Agricultural Credits and Cocoa Production in Selected Local Government Areas of Ondo State

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Abstract
Finance is considered as the basic ingredient for each and every economic activity including agriculture, especially in the economy where agriculture is subsistence. Agriculture has been the main-stay of Nigeria's economy of which cocoa production plays a significant role in the acceleration of the national gross domestic product (GDP), in terms of employment generation, feeding the local industries with raw materials and sustaining the rural livelihood until about the mid-1970s that witnessed oil boom resulting in the neglect of the sector coupled with the introduction of structural adjustment programme (SAP) in 1986 that killed the morale of cocoa producers. Access to credit is a problem for most farmers and is particularly acute for cocoa subsistence farmers which has led to a decline in the quantity of cocoa produced. The study adopted survey research design. The population of the study was 400 cocoa farmers from Ondo State, Nigeria. Multistage sampling technique was used to select respondents. Information and data were elicited from these respondents using well-structured questionnaires. The researcher sought advice from academics and professionals within Babcock University School of Management Sciences. The reliability of this instrument was tested using Cronbach's alpha coefficient, the result of the pilot test found the questionnaire to be reliable and valid for data collection with the overall Cronbach's Alpha figure of 86.9The data were analyzed with descriptive and inferential (Linear Regression) statistics for the quantitative analysis to ascertain the effect and relationship of the variables. The findings disclosed that Bank of Agriculture credit had a positive and significant effect on cocoa production in Ondo State, Nigeria (β = 0.544, t = 12.279, p= 0.001; R^2 is 0.360). The study concluded that availability of agricultural credit greatly affects cocoa production in Ondo State, Nigeria. The researcher, therefore recommended that the number as well as the value of credit guaranteed to cocoa farmers by finance agencies should be significantly increased so as to enable the farmers expand their production and thereby, reposition the cocoa industry to assume a critical role as a major non-oil foreign exchange earner in the Agricultural transformation plan of Nigeria.
Keywords: *Agricultural credit, Ondo State, Cocoa production, Bank of Agriculture, Farm productivity*

1. INTRODUCTION

Agriculture remains one of the major drivers of the economy of which its importance cannot be over emphasized. Considering the high economic importance that the cocoa-chocolate value chain represents globally and a steadily growing demand, it is therefore surprising that the yield performance of this crop had not witnessed any dramatic increase; the average productivity of cocoa is only 30% higher than it was 50 years ago (Food and Agriculture Organisation Statistics, 2018). Today, 90% of the global cocoa beans produced is consumed for chocolate-based production. According to a recent report from Mordor Intelligence, over 4 million metric tons of cocoa beans are produced each year. Global production of cocoa beans in 2016 peaked at 4.38 million metric tons. However, the global cocoa production faced a decline in quantity from 4.74 million tons during the 2016/2017 crop year to 4.59 million tons during the corresponding crop year of 2017/2018 (International Cocoa Organisation, 2019).

Pohlan (2017) in his study, concluded that the United States of America was the leading consumer of cocoa followed by the Switzerland, Germany and Britain in that order. He went further to conclude that the Belgians eat and produce the world famous chocolates known as pralines. The international market prices of cocoa are very volatile and have very sensitive demand and supply forces for the product. In 2017, global cocoa prices went down due to surplus supplies, however, the low prices will drive the demand in the following years with expected changes in product pipelines of major confectionery companies (Food and Agriculture Organisation Statistics, 2018). According to a report from International Cocoa Organisation (2018), the global cocoa price stood around US$ 2,096.42 per tonne in February 2018. Cocoa beans are primarily used as raw material for chocolate and other popular confectionery products around the world.

In the 1980s, the cocoa producing sector experienced an economic recession as the world cocoa market went through a period of low prices fluctuating between $500 per tonne to $925 per tonne (Winton, 2017). The stagnation and decline in the cocoa sector between 1981 to 1989 paralleled the overall collapse in economic growth in sub-Saharan Africa (Wessel & Quist- Wessel, 2015). The price received by farmers has hardly risen above $0.50 USD per kilogram. With the economic environment and within the world globalisation context, new strategies and policies need to be established to take up the challenges of low and declining yields due to inconsistent production patterns, disease incidence, pest attack and little agricultural mechanization. The main challenge is how to increase cocoa production to meet up with farmers' income and development needs. Attaining these goals through adequate financing, require a drastic increase in cocoa productivity by cocoa producers (Food and Agriculture Organisation, 2016).

Currently, Africa is the largest producer of cocoa, accounting for 72% of the total global production followed by Latin America and the Asia Pacific (Price waterhouse Coopers (PwC), 2018). Europe is the largest consumer and importer followed by North America. Major cocoa bean exporting countries are Cote d'Ivoire, Ghana, Nigeria, Cameroon, Brazil, Ecuador, Colombia, Indonesia and Malaysia. Although the production of cocoa beans is dominated in Africa, Latin America and Asia Pacific, the major grinding facilities are placed in the Americas and Europe.

In Africa, growth in the cocoa sector has been achieved by increasing the area cultivated rather than by improving yield (Owoeye & Sekumade, 2016). Between 2010 and 2014, Nigeria's cocoa output declined by 37.9% to 248,000 tonnes from 257,399 tonnes, a reflection of decreasing cocoa yield (Food and Agriculture Organisation Statistics, 2015). On the contrary, other cocoa producing countries in West Africa have recorded increases in output based on an expansion in area growth and increasing use of inputs. Ivory Coast has remained the top cocoa beans producer in the world since 2010, and in 2014, Ghana moved from the fourth largest cocoa beans producer to the second position (Wessel & Quist- Wessel, 2015).

Leading the way in the global cocoa production in West African is Cote d'Ivoire. Cote d'Ivoire has always been rated among the top cocoa producing countries and largest cocoa exporters in the world. In 2016, the country produced approximately 1.472 million metric tons of cocoa beans, valued over $1.5 billion. Cocoa is also the biggest contributor of Cote d'Ivoire export earnings as cocoa alone is responsible for almost two-thirds of the trade revenue coming into the country. Major confectionary companies like Nestle and Cadbury are some of the largest buyers in Cote d'Ivoire's cocoa industry. The nation's output is estimated to be more than 1.7 million metric tons of cocoa beans during the 2017-2018 crop year (International Cocoa Organisation, 2018).

The relevance of cocoa to most developing economies cannot be overemphasized as cocoa is produced by more than fifty developing countries across Asia, Africa, and Latin America, all of which are in tropical or semi-tropical areas (Ogunleye & Oladeji, 2007). The growth and development of any nation depends to a large extent, on the development of agriculture according to Iganiga and Unemhilin (2011). The major aim of the Millennium Development Goals put in place by the United Nations, is the eradication of extreme poverty and

hunger in the less developed countries (FAO, 2014). It includes self-sufficiency in food production. For the goals to be achieved, sectors of the economy like the manufacturing and agriculture need to be improved upon.

According to the Nigerian Export Promotion Council (NEPC), Nigeria earned $338.17 million from cocoa and cocoa products in 2018, and cocoa accounted for 20.8 per cent of total non-oil exports. Nigerian cocoa beans have commanded consistently high demand for several decades and it is rated as some of the best in the world because of flavor and aroma. However, Nigeria's production still hovers around 245,000 metric tons yearly in contrast to Cote D'Voire and Ghana, with yearly production levels of roughly two million and one million metric tons respectively (Olusola, 2019).

Crude oil production in commercial quantity was discovered in 1956 in Oloibiri, Bayelsa State and Government revenue from oil increased significantly in the 70's which led to the beginning of the neglect of the Agricultural sector. Agriculture is the largest non-oil export earner in Nigeria, a key contributor to wealth creation and poverty reduction, the largest employer of labour (Central Bank of Nigeria, 2018). According to Onoja, Deedam and Achike (2015), Nigeria is endowed with a large deposit of agricultural resources, arable land for the cultivation of crops and rearing of animals. In the 1960s and 1970s the agricultural sector constituted over 65% of total export (Onoja, et. al. 2015). The Nigerian agricultural sector was renowned for the export of cash crops (agricultural crops and produce with export value) namely cocoa, rubber, hides and skin, groundnut and palm fruits. The agricultural sector holds an enormous potential for the growth and economic development of the country.

Adefeko (2018) explained that, inadequate access to economic resources especially finance by the numerous sparsely located farmers across Nigeria continues to inhibit agricultural development. This calls for critical examinations and the adoption of an approach to avoid declaring farmers "an endangered species". According to Ewetan, Fakile, Urhie and Oduntan (2017), the role of agriculture in reforming both the social and economic framework of an economy cannot be over-emphasized**.** It is a source of food and raw materials for the industrial sector. It is also essential for the expansion of employment opportunities, for reduction of poverty and improvement of income distribution, to speed up industrialization and ease the pressure on balance of payments.

Ehui and Tsigas (2013) noted that Nigeria has a highly diversified agro ecological condition, which facilitates the production of a wide range of agricultural products. Hence, agriculture constitutes one of the most important sectors of the economy. Despite Nigeria's rich agricultural resource endowment, this sector has been growing at a low rate. Productivity is low and basically stagnant.

Cocoa cultivation in Nigeria started about 1879 when a local chief established a plantation at Bonny in the defunct Eastern Nigeria (Amos, 2007). In its 2004 report, Food and Agriculture Organisation noted that Nigeria was able to produce 0.37million metric tons of cocoa, which amounted to 10.28 percent of the world's cocoa production. It is noteworthy that the world cocoa production rate average is 3 million tons with Ondo state as the largest cocoa-producing state in Nigeria (Amos & Adeleke, 2010). Ondo State is known as the cocoa belt or the land of cocoa farmers. Cocoa export plays a pivot role in this regard in Nigeria. In terms of foreign exchange earnings, no single agriculture export commodity has earned more than cocoa (Adewale, Adeigbe, & Muyiwa, 2016). With respect to employment, the cocoa sub-sector still offers, quite a sizeable number of employment opportunities to people both directly and indirectly (Idowu, Osuntogun, & Oluwasola, 2007). According to Nkang (2007), cocoa remains an important source of raw materials to manufacturing Industries as well as source of revenue to governments of cocoa producing states.

The role of finance in agriculture, just like in the industrial sectors, cannot be over-emphasized, given that finance promotes crop production. Public expenditure on agriculture has, however, not been substantial enough to meet the objective of government's agricultural policies (International Food Policy Research Institute, 2008).

For a developing country with a mono-product oil economy such as Nigeria's, inadequate financing of agriculture portends great danger for economic growth.

Poor access to finance has been contributing to inadequate farming activities and low crop yield in the last few years. Farmers have complained of inability to obtain loans due to stringent conditions attached to loan application in the specialised and commercial banks. Some of the farmers claimed that conditions such as Certificates of Occupancy, owner's equity and cash flows, among other requirements, make it practically impossible for the majority of small-scale farmers to obtain credit facilities from banks (Olakojo, 2018).

Alimi and Awoyomi (2001) had earlier remarked that the scrap of the cocoa marketing board also encouraged illegal commercial activities which lowered the quality of cocoa standard thus, made Nigeria to become backward in cocoa industry. Popoola, Ogunsola and Sulaimon (2015) strongly believe that if government can put more effort at boosting cocoa production and increase the condition of living of the cocoa planters, the physical, capital and human resources on ground can complement government efforts towards restoring the nation's past glory as one of the leading producers and exporters of cocoa in the world; while Asare, Afari-sefa and Muilerman (2016) estimated that there can be a 15 – 30% rise in cocoa production if more inputs such as fertilizer and agro-chemicals are used.

Cocoa is widely cultivated in the southern belt of Nigeria owing to the soil and climatic condition prevailing in the area. This include: Abia, Adamawa, Akwa Ibom, Cross River, Delta, Edo, Ekiti, Kogi, Kwara, Ogun, Ondo, Osun, Oyo and Taraba states. In terms of capacity, Ondo State is rated as the largest cocoa producing state in Nigeria with average production of 77,000 tons per annum (Adelodun, 2017). Cocoa production has experienced a sharp decline and International Fund for Agricultural Development had calculated that by 2050 if necessary, procedures (such as access to credit and policy implementation) are not taken, it would hit 20% low, therefore there is need for urgent intervention in cocoa production (Agro-Nigeria, 2018). Given this background, it is expected that research efforts should be directed towards finding solutions to problems of low productivity and stagnation in cocoa production in Nigeria. Also, there is need for more research into this important sector on the problem of a decline in production, and the impact of inadequate financing from Bank of Agriculture will have on cocoa production rate in Nigeria and Ondo State in particular. This study is therefore a response to filling this knowledge gap as well as providing some policy impetus to stake holders in Nigerian agriculture, especially the cocoa industry as regards reviving this major foreign exchange earner for Nigeria.

2. REVIEW OF RELATED LITERATURE

2.1 Agricultural credit

Agricultural credit encompasses all loans and advances granted borrowers to finance and service production activities relating to agriculture, fisheries and forestry and also for processing, marketing, storage and distribution of products resulting from these activities. Smallholder farmers' productivity and growth are hindered by limited access to credit facilities (Mgbenkai & Mbah, 2016). The small-scale farmers are among the potential beneficiaries of agricultural credit in Nigeria but because of their low level of literacy they are mostly unaware of existing loan facilities. While the medium and large-scale farmers, who are mostly educated and well connected to the government in power, access soft loans from financial institutions based on their collateral (Hartarska, Nadolnyak & Shen,2015).

Odoemenem and Obinne (2013) also report that the ratio of rural branches to total branches of formal (commercial banks, the Nigeria Agricultural and Cooperative Rural Development Bank (NACRDB) credit institutions is low compared to informal (money lenders, and thrift savings and credit associations) and semi-formal (non-governmental organizations- institutions) ones and this constitutes a limitation of smallholder farmers' credit access in Nigeria.

2.2 Bank of Agriculture (BOA) Credit

The etymology of bank connotes an institution promulgated in accordance with the lay down rules and regulations of a sovereign political independent entity and saddled with the major responsibility of keeping peoples deposit towards profit maximization. Institutionally, apart from Bank of Agriculture, there are other various banks saddled with the responsibilities of savings and lending in the international financial market such as; Central Bank, Commercial Bank, Bank of Industry and Mortgage Bank (Adamu, 2017).

The Central Bank of Nigeria (2014) defined the Bank of Agriculture (BOA) as a type of bank that lends money to farmers for longer periods of time and charges them less interest than other types of banks. Federal Government in 1973, established the Nigerian Agricultural and Cooperative Bank (NACB) Ltd with a mission to "provide affordable financial and advisory services to the farm and non-farm enterprises of the national economy using well-trained and highly motivated staff, backed by appropriate technology, thereby fostering accelerated agricultural and rural development. In October 2000, NACB successfully merged with the defunct Peoples Bank of Nigeria (PBN) and the risk assets of the Family Economic Advancement Programme (FEAP) to form the Nigerian Agricultural, Cooperative and Rural Development Bank (NACRDB) Ltd as the single largest development finance institution in Nigeria. In October 2010, following the rebranding of the Bank to reflect its institutional transformation Programme, the Bank adopted the new name Bank of Agriculture Limited (BOA). Its share capital of #50billion is fully subscribed by the Federal Ministry of Finance Incorporated (60%) and the Central Bank of Nigeria (40%). Unfortunately, as at 2017, only #20.316billion(40.7%) of the share capital is paid up leaving a shortfall of #29.684billion(59.3%) (Ogunojemite, 2017).

BOA is Nigeria's premier agricultural and rural development finance institution, 100% wholly owned by the federal government of Nigeria. As a development finance institution, it is government owned (CBN 40% and Federal Ministry of Finance 60%), and supervised by Federal Ministry of Agriculture. It is a federal government owned development bank with a mandate to provide low cost credit to both small farmers and commercial farmers, and small and medium rural enterprises. It also provides micro financing to small and medium scale non-agricultural enterprises (Davies, 2014). Auma and Mensah (2004), considers local credit as a viable source of poverty reduction as well as development in rural areas. Agricultural credit is used to provide farmers in developing countries with the resources they need in cases where their income is not sufficient. Credit is viewed as more than just another resource such as labour, land, equipment and raw materials but can rather be considered from its ability to motivate other factors of production (Rahji, 2000). Most often, availability of credit determines access to most of the resources in which small scale farmers depend for Agricultural production, because lack of adequate capital will deny them access these resources (Olalade & Olagunju, 2013).

The provision of Credit is an important aspect of rural agricultural development because it helps to achieve sustainable growth of agriculture. Local credit acts as a catalyst for agricultural production as it covers for deficit in individual savings, it enables farmers to be able to afford expensive agricultural technologies which boost agricultural production. The financing of agricultural activities requires liquid cash which, small scale farmers lack in most cases. As a result, the expansion of local credit is efficient in increasing agricultural productivity (Briquette, 1999). The aim of BOA is to ensure effective delivery of agricultural and rural finance services on a sustainable basis to support the national economic development agenda, including food security, poverty reduction, employment generation, reduction in rural to urban migration, less dependency on imported food items, and increase in foreign exchange earnings (Davies, 2014).

Furthermore, BOA has an effective system of sustainable agricultural financing services that strengthens agriculture's specific role in the economy to provide adequate food for Nigeria's increasing population, supply adequate raw materials to a growing industrial sector, deliver a reliable source of employment, ensure generation of substantial foreign exchange earnings and provide a market for the products of the industrial

sector. In ensuring the provision of food, BOA is targeted at providing small farm holder's loans to drive production of cash crops, staple foods, livestock and fisheries (Adelodun, 2017).

Adamu (2018) says the Bank of Agriculture has disbursed N262 billion to 140,000 farmers through Anchor Borrower Scheme in three years. (BOA, 2018). According to him, the bank used to disburse the loans directly to farmers in the past but due to some hitches had to introduce indirect lending through input suppliers to ensure that genuine farmers access the facilities. However, the bank had to take legal action before it could recover N5 billion from the farmers. He said loans taken by some farmers that faced natural disaster challenges were restructured from non-performing to performing loans, explaining that N9. 3 billion microcredits were disbursed in 2017 alone. However, the focus of the bank remains to enhance social impacts through Federal Government programmes, ensuring commercially viable activities and efficiency. Lending rate is still 9% which makes it different from other purely commercial banks.

The Central Bank of Nigeria (2014) defined the Bank of Agriculture (BOA) as a type of bank that lends money to farmers for longer periods of time and charges them less interest than other types of banks. Adesina (2012), an Economist succinctly conceptualized Bank of Agriculture as bank that lends money to individuals, basically farmers, often over a long period of time and at low rates of interest. Therefore, the Bank of Agriculture can be described as a credit bank expressly established in accordance with the provisions of law to assist agricultural development across the globe, particularly by granting loans for longer periods than is usual with commercial banks.

2.2.1 Bank of Agriculture (BOA) Credit Facilities

The Agricultural Credit Guarantee Scheme Fund (ACGSF) was established by Decree No. 20 of 1977, and started operations in April, 1978. Its original share capital and paid-up capital were N100 million and N85.6 million, respectively. The Federal Government holds 60% and the Central Bank of Nigeria, 40% of the shares. The capital base of the Scheme was increased to N3 billion in March, 2001. The Fund guarantees credit facilities extended to farmers by banks up to 75% of the amount in default net of any security realized. The Fund is managed by the Central Bank of Nigeria, which handles the day-to-day operations of the Scheme. The Guidelines stipulate the eligible enterprises for which guarantees could be issued under the Scheme.

Between 1978 and 1989 when the government stipulated lending quotas for banks under the Scheme, there was consistent increase in the lending portfolios of banks to agriculture, but after the deregulation of the financial system, banks started shying away by reducing their loans to the sector due to the perceived risk. In order to reverse the declining trend several innovations and products were introduced under the Scheme such as: the Self-Help Group Linkage Banking, Trust Fund Model and Interest Draw Back (CBN, 2010).

The Agricultural Credit Support Scheme (ACSS) which came on board in 1978 is an initiative of the Federal Government and the Central Bank of Nigeria with the active support and participation of the Bankers Committee (Chief Executives of Banks). The Scheme had a prescribed fund of N50.0billion. ACSS was introduced to enable farmers exploit the untapped potentials of Nigeria's agricultural sector, reduce inflation, lower the cost of agricultural production (i.e. food items), generate surplus for export, increase Nigeria's foreign earnings as well as diversify its revenue base. At national level, the scheme operates through a Central Implementation Committee (CIC) while at the Federal Capital Territory (FCT) and State levels, the Scheme operates through State Implementation Committees (SICs) instituted to ensure that the objectives of the scheme are realized without hindrance. To access loans under ACSS, applicants (practicing farmers and agro-allied entrepreneurs with means) are encouraged to approach their banks for loan through the respective state chapters of farmers associations and State Implementation Committees. However, large scale farmers are allowed under the scheme to apply directly to the banks in accordance with the guidelines. ACSS funds are disbursed to farmers and agro-allied entrepreneurs at a single-digit interest rate of 8.0%. At the commencement of the project support, banks will grant loans to qualified applicants at 14.0 per cent interest rate. Applicants who pay back

their facilities on schedule are to enjoy a rebate of 6.0 per cent, thus reducing the effective rate of interest to be paid by farmers to 8.0 per cent. The Implementation Guidelines will be determined administratively as soon as a decision is taken on the proposed fund. (CBN, 2010).

As part of its developmental role, the Central Bank of Nigeria (CBN) in collaboration with the Federal Ministry of Agriculture and Water Resources (FMA&WR) established the Commercial Agriculture Credit Scheme (CACS) in 2009 to provide finance for the country's agricultural value chain (production, processing, storage and marketing). Increased production arising from the intervention would moderate inflationary pressures and assist the Bank to achieve its goal of price stability in the country. The primary objectives of the Scheme are to: Fast-track the development of the agricultural sector of the Nigerian economy by providing credit facilities to large-scale commercial farmers at a single digit interest rate; Enhance national food security by increasing food supply and effecting lower agricultural produce and products prices, thereby promoting low food inflation; Reduce the cost of credit in agricultural production to enable farmers exploit the untapped potentials of the sector; and Increase output, generate employment, diversify Nigeria's revenue base, raise the level of foreign exchange earnings and provide input for manufacturing and processing on a sustainable basis.

The Scheme which is a sub-component of the Federal Government of Nigeria's Commercial Agriculture Development Programme (CADP) is financed through a N200billion Bond raised by the Debt Management Office (DMO). Loans to eligible entities under the Scheme are disbursed at a maximum interest of 9 percent. The subsidy arising from this stipulated rate and the market rate on all loans granted, and the administrative expenses of the Scheme are borne by the Central Bank of Nigeria (CBN). The Central Bank of Nigeria and the Federal Ministry of Agriculture and Water Resources jointly ensure that the scheme is implemented successfully. Commercial banks also give loans to individuals and cooperatives for agricultural purposes. There are a variety of loan facilities that one could apply for from commercial banks, these include; short-term loans, medium term loans, and long-term loans. The general requirement for all the commercial banks includes; Open an account with the bank, submit a loan application, deposit at least 10% of the total money applied for, provide the bank with collateral, provide a detailed business plan with complete feasibility study (CBN, 2012).

Agriculture finance assumes vital and significant importance in the agro–socioeconomic development of the country both at macro and micro level. It is playing a catalytic role in strengthening the farm business and augmenting the productivity of scarce resources. When newly developed potential seeds are combined with purchased inputs like fertilizers and plant protection chemicals in appropriate proportions will result in higher productivity. Use of new technological inputs purchased through farm finance helps to increase the agricultural productivity. Access to farm assets and farm supporting infrastructure provided by large scale financial investment activities results in increased farm income levels leading to increased standard of living of rural masses. Farm finance can also reduce the regional economic imbalances and is equally good at reducing the inter–farm asset and wealth variations. Farm finance is like a lever with both forward and backward linkages to the economic development at micro and macro levels.

Conscious efforts of the Federal Government in channelling funds to agricultural sector started early in the 1970s with the Sectorial allocation of funds wherein the banks were mandated to channel a certain percentage of their annual total lending (i.e. loans and advances) at concessionary interest rates directly towards enhancing agricultural productivity. This was followed by the Rural Banking Scheme (RBS) in 1977 which was to channel a certain percentage of the total deposits mobilized in the rural communities back to the communities, not only to ginger economic development of the area but also create banking awareness among the rural people. Failure of RBS gave rise to the development of the Community Banks (CB) which today has transited into Micro-Finance Banks (MFBs). Unfortunately, the MFBs are yet to find their feet as the "deep rooted fear of money trust – i.e. monopoly of money" which birthed the establishment of community banks through the Unit Banking System of America is very much present and currently very active in the nation's banking industry. The

expected impact of the MFBs on the rural economy and especially the agricultural sector is therefore yet to be realized.

2.3 Theoretical Framework

Theoretical Framework - Agriculture Based Economic Development Theory

The theory upon which this study hinges upon is the Agriculture Based Economic Development Theory propounded by Wiggins, (2006). In his theory, Wiggins postulated that agricultural–based strategy for economic development requires a technical, Institutional and financial- incentive change that will raise the productivity of small farmers. Wiggins explains that agricultural financial incentives can play a dual role in the process of economic development. Firstly, it will lead to production of more food and secondly, to production of more great jobs. For the Structural Change theory, postulated by Nobel laureate Arthur Lewis in the mid 1950's and latter modified, formalized and extended to explain changes in factors of production. Structural change is possible because of the dynamic nature of the economic system; these changes are viewed in terms of shifts from primary, to secondary and finally to tertiary production. The theory focuses on the mechanism by which underdeveloped economies can transform their domestic economic structures from a heavy emphasis on traditional subsistence agriculture to a more modern and more advanced agricultural practice through heavy financial support in order to attain industrial breakthrough. The extended version of the theory added that the full benefits of agricultural development cannot be realized unless government support systems are created to provide the necessary incentives, economic opportunities and most importantly access to needed credit and inputs to enable small farmers expand their output and raise their productivity.

METHODOLOGY

3.1 Research Design

This study explored the relationship between Agricultural Credit and Cocoa Production and adopted the survey research design. Previous studies in the area of Agricultural financing and cocoa production, similar to this study, both in the agricultural sector and financial institutions used the survey research design (Nahanga & Samuel, 2014; Nkang, et al., 2009; Kehinde, 2013; Egwu, 2016). Survey research is unique in gathering information not available from other sources, it gives an unbiased representation of population of interest and it is ideal for closed ended questions.

3.2 Population, Sample size and sampling Technique

The target population for this research is fifty thousand registered cocoa farmers in the selected local government areas of Ondo State (Min. of Agriculture, 2018), from which a sample size of four hundred cocoa farmers was taken. A multistage sampling technique was employed for the study. There are eighteen Local Government Areas in the State, therefore the first stage involved the random selection of some major cocoa producing local government areas (LGAs) in the state namely Akure South, Ondo West, Odigbo, Ileoluji and Idanre LGAs. The second stage involved the random selection of villages from each of the LGAs, and finally, cocoa farming households were selected at random in proportion to the number of cocoa farming households in each village. A total of 400 questionnaires was administered out of which 271 (67.75%) was retrieved back. Two towns/villages were randomly selected from each local government and eighty farmers were randomly selected in each local government area for the study making the sample size to be 400 respondents.

3.3 Method of Data Analysis

Descriptive statistics was used to describe the socioeconomic and farm characteristics of cocoa farmers in the selected Local governments. This was done using frequencies, percentages, mean, and standard deviation. The analysis of the data was carried out using multiple regression statistical technique in estimating the effect of agricultural financing on cocoa production as used by Agunuwa *et.al* (2015). Data for Cooperative society credit, credit from Family and Friends and also credit from Bank of Agriculture was collected through primary data.

3.4 Model Specification

This study employed the Commercial loan theory of liquidity to model the relationship between Bank of Agriculture credits and agricultural sector performance in Nigeria. The theory propounded by Harris (1976), states that a commercial bank should forward only short-term self-liquidating productive loans to business organizations. Loans meant to finance the production, and evolution of goods through the successive phases of production, storage, transportation, and distribution are considered as self-liquidating loans. Thus, the model is specified as:

Functional

$Y = f(X)$

$Y = CP$

$X = AF$

$x_1 = BOAC$

$x_2 = CSC$

$x_3 = FFC$

where:

CP is cocoa production

AF is Agricultural financing

BOAC is Bank of Agriculture Credit

CSC is Cooperative society credit

FFC is Family and friend credit.

Hypothesis one

$CP = f(BOAC)$ ----------3.1

Hypothesis two

$CP = f(CSC)$ ----------3.2

Hypothesis three

$CP = f(FFC)$ ----------3.3

Models:

$CP = \alpha_1 + \beta_1 BOAC + \mu i$ ----------model I

$CP = \alpha_2 + \beta_2 CSC + \mu i$ ----------model II

$CP = \alpha_3 + \beta_3 FFC + \mu i$ ----------model III

α_{1-3} are the intercepts for the models

β_{1-3} are the coefficient of the explanatory variables

μi is the error term of the models

Linear regression analysis was used in answering the research questions. The data collected on Agricultural financing and cocoa production was analysed using econometric techniques explained above and a tool pack called E-views (10).

4. Data Analysis, Results and Discussion of Findings

This chapter contains the results and discussion from the analysis of data collected through research instruments. The findings are presented in tables, followed by their interpretations and discussions. This was done on four parts: the first deals with demographic information of the respondents of the study, the second reports on the answer to research questions; the third is on testing the hypotheses while the fourth report was summary of findings. The study adopted multistage sampling technique, using selected Cocoa farmers in some major cocoa producing local government areas (LGAs) in the Akure South, Ondo West, Odigbo, Ileoluji/Okeigbo and Idanre. Four hundred copies of the questionnaire were distributed to cocoa farming households in the most prominent five cocoa producing local government areas (LGAs) of Ondo State and a total of two hundred and seventy-one were completed and retrieved, collated and checked to ascertain their

usability. This represented 67.8% response, while 129 copies representing 32.2% were not retrieved. The results are presented as follows:

Objective 1: To determine the effect Agricultural credits on quantity of cocoa production in selected LGAs in Ondo state.

Research Question 1: What is the effect of Agricultural credits on the quantity of cocoa production in Ondo State?

Table 4.1: Descriptive Statistics on Quantity of Cocoa Production

Items	Strongly Agree	Agree	Disagree	Strongly Disagree	Undecided	Mean	Standard Deviation
Low Quantity Cocoa Production(150-300kg	27 10.1%	122 43.8%	54 20.2%	60 22.5%	30 11.2%	4.00	1.321
Medium Quantity Cocoa Production(310-440kg)	19 7.1%	117 43.8%	106 39.7%	36 13.5%	8 3.0%	4.20	1.099
High Quantity Cocoa Production(450-690kg	35 13.1%	178 66.7%	36 13.5%	50 18.7%	3 1.1%	4.49	1.155
Very High Quantity Cocoa Production(Above 700kg	53 19.9%	160 60%	28 10.5%	79 29.6%	0 0.0%	4.41	1.269
Grand Mean						4.28	1.211

Source: Field Survey Results (2019)

From the results, 10.1% of the respondents strongly agreed that volume of cocoa production is low between 150kg and 300kg, 43.8% agreed, 20.2% disagreed, while 22.5% strongly disagreed and 11.2% of the respondents could not precisely decide. It is further deduced from the mean value (4.00) that on average, the respondents agreed that there is low quantity of cocoa production (between 150-300kg) by farmers per hectare of land while standard deviation (1.32) shows that the responses spread around the mean.

In respect to the medium quantity cocoa production (310-440kg), the mean score of 4.20 revealed that respondents attested to this on an average level though dissimilarities existed in their responses (Std. Dev. = 1.09). Specifically, 7.1% of the respondents strongly agreed, 43.8% agreed, 39.7% disagreed, while 13.5% strongly disagreed, and 3.0% of total respondents undecided. Investigations on "high quantity cocoa production (450-690kg)" per hectare based on farm business of respondents showed that 13.1% of the respondents strongly agreed, 66.7% agreed, while 13.5% disagreed, 18.7% strongly disagreed, and 1.1% of total respondents undecided. The mean value of 4.49 and standard deviation of 1.155 revealed that respondents agreed there is high quantity of cocoa production (between 450-690kg).

The results further show reaction on very high quantity of cocoa production (above 700kg) per hectare produced by respondents. It was observed from the results that majority of the respondents (60%) agreed, 19.9% strongly

agreed, while 10.5% disagreed, and 29.6% strongly disagreed. On the average, respondents agreed to very high quantity of cocoa production (above 700kg) per hectare in their view with a mean of 4.41 and standard deviation of 1.269 which reveals a disparity in their opinions. The grand mean was 4.28 indicates that on average, respondents agreed averagely to production of different quantities of cocoa per hectare (low, medium, high, and very high) in the study area. Also, the grand standard deviation of 1.211 confirms the divergence of respondents' opinions towards the different quantities of cocoa per hectare.

Findings of the study revealed that cocoa farmers in the study area have enjoyed different types of Bank of Agriculture Credit scheme funds. Further, the findings revealed some variations with regards to the sources and size of Agriculture Credit scheme funds obtained by the sampled cocoa farmers as shown by the standard deviations. The findings of the study also revealed variations in the quantity of cocoa production by the farmers in the study area. The findings revealed that some respondents (farmers) produced very high quantity of cocoa, others produced high quantity, medium quantity and low quantity. These quantities depend on a number of factors such as number of workers, farm ownership, size of farmland, varieties of cocoa planted, farming experience, and access to credit. However, the major factors responsible for these variations with respect to the objective of study are connected with sources of finance and lending. From the findings, it can be seen that the respondents (cocoa farmers) obtained funds from different Agriculture Credit schemes, and have produced different quantities of cocoa per hectare of land based on their farm business; therefore, there is possibility that Bank of Agriculture credits could affect quantity of cocoa production in Ondo State. This provides answer to research objective one and has enabled the researcher to achieve objective one as well.

Table 4.2: Descriptive Statistics on Bank of Agriculture credits support

	Very High Extent	High Extent	Medium Extent	Moderately Extent	Low Extent	Very Low Extent	Mean	Standard Deviation
Agricultural Credit Guarantee Scheme	195 73%	20 7.5%	7 2.6%	15 5.6%	19 7.1%	11 4.1%	3.94	1.202
Agricultural Credit Support Scheme	206 77.7%	15 5.6%	22 8.2%	13 4.9%	3 1.1%	8 3.0%	3.98	1.216
Commercial Agricultural Credit Scheme	208 77.9%	29 10.9%	18 6.7%	3 1.1%	1 0.4%	8 3.0%	4.04	1.230
Credit Facilities From Bank Of Agriculture	111 79.1%	29 10.9%	20 7.5%	3 1.1%	0 0.0%	4 1.5%	4.05	1.289
Grand Mean							4.002	1.234

Source: Field Survey Results (2019)

Table 4.2 presents the descriptive statistics of cocoa farmers' opinions on Bank of Agriculture credits. Table 4.2 shows that 73% of the cocoa farmers rated Agricultural Credit Guarantee Scheme support to their farm business to a very high extent, 7.5% rated it high extent, 2.6% rated it medium extent, 5.6% rated it moderately low extent, 7.1% rated it low extent, while 4.1% of the cocoa farmers rated credit support from Agricultural Credit Guarantee Scheme very low extent. The mean value of 3.94 indicates that on average, respondents agreed to using Agricultural Credit Guarantee Scheme funds to support their farm business to a medium extent and the standard deviation of 1.20 shows moderate variations in responses around the mean.

On Agricultural Credit Support Scheme, 77.7% of the cocoa farmers rated the use of the Scheme funds to support their farm business very high extent, 5.6% rated it high extent, 8.2% rated it medium extent, 4.9% rated moderately low extent, 1.1% rated it low extent, and 3.0% rated it very low extent. The results revealed that on average (Mean = 3.98) the respondents used funds from Agricultural Credit Support Scheme to support their farm business to a medium extent and this was with 1.216 variation in their responses (Std. Dev. = 1.216).

With respect to the use of funds from Commercial Agricultural Credit Scheme to support farms business, 77.9% of the respondents rated it very high extent, 10.9% rated it high extent, 6.7% rated medium extent, 1.1% to moderately low extent, 0.4% low extent, and 3.0% to a very low extent. The average response (mean = 4.404) indicates that the respondents agreed that they use funds from Commercial Agricultural Credit Scheme to support farms business to a medium extent, with discrepancies in their responses (Std. Dev. = 1.230).

In terms of using credit facilities from Bank of Agriculture (BOA) to support farm businesses, 79.1% of the respondents rated it to a very high extent, 10.9% rated it to a high extent, 7.5% rated to medium extent, while 1.1% rated it moderately low extent, and 1.5% of the respondents rated it to a very low extent. The mean value of 4.05 and standard deviation of 1.289 revealed that the respondents agreed that they use credit facilities from Bank of Agriculture (BOA) to a medium extent to support their farm businesses.

The grand mean was 4.002 which indicates that on average, respondents agreed with the use of Bank of Agriculture Credit scheme funds to a medium extent to support their farm businesses with intention of increasing cocoa production. Further, the results revealed that though to a medium extent, cocoa farmers in the study area used Bank of Agriculture credits scheme funds to support their farm businesses which is expected to have significant impact on their production level.

Hypotheses Testing and Interpretation

The null hypotheses for this study were tested using simple linear regression analysis at 0.05 level of significance.

Hypothesis 1: There is no significant effect of Bank of Agriculture credits on Cocoa production in selected LGAs of Ondo State.

Table 4.3: Summary of Regression Results for Effect of Bank of Agriculture credits on Cocoa production

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.602[a]	0.363	0.360	3.966

a. Predictors: (Constant), Bank of Agricultural Credit

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	11.434	1.249		9.151	0.001
	Bank of Agricultural Credit	0.544	0.044	0.602	12.279	0.001

a. Dependent Variable: Cocoa Production

Source: Researcher's Field Survey Results (2019)

Discussion of Findings and Interpretation of result

Table 4.3 presents summary results of simple linear regression analysis on the effect of Bank of Agriculture credits on Cocoa production in Ondo State. According to the results in Table 4.6 Bank of Agriculture credits have positive and significant effect on Cocoa production in Ondo State ($\beta = 0.544$, $t = 12.279$, $p= 0.001$) while R^2 is 0.360. This result conforms to *a priori* expectation of a positive relationship between Bank of Agriculture credits on Cocoa production. The result of correlation is 0.602; it shows that only almost 60.2% relationship exists between Bank of Agriculture Credit and Cocoa production in Ondo State. The result is supported by the coefficient of determination which was estimated at 0.363. This shows that about 36.3% of the variation in Cocoa production in Ondo State is explained by Bank of Agriculture credits. This calls for inquiry through research to find out the other factors that affect Cocoa production in Ondo State. The regression model using unstandardized coefficients to predict the effect of Bank of Agriculture Credit on cocoa production is expressed as follows:

$Y = 11.434 + 0.544x_1$ ---------- Equation 1

Where: Y = Cocoa production

x_1 = Bank of Agricultural Credit

From the equation above, holding Bank of Agricultural Credit constant at zero, cocoa production is 11.434 which is positive. Further, the result shows that an improvement in Bank of Agriculture Credit would lead to an increase in the cocoa production by 0.544 tonnes. However, the coefficient is statistically significant at $p= 0.001$ which is less than the conventional p-value used for this work. The result indicates that Bank of Agriculture Credit has statistically significant effect on cocoa production in the study area. Based on this result, the null hypothesis which states that there is no significant effect of Bank of Agriculture credits on Cocoa production in Ondo State was rejected.

Summary

Bank of Agriculture Credit was found to have positive and significant effect on Cocoa production in Ondo State, Nigeria. This was confirmed after multiple regression analysis was carried out and provided that $\beta = 0.544$, $t = 12.279$, $p<0.05$. However, the unstandardized coefficient of Bank of Agriculture Credit is 0.360 with p-value of 0.001 and the result of correlation is 0.602; it reveals that only almost 60.2% relationship exists between Bank of Agriculture Credit and Cocoa production in selected LGAs of Ondo State. The result is supported by the coefficient of determination which was estimated at 0.363. This shows that about 36.3% of the variation in Cocoa production in Ondo State is explained by Bank of Agriculture credits. As a result, the hypothesis one (H_{01}) is rejected.

Conclusion and Recommendations

This study concludes that an increase in the level of credit availability to cocoa production will lead to increased production which is crucial to the economic growth of Nigeria and regaining its lost glory as the second world cocoa producer. The following are therefore recommended:

The Bank of Agriculture credit scheme funds should be enforced by the central bank to enable small scale peasant farmers to benefit from the scheme. Commercial banks should have 100% guarantee and also allow charging at least minimum lending rates.

The Federal government should consider developing policies that will create an enabling environment for the development and proper operation of credit organizations and re-organize all the existing institutional credit schemes.

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