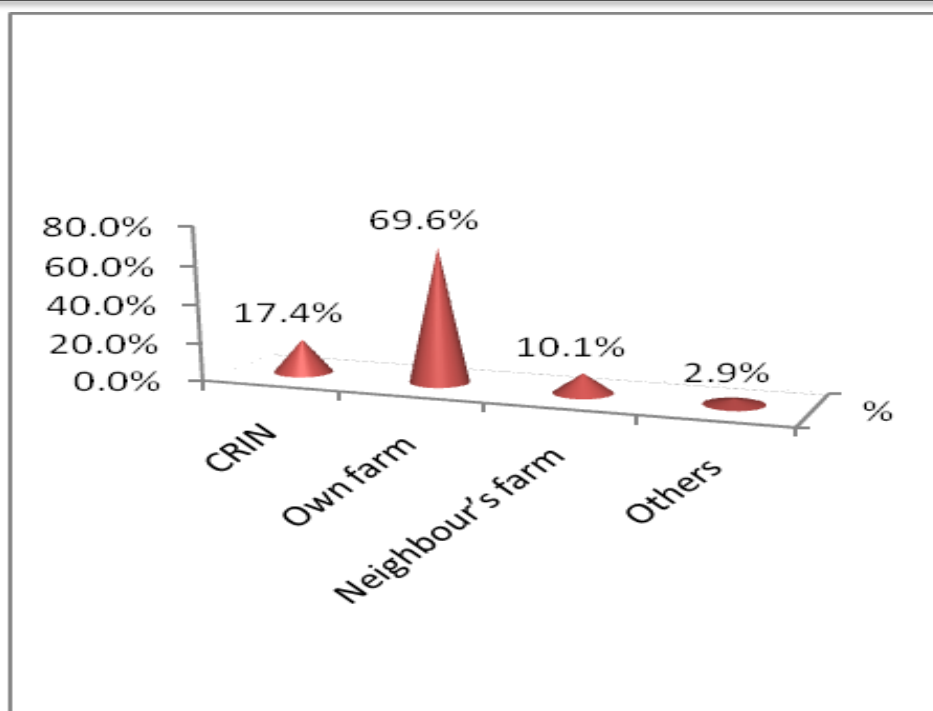


Figure 4: Source of Planting Materials

Table 2: Coffee Production Practices Among Farmers in Ogun State

Variable	Frequency	%
Plant Spacing		
Irregular	20	14.5
3 x 3m	88	63.8
2 x 2m	26	18.8
Others	4	2.9
Shade Plants		
No	50	36.2
Yes	88	63.8
Does climate change affect coffee production		
No	56	33.3
Yes	92	66.7
Apply Fertiliser		
No	126	91.3
Yes	12	8.7
Do you do soil testing before fertiliser application		
No	132	95.7
Yes	6	4.3
Do you apply pesticide		
No	36	26.1
Yes	102	73.9

Source: Field Survey (2022)

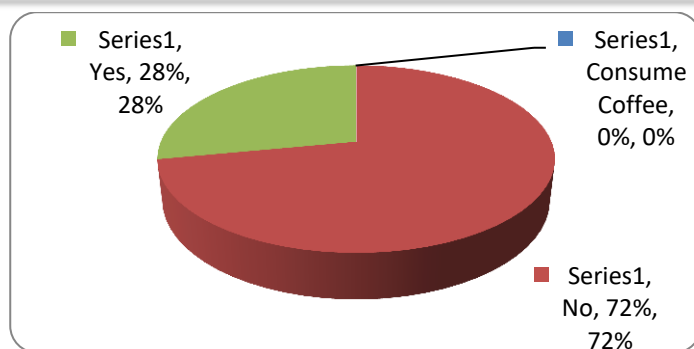


Figure 5: Coffee Consumption in the Study Area

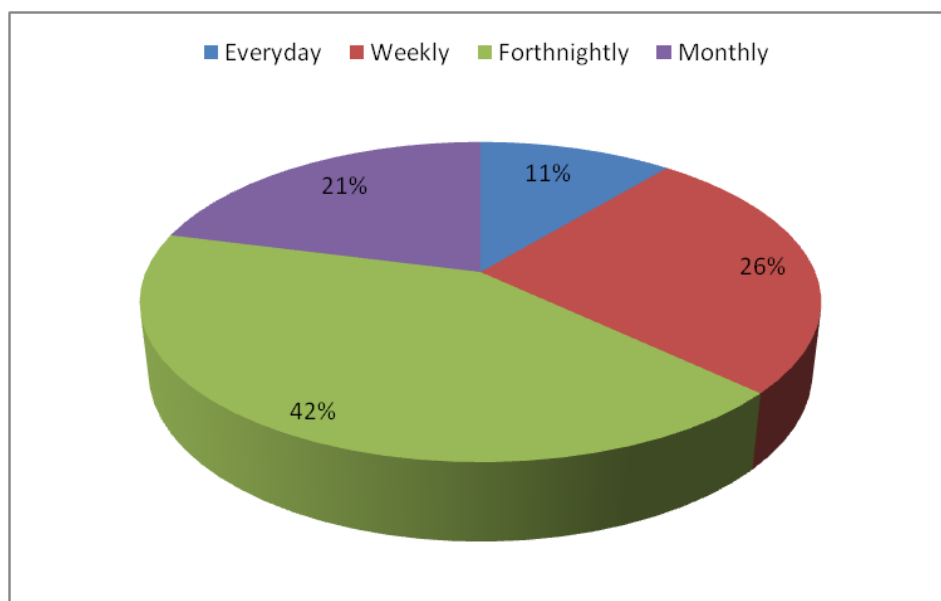


Figure 6: Frequency of Coffee Consumption in the Study Area

Production Status of Coffee in Ogun state

In 2019, coffee production status showed that the high category of production was 275-350kg, intermediate was 202-274 kg while low was 50-201 kg/ha (Table 3). In 2020, it was 200-280; 137-199 and 50-136 for high, intermediate and low categories respectively. The ranges were 207-380kg for high, 149-206kg for intermediate and 50-141 kg/ha for low in 2021. The mean coffee production in

2019 was 238 kg/ha, which declined to 168 kg/ha in the following year. However, in 2021, the mean production increased to 174 kg/ha. The increase may probably be due to the series of sensitization from different governmental and non-governmental organizations as obtained from the respondents. The highest coffee produced in each of the years under investigation followed similar pattern as reported for the mean production (Table 3).

Table 3: Mean of Coffee Production from 2019 – 2022 in Obafemi Owode and Sagamu LGAs, Ogun state

Year	Mean of production (kg)	Standard deviation	Level of production			
			High	Intermediate	Low	Highest production (kg)
2019	237.9	37.1	350- 275(237.9 +37.1)	274-202	201(237.9-37.1)- 0	350
2020	168.3	32.1	280-208 (168.3 +32.1)	199-137	136(168.3-32.1)- 0	280
2021	173.5	32.9	380-206(173.5 + 32.9)	207-142	141(173.5-32.9)- 0	380

Source: Field Survey (2022)

In 2019 and 2020, 6 % of coffee farmers constitute the low category of production, 87 and 7 % were in the intermediate and high categories respectively (Fig.7). In 2021 the percentage of farmers in the low category reduced by 1.4 % with an increase in the intermediate category by 5.7 % and reduction in the high category by 5.7 %. Over the years there has been a reduction in the production of coffee as farmers cut down their coffee trees to grow other crops (Ogundeji *et al.*, 2019). Presently, farmers are being sensitized to return to the production of coffee as there are now ready

markets for coffee produce. Production level in 2021 was higher than the 2 previous years probably as a result of the on-going sensitization on coffee production and ready markets both locally and globally. Although the bulk of the farmers were in the intermediate category which implied that they did not take coffee production as a major business, it is hoped that there would be further improvement in production as CRIN is unrelenting on her sensitization drive, the capacity building and supply of improved planting materials to the coffee farmers.

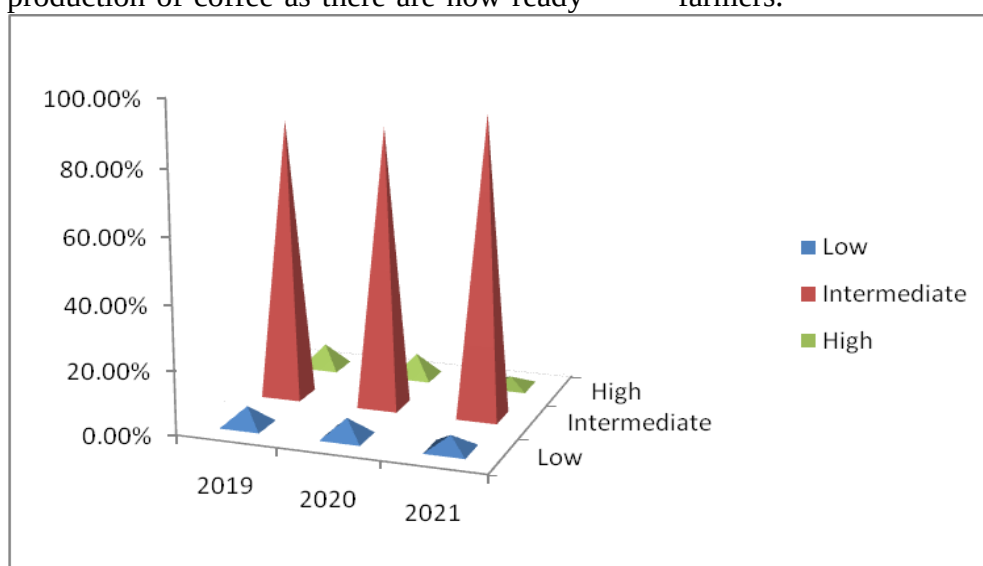


Figure 7: Levels of Coffee Production in Ogun state from 2019 – 2021

Factors Influencing the Production of Coffee in Ogun State

The survey of the study indicated that poor market and farm labour topped the lists of the limiting factors on coffee production, with value of 87 % each (Table 4). Unavailability of planting materials and lack

of production techniques were also major limiting factors accounting for 81 and 75 % respectively. These findings corroborated the earlier reports by Modinat, *et al.*, 2020, Ogundeji, *et al.*, 2019 and Aderolu, *et al.*, 2014). However, availability of land for cultivation was the least determinant factor.

Table 4: Factors that Influence Respondents' Preference for Production of Coffee

Influencing factors	Frequency	%
No knowledge on its techniques	104	75.4
Unavailability of planting materials	112	81.2
Lack of market to sell	120	87.0
Labour for production is unavailable & expensive	120	87.0
No land for cultivation	46	33.3

Source: Field Survey (2022)

Consumption Status of Coffee in Ogun State

The low category of coffee consumption in 2019 was 0 to 584 per farmer, intermediate 585 to 1346 and high 1347 to 5760 kg/ha. The values were 1092 to 4250kg, 467 to 1091kg and 0- 466 kg/ha for high, intermediate and low respectively in 2020. In 2021, the high category was 827-3000kg, intermediate 340- 826 kg and low 0- 339 kg/ha (Table 5). The mean of coffee consumption was highest (965 kg/ha) in 2019 and lowest (583 kg/ha) in 2021. The highest quantity of coffee consumed was 5760 kg/ha in 2019 while the lowest (3000

kg/ha) was in 2021 in similar pattern with the mean of consumption which declined with the years of investigation as shown in Table 5.

In 2019 there were more farmers in the low level of consumption (78.3 %) compared to high (17.4 %) and intermediate (4.4 %) levels (Fig.8). Similar pattern was observed in 2021. However, in 2020, consumption was in the order of low category (79.7 %) > intermediate (15.9 %) > high (4.4 %) as shown in figure 8. In the three years of the study, majority of the farmers consumed coffee at the low level.

Table 5: Mean of Coffee Consumption in Ogun state from 2019 – 2021

Year	Mean consumption	of Standard deviation	Level of Consumption (kg)			
			High	Intermediate	Low	Highest consumed
2019	965.4	381.7	5760 to 965.4 + 381.7 = 5760 to 1347	1346 to 585	965.4 - 381.7 to 0 = 584 to 0	5760
2020	779.3	313.3	4250 to 779.3 + 313.3 = 4250 to 1092	1091 to 467	779.3-313.3 to 0 = 466 to 0	4250
2021	582.8	244.3	3000 to 582.8 +244.3 = 3000 to 827	826 to 340	582.8- 244.3 to 0 = 339 to 0	3000

Source: Field Survey (2022)

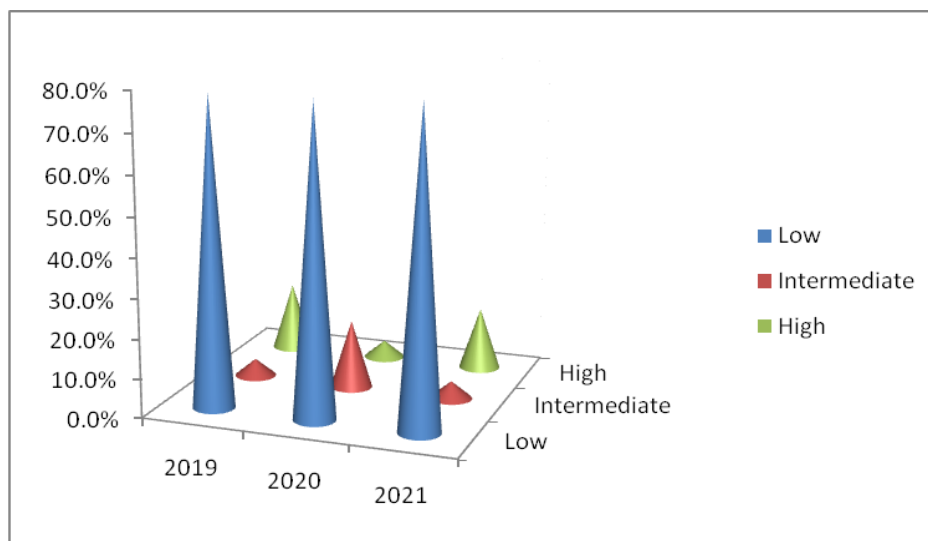


Figure 8: Levels of Coffee Consumption by Farmers in Ogun State from 2019 – 2021

Factors Influencing Consumption of Coffee in Ogun State

Table 6 presented the result of the linear regression model used to determine the factors influencing the consumption of coffee in Ogun state. The dependent variable is the amount of coffee consumed in kg and 24 explanatory variables were considered in the model. Five variables were statistically significant at various levels. They were price of coffee, taste, no budget on coffee, household acceptability and coffee monthly expenditure.

The coefficient for the cost of coffee sachet is negative and significant at 1% as shown in Table 6. This means that as the price of coffee increases the amount consumed reduces. Farmers are not really aware of the

health benefits of coffee, so if the price increases, they would opt out for other substitution beverages like Lipton Tea, Milo, Bournvita (Batat, 2020). The coefficient for taste is positive and significant at 1%. Taste plays a great role in the consumption of coffee. In Table 6, the coefficient for no budget on coffee is positive and is significant at 10%. This implies that although farmers do not budget for coffee yet they consume it. The coefficient for household acceptability is negative and significant at 5%. The coefficient for coffee monthly expenditure is positive and significant at 1%. An increase in monthly expenditure for coffee increases consumption.

Table 6: Factors Influencing Consumption of Coffee in Ogun State from 2019 - 2021

Variable	Coefficient	Std.Error	T	P> t
How much sold	-0.0101***	0.0025	-4.02	0.000
Taste	615.4811***	208.5226	2.95	0.005
No budget on coffee	435.0952*	249.2323	1.75	0.088
Household acceptability	-479.2206**	182.4382	3.62	0.012
Coffee monthly expenditure	0.3326***	0.0919	3.62	0.001
Constant	1355.573**	636.6382	2.13	0.039
R ²	0.6895			
Prob> F	0.0000			

Source: Field Survey (2022)

CONCLUSION

This study has shown a reduction in the production and consumption of coffee in Ogun state. Lack of market for the produce (coffee beans) was reiterated as the major bane to production. To this end. There is need to sensitize the study sensitized the farmers on the need to go back to the production of coffee as they were assured of ready markets. Coffee seedlings grown at the Cocoa Research Institute of Nigeria were also distributed to the farmers to encourage them to return to cultivation of coffee. Price of sachet of coffee, its taste, no budget for coffee, household acceptability and coffee

monthly expenditure were determinant factors for coffee consumption.

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