Determinants of Coffee Marketing among Smallholder Coffee Farmers in Kogi State, Nigeria

**Ayodele Oladipo Akinpelu[1*], Kayode Akanni Oluyole[1],
Chinweike Abednego Ugwu[1] and Modinat Adewunmi Alli[1]**

[1]*Economics and Extension Department, Cocoa Research Institute of Nigeria (CRIN), Idi Ayunre,
P.M.B. 5244, Ibadan, Oyo State, Nigeria.*

Authors' contributions

*This work was carried out in collaboration among all authors. All authors read and approved the final
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ABSTRACT

The study assessed the determinants of coffee production and marketing on farmers' farms in Kogi State. Two Local Government Areas (Ijumu and Kabba-Bunu Local Government Areas) were purposively sampled. These areas are known for the production and marketing of coffee. A total sample of eighty-four respondents was randomly selected from the two Local Government Areas. Structured interview schedules were used for data collection from respondents. The data collected were analyzed using inferential statistics analysis. Cobb-Douglas functional form regression model was chosen based on the value of the R^2 and the number of significant variables. The result indicated that marital status, household size, educational level, variety of coffee planted, farm size and farming experience constituted the major factors that significantly determined coffee production and marketing in the study area. The study recommended that policies should be targeted at encouraging literacy among coffee farmers to have access to market information and as such will be able to sell the crop for more profits. Also, households with higher number of persons should be encouraged to use family labour effectively in coffee marketing than other economic ventures so as to improve the economy of the households in the study area.

Corresponding author: Email: immadipo@yahoo.com;

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1. INTRODUCTION

The vast majority of coffee production has its roots in colonialism, during which missionaries or colonialists usually imported the plant. Coffee then became a "cash crop, planted and harvested by serfs or wage laborers on large plantations, then exported to imperial countries" [1]. Consequently, governments, ethnic relations and general ways of life were changed in these countries because of the shift to the new reliance on coffee production. However, with the growth of the United States economy, the market for exporting coffee also expanded. Therefore, coffee became a major source of income for many countries in Central and South America, Africa, and South Asia where colonialism was present and the environment was ideal for coffee trees [2]. Meanwhile, the coffee plant originated in Ethiopia. This assertion was corroborated by [3] who reported that Ethiopia is the birthplace and is the largest producer of Arabica coffee in Sub-Saharan Africa countries and it is ranked the fifth largest coffee producer in the world next to Brazil, Vietnam, Colombia, and Indonesia. The country contributes about 7 to 10 percent of total world coffee production. Nevertheless, coffee-drinking habits had spread to Europe by the 17th century.

According to [4] the coffee tree can be grown only in warm areas without frost or sudden temperature shifts, and it also needs plenty of rain. Coffee is also a shade loving tree that grows well under the large indigenous trees such as the Cordia Abyssinia and the Acacia species [4]. This explains why it is a common export commodity for countries in tropical areas, and an unsuitable one for the rest of the world. In addition, a standing coffee crop has been accorded many advantages. Environmentally, coffee trees of either variety maintain a forest-type ecosystem and protect the soil against run-off, thus contributing to the conservation of the environment [5]. Similarly, it provides financial security to the farmer and represents a feasible asset that can be sold while still green before harvest to satisfy an urgent need for liquidity or serve as collateral for a credit. It may also enhance land tenure security, since its presence on the land attests to the farmer's ownership rights in case the land is not officially marked out. Moreover, it constitutes an asset that can be passed on to generations [5]. Coffee is a highly labour-intensive industry employing an estimated 100 million people in over 60 developing countries, where it is often a vital source of export revenues and income to producers, many of whom are smallholders [6]. Commercially grown varieties are *Coffee Arabica* and *Coffee Robusta*. *C. Arabica* has a mild taste, it is more fragile, and its best growing conditions are found in warm zones or in the highlands of tropical zones. Contrastingly, *C. Robusta* is more resistant and can be grown between sea level and 800 metres above sea level (ASL) [4].

According to [7] market may be defined as "a particular group of people, an institution, and a mechanism for ease of exchange. The concept of market has also been connected to the level of communication among buyers and sellers and the degree of substitutability among goods. However, the concept of perfect market, for instance, is an abstraction used by economists as a standard for assessing the performance of market situations that differ from its specifications [7]. In addition, market is an area in which one or more sellers of given products/services and their close substitutes exchange with and compete for the patronage of a group of buyers. Originally the term market stood for the place where buyers and sellers are gathered to exchange their goods, such as village square. The concept of exchange and relationships lead to the concept of market. It is the set of actual and potential buyers of product [8]. Hence, a market can be envisaged as a process in which ownership of goods is transferred from seller to buyer who may be final consumers of intermediaries. Therefore, market comprises of sales locations, sellers, buyers and transactions [3].

Meanwhile, marketing is a societal practice by which individuals and groups obtain what they need and want through creating, offering, and freely exchanging products and services and value with others [9]. However, marketing can be grouped into two major categories; classical (narrow) definitions and modern (broad) definitions. Classically, marketing is defined as "the performance of business activities from producer to consumer or user of the process in a society by which the demand structure for economic goods and services is anticipated (enlarged) and satisfied through the conception, promotion, and physical distribution of such goods and services". These show that marketing oriented toward the physical movement of economic goods and services [3]. Similarly, [3]

reports that modern marketing concept has evolved over a period of more than a century. The role and significance of marketing were primarily a function of the stage of economic development in a country. In a primitive society based on agriculture and handcrafts, exchange is very limited and marketing is more or less non-existent.

Despite the significance of the crop in the world market, its marketing encountered a downward trend in the last few decades. The major challenge was due to low prices in the international market [10-14], and the impact of this was mainly felt by the producers with little (if any) by the main consumer countries at the end of the marketing chain [15]. These assertions were corroborated by [16] who reported low prices and poor farm management as challenges coffee farmers in Nigeria face. Expectedly, this trend caused immense hardship to countries where coffee is a key economic activity, as well as to the farmers who produce it [11]. It was reported that losses resulting from coffee crisis made some producers to fall into debts while some took loans which they found difficult to pay back [10]. Also, some have eventually been forced to sell their land and transfer their workforce to other farm activities. In many developing countries with large number of coffee producers, poor pricing implies declining income for farming communities, especially for basics such as food, medicine and education of children. Some rural areas experience mass exoduses of people to the cities since their source of livelihoods have been disrupted [10].

Basically, the producers of these coffee beans are often small-scale farmers who are reliant on faceless consumers, large corporations and an ebbing market for their income and resources. Meanwhile, empirical studies revealed that smallholders in developing countries face numerous constraints due to the pervasive imperfections of markets. Increasing evidence shows that through collective actions, smallholders can reduce transaction costs of accessing input and output markets, adopt efficiency-increasing and value-adding technologies, and tap into high-value markets associated with certification and labeling [17-21]. In the early 2000s, a historic world market price slump hit millions of coffee farmers hard, especially smallholder producers in Africa and Latin America [22]. The volatility of coffee markets in combination with poor production infrastructure and services have sunk the majority of coffee producers in developing countries in low input-low output cycles and structural poverty. Furthermore, coffee is a traditionally worldwide traded cash crop with new emerging markets; many coffee-producing developing countries such as Nigeria are struggling with production and marketing of the crop [23]. In addition, smallholder coffee growers face high transaction cost, lack of market information, poor infrastructure, and weak capital markets [24]. Moreover, imperfect competition in which farmers are getting paid less for their produce than they would in a competitive situation occurs among the smallholder coffee growers in Nigeria. This loss of income may have a serious effect on the life situation of a trader who is living close to absolute poverty. When this effect is added to the other aforementioned factors that are characteristic of the coffee industry, we can perhaps understand why, many of these farmers perceive that this situation is unfair. There is therefore need to develop collective marketing that can lead to improved bargaining power in negotiations with buyers and intermediaries. The objectives of the study were to profile the socio-economic characteristics of the farmers, and determine factors that influence coffee marketing in the study area.

2. METHODOLOGY

The study was conducted in Kogi State, Nigeria. The state is in the middle belt region and falls in to the guinea savannah agro ecological zone of the country. It is located on Latitude 09° 11^1 and Longitude 08^o44^1 with an elevation of 1340m ASL. Two Local Government Areas (Ijumu and Kabba-Bunu Local Government Areas) were purposively sampled. These areas are known for production and marketing of coffee. A total sampling frame of eighty-four respondents was used. Structured interview schedules were used for data collection from respondents. Data were collected on socio economic characteristics (age, educational status, marital status, gender, membership of farmers' group) and market level characteristics (trading experience, coffee variety planted, marketing channel) respectively. Additional information was gathered through informal discussions with the farmers and by personal observations of the crop in some of the farmers' farms. Data were analyzed using multiple regression analysis. The Cobb Douglas (Double Log) regression model was chosen based on the value of the R^2 and the number of significant variables. The model is described explicitly thus:

$LogY= logf (X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9, X_{10}) + e$

Where Y = yield of coffee (kg/ha)

X_1= age (years)
X_2= trading experience (years)
X_3= gender (male=1, female=0)
X_4= marital status (1=single, 2=married, 3=divorced, 4=widowed)
X_5= farm size (hectares)
X_6= educational background (number of years)
X_7= membership of cooperative society (1= yes, 0= no)
X_8= variety of coffee (1=C. Arabica, 0=C. Robusta)
X_9=household size (number of persons)
X_{10}=Marketing channel (1=local buying agents, 0=Exporters)
e_i = error term

3. RESULTS AND DISCUSSION

Table 1 shows the determinants of marketing of coffee among smallholder farmers. The table reveals that educational level of the farmers was highly significant at 1% level of probability with negative coefficient. However, this is contrary to a priori expectation and result of a similar study by [24]. It is expected that as education level increases farmers tend to produce and sell more to private traders. In addition, it was revealed that marital status and household size of the respondents were significant at 1% and 10% level of probability respectively. The result of the household size is in tandem with [6]. The implication of this is that family labour may be used to reduce some transaction costs. Furthermore, variety of coffee planted and trading experience have negative coefficients and were both significant at 1% level of probability. This result is contrary to [24] who reported a non-significance value for trading experience on coffee marketing in Ethiopia. Also, the result reveals that farm size of the farmers was significant ($p \leq 0.01$) and has a positive coefficient. The result conforms to the a priori expectation because the larger the farm size the more coffee beans that would be produced for sale to buyers.

Table 1. Determinants of coffee marketing among smallholder farmers

Variable	Coefficient	Standard error	t-Value
Age of Farmer	-0.3491	0.7554	-0.46
Educational level of farmer	-0.3627	0.1321	-2.74***
Marital status of farmer	1.0846	0.6130	1.77***
Household size	0.7430	0.2262	3.28*
Farm size	1.0108	0.2018	5.01***
Coffee variety	-2.4433	0.3313	-7.37***
Membership of group	-0.3156	0.3343	-0.94
Trading experience	-1.0902	0.1918	-5.68***
Marketing channel	0.2132	0.3346	0.64
Const	2.0501	1.1735	1.75
R^2	0.7105		
Adj R^2	0.6708		
No. of Observation	84		

Source: Field Survey, 2016; ***,**,*, Significant at 1%, 5% and 10% level of Probability

Table 2. Result for test of multicollinearity

Variable	VIF	1/VIF
Age of Farmer	3.37.	0.29
Marketing channel	3.65	0.27
Marital status of farmer	2.35	0.42
Household size	3.95	0.25
Coffee variety	4.22	0.23
Educational level of farmer	2.60	0.38
Farm size	7.18	0.13
Trading experience	3.13	0.31
Membership of group	4.29	0.23
Mean VIF	**3.74**	

Source: Field Survey, 2016

Table 2 shows the result of the test for multicollinearity. The result shows no problem of multicollinearity since the Variance Inflation Factor (VIF) values of the variables in the model are less than the critical value (10). The estimated Tolerance Value (1/VIF) results range from 2.35 to 7.18 with a mean value of 3.74. This shows that multicollinearity is not an issue in the model as these values for the explanatory variables are less than 10. The result is similar to [25-27] who reported a VIF of less than 10.

4. CONCLUSION

The study assessed the determinants of coffee production and marketing at farmers' fields in Kogi State. Marital Status, house hold size, educational level, variety of coffee, farm size and farming experience constituted the major factors that determined the marketing of coffee in the study area. The study therefore recommends that policies should be targeted at encouraging literacy among coffee traders as this will go a long way in making the farmers having an access to market information and as such will be able to sell the crop for more profits. In addition, farmers should be trained on the variety of the crop that has higher market demand since the variety of coffee planted has significant effect on coffee marketing. Moreover, household with higher number of persons should be encouraged to use family labour effectively in coffee marketing in which they have comparative advantage than other economic ventures so as to improve the economy of the households in the study area.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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