Effect of Covid-19 pandemic on agricultural output in Calabar Metropolis of Cross River State, Nigeria

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Abstract
The study investigates the effect of Covid-19 pandemic on agricultural output in Calabar metropolis of cross river state using the independent chi square analysis. The population of the study comprises one thousand farmers. The researcher purposively selected four hundred farmers using a simple random sampling. It was discovered that the performance of agricultural output in terms of crop production and livestock farming have been negatively affected due to the covid-19 pandemic which indicates that, the ongoing covid-19 agricultural intervention and conditional cash transfer funds is yet to have a positive impact on agricultural output and the real sector economy of Calabar Metropolis. The immensity of this effect relates to the farmers acquisition of land, improved seedlings, livestock fingerlings to mitigate the cost of farming. The study therefor implies that government should enforce total compliance and adherence to Covid-19 vaccine and partner with the private sector as a bit to mitigate the continuous spread of the virous, revive agricultural sector, support and invest more in scientific research as an effort to finding total cure to Covid-19 as continuous spread will bring about a total scarcity in the supply and cultivation of agricultural products and hence urgently subsidize the cost of crop production.

Key Words: Covid-19, Pandemic, Agricultural Output, Calabar Metropolis and production

Introduction

The Agricultural sector is one of the most focused sector for Nigeria's economic diversification drive. This is because of the role it plays in ensuring food security, promoting industrialization, providing jobs and employment opportunities and stimulating strong resilience to external vulnerabilities and fostering shared prosperity. The agricultural sector has been growing steadily over the last three years at an average of 2.6%. As at the first quarter of 2020, the sector accounted for about 22 per cent of Nigeria's gross domestic product (GDP) compared to oil and gas (9.5 per cent), manufacturing (9.7%), financial services (3.8%) and trade (16.1 per cent). Agriculture's contribution to GDP average 24.6% over the past five years from 2015 to 2019. Additionally, the agricultural sector is the largest employer of labour in the country, providing jobs for more the one third (36.4 per cent) of the Nigerian labour force, the highest over the past 28 years (1991-2019), according to the CBN (2018). Agriculture is broadly divided into four sector in Nigeria- crop production, fishing, livestock and forestry. Crop production remains the largest segment and it accounts for about 87.6 per cent of the sector's total output. This is followed by livestock, fishing and forestry at 8.1%, 3.2% and 1.1% respectively. Major crops produced in the country include cassava, sesame, rice, cocoa, palm oil, ginger, groundnut, tomatoes, sorghum, millet and wheat. In 2018, total cassava output stood at about 59.5 per cent million metrics tones compared to Thailand and Congo DR at 31.7 million metrics tones and 30 million metrics tones respectively. Nigeria's major agricultural imports includes wheat, sugar, fish and milk, while the main agricultural exports cut across sesame seeds, cashew nuts and fermented cocoa beans to ginger, frozen shrimp and cotton. Sesame, cashew nuts and cocoa account for more than half of the nation's agricultural exports.

More so, Nigeria's agricultural exports declined by about 11per cent from N302.2 billion in 2018 to N269.8 billion in 2019. Despite the government's attempt to reduce the nation's food import bill and drive self- sufficiency in agriculture, Nigeria's agricultural imports rose by 12.7 per cent from N851.6 billion to N959.5 billion during the same period, the highest value ever recorded in the country. Nigeria remains a net food importer the agricultural trade deficit has widened with imports exceeding exports by N689.7 billion in 2019 compared to N549.3 billion in 2018. In four years (2016-2019), Nigeria's cumulative agricultural imports between 2016 and 2019 77stood at N3.35 trillion, four times higher than the agricultural export of N803 billion within the same period CBN (2021). Meanwhile, the share of agriculture in Nigeria's total export earnings remains small compared to crude oil exports. In 2019, agriculture accounted for less than 2% of total exports relative to crude oil (76.5 per cent). This is because Nigeria's agricultural sector is primarily focused on meeting domestic demand and is less export oriented. Despite this, food production in Nigeria has not been able to keep up with population expansion and this has resulted in an increase in the importation of agricultural products, even with increased productivity among some agricultural products. Many authors and researchers have identified the food security vacuum in Nigeria. They have stressed on the implementation of policies that can enhance food availability in the country through agricultural development. However, all suggestions emanating from the excellent empirical evidence have not yet attracted the attention of the relevant authorities. Following the outbreak of COVID- 19 pandemic in the world with a global statistic of 162,343,505 cases, 3,368,515 deaths, 140,241522 recoveries (Odende, S. 2020) of which Nigeria accounts for 165,612 patients, 2066 deaths, 156,387 rescues (Nigeria Centre for Disease Control (NCDC, 2021) as at the time of this research, the challenge of food security in Nigeria has become very obvious and glaring.

In another development, "Following the extension of corona virus lockdown by President Muhammadu Buhari, the Yoruba Youth Assembly has said that people of the southwest region and indeed other parts of the country were more worried about how to deal with hunger than the COVID-19 pandemic"(Akinola, 2020). "In Nigeria, our diversification should embrace agriculture as the primary sector earmarked for development because agriculture is a low hanging fruit, its key is to ensuring food subsistence, and with the recent signing of the African Continental Free Trade Area Agreement (ACFTAA), Nigeria can take advantage of this to become an agricultural powerhouse in Africa" (Asadu, 2020). Following the global outbreak of COVID-19 pandemic, the Nigerian oil price was initially forced down from the estimated $57 per barrel to $30 per barrel (Nwagbara, 2020). Brent crude currently trades at $25.14 as against $45/$50 before COVID-19 pandemic (Asadu, 2020). The situation led to Nigeria's 2020 budget adjustment, as a result, both capital and recurrent expenditure budget was eventually reduced by 20 per cent and 25 per cent respectively (Nwagbara, 2020). At the same time, agriculture that should be the primary source of export and foreign currency earning is relegated to the background. Following the compulsory lockdown due to COVID-19 pandemic, the prices of the scarce agricultural products skyrocket, thus, resulting to the consumption of substandard foodstuffs that have reduced nutritional importance and are less essential for the health (Mkhawani et al., 2016) of the general public. Again, the global COVID-19 pandemic has affected agricultural output adversely in that, it weakening output- growth through obtaining factor inputs as spending on off- shore inputs, which makes a larger portion of aggregate inputs that has to be cut back significantly. For instance, in agricultural sector, there was decrease in farm- to- market distribution of agricultural products (Asadu, 2020) thereby, leading to food death and hence increase in the prices of agricultural products. Again, this problem stemmed from the long period of military rule to which the country

was subject to when leadership was entrusted to incompetent individuals, during that period, nepotism, bureaucracy and corruption were the order of the day which led to general mismanagement of the Nigerian economy. The military regime was characterized by serious neglect and poor funding of human capital development variables like education and health. It was also characterized by political instability which led to frequent changes in educational policies and related indices as well as general misappropriation of public funds.

However, it is obvious that only a healthy population can be fully productive as health care is not only health producing but also wealth producing. Again, in 2012, the education sector got a meager of 8.4% of the budget, while the health sector got about 6% (2012 national budget). The human development index (HDI) has three indicators; income, life expectancy (proxy to health and knowledge proxy to education). Nigeria score on the 2010 Gittobal competitiveness index (GCI) was 3.38 which gave her a rank of 127 out of the 139 countries surveyed. The 2010 HDI report showed that Nigeria ranked 142 with a value of 0.423 among 169 countries. The 2011 HDI report showed that Nigeria ranked 156 with a value of 0.459 among 187 countries, these shows that investment on human capital is not given priority in Nigeria.

The main objective of this research is to evaluate the effect of Covid-19 pandemic on agricultural output in Calabar Metropolis of Cross River State. The specific objectives will be to

i. Determine the effect of covid-19 pandemic on crop production, livestock production and fisheries production in Calabar Metropolis of Cross River State.

Research Hypothesis stated in this was on the null form to ascertain the direction of the research to include:

i. There is no significant relationship between covid-19 pandemic on crop production, livestock production and fisheries production in Calabar Metropolis of Cross River State.

The Scope of the study was to investigates the effect of Covid-19 pandemic on agricultural output in Calabar Metropolis of Cross River State. The span of this study covers the period between the pandemic (2020). The scope is chosen to be able to provide adequately detailed information which is paramount for a critical analysis and also to trace the trend of Covid-19 pandemic within this period and consequently it effects on Calabar Metropolis of Cross River State.

The Significance of the study is that a comprehensive analysis of the effect of the pandemic on agricultural output in Calabar Metropolis, therefore, this study will add to the growing body of literature on the Covid-19 pandemic by examining the consequences of the Covid-19 outbreak and the induced lockdown restrictions in Calabar Metropolis as well as the implication on agricultural output. The result of the study will contribute to understanding the critical need of farmers living in Calabar Metropolis and control the negative consequences of the pandemic on their quality of life. Again, the outcome of the study will also complement the existing knowledge to guide policy discussion on food security implications and coping measures during the pandemic and inform decision makers in Calabar Metropolis, Cross River state and Nigeria at large.

Literature Reviewed looked at the concept of Coronavirus disease 2019 (COVID-19) as illness caused by a novel coronavirus called severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2; formerly called 2019-nCoV), which was first identified amid an outbreak of respiratory illness cases in Wuhan City, Hubei Province, China. It was initially reported to the World Health Organization (WHO) on December 31, 2019. On January 30, 2020, the WHO

declared the COVID-19 outbreak a global health emergency. On March 11, 2020, the WHO declared COVID-19 a global pandemic, its first such designation since declaring H1N1 influenza a pandemic in 2009. Illness caused by SARS-CoV-2 was termed COVID-19 by the WHO, the acronym derived from "coronavirus disease 2019." The name was chosen to avoid stigmatizing the virus's origins in terms of populations, geography, or animal associations. On February 11, 2020, the Coronavirus Study Group of the International Committee on Taxonomy of Viruses issued a statement announcing an official designation for the novel virus: severe acute respiratory syndrome coronavirus 2 (SARS).

Effect of Covid-19 on labour production

At first, it was reported by NCDC (2020) that the southern part of Nigeria particularly, Lagos and Ogun. states are the most affected by the consequences of (Covid-19). Nevertheless, statistics of Covid-19 from NCDC report as at 10th May, 2020 showed that the northern hemisphere of the country is the most affected currently. At the moment, outside Lagos state which ranked number one in term of the highest confirmed case and death rate with Covid-19, the combined high cases in term of geographical classification are found in the north particularly, Kano, Kastina, Yobe and Bauchi states (NCDC, 2020). Thus, Covid-19 is causing losses in labour and such negative effects are anticipated to be far worse than the financial crisis of 2008-2009, particularly in the next three months (International Labour Organization, 2020). Also, since there is lack of inter-states imported manpower in the countries due to the further restrictions imposed by governmental measures to immigration, because of Covid-19. This would cause a decline in labour force availability, and adversely affect livelihoods and incomes. Nowadays, most of the infected countries with Covid-19 stated partial or full curfew as a result of contagion fear. Thus, farmers in different regions of the nation will be in an impasse by the planting and harvesting seasons.

Effect of Covid-19 on agriculture and food security

While both the short-term and the long-term effect of Covid-19 disease on food security is challenging, the potential risk could be anticipated. In the last three months (March-May, 2020), the national food supply has been insufficient and unstable. For instance, cereals such as wheat and maize as well as legume crops supplies were insufficient and this raised the prices of the products. Moreover, the country is going to face some challenges in exporting food products such as grains from the country to other neighboring and European countries due to the restrictions of interstates and international transportations among states and countries respectively.

Interaction between health and agricultural output

The interactions between these two factors (health and agriculture) are two ways (bidirectional); agriculture affects health, and health affects agriculture. The process of agricultural production and the outputs it generates can contribute to both good and poor health, among producers as well as the wider population. Agriculture is fundamental for good health through the production of the world's food, fiber and material for shelter, and in some systems, medicinal plants. Yet agriculture is associated with many of the world's major health problems, including under nutrition, malaria, foodborne disease, diet-related chronic disease, and a range of occupational health hazard. Agriculture can contribute to both the spread and alleviation of these health conditions. In the other direction, the occurrence of these health conditions has tremendous implications for agriculture. In the general populations, workers in poor health are less able to work, a situation that cuts productivity and income, perpetuates a downward spiral into ill health

and poverty, and further jeopardizes food security and economic developments for the wider population.

Challenges in the agricultural sector in Nigeria

(a). Resource shortages: Over the past years, Nigeria has dealt with very low yields per hectare due to shortages in the supply of inputs such as seedlings and fertilizers as well as inadequate irrigation and harvesting systems, which hinders productivity and yield rates in Nigeria.

(b). Absences of value addition and supply chain linkages: Nigeria focuses mostly on food production, thus neglecting the processing and manufacturing segment of the value chain. The chain reaction that arises from shortages of resources, lack of financing for small-scale farmers and inefficient transport system, exacerbate the development of food production along the value and supply chain.

(c). Lack of access to finance: Although the Nigeria government has provided several facilities through the Central Bank of Nigeria (CBN) such as the Anchor Borrower's Programme to help provide small-scale farmers with adequate financing, the farming industry still lacks adequate access to finance.

(d). Lack of the business element in the agricultural sector: Small-scale farmers make up a large percentage of agricultural enterprises and they struggle to transform from subsistence farming into profitable businesses due to lack of access to finance and illiteracy.

(e). Outdated system of agriculture: Outdated methods of agriculture such as the use of how's and cutlasses reduce efficiency as these methods are costly and time consuming. Nigeria's failure to adopt advanced mechanized systems has reduced the quality of its agricultural outputs.

(f). Violent conflicts: Due to the desertification and water depletion in the northern part of Nigeria, nomadic herdsmen are now shifting towards the south of the country in search of gazing fields and water for their animals. This has resulted in violent conflict with crop farmers in the south. Increased violence in the food producing states is causing decline in Nigeria's food production output.

(g). insufficient supply to meet population growth and food demand: With a population of roughly 200 million people, Nigeria's agricultural productivity is insufficient to meet the food demanded of its growing population thus increasing the demand and supply gap in Nigeria.

Covid-19 pandemic and Nigeria's agricultural output

COVID-19 has impacted global food security due to the lockdown and movement restrictions across many countries of the world. I'm a bid to combating the impending global hunger, the need to attain food security has become extremely important. According to the World Food Programme (WFP), the pandemic could plunge about 265 million people (up from 135million people) into actue hunger by the end of 2020. Prior to COVID-19, Nigeria's agricultural sector is affected by several challenges ranging from drought and flooding occasioned by climate change, and widespread instabilities Including the Bolo Ha ram crisis, cattle rustling in the North and farmer-herder clashes across the South and Middle Belt. The outbreak of COVID-19 may further exacerbate the challenges of the country's agricultural sector, thereby impacting the nation's food security. According to a survey by the Oxford Business Group, more than half (60 per cent) of chief executive officers (CEOs) of Nigerian companies stated that COVI-19 will significantly disrupt the agricultural sector in Nigeria

Furthermore in 2018, about five million people in 16 Notheren states of the country suffered from acute food insecurity, with Borneo, Yobe and Adamawa states accounting for more than half (60 per cent) of the total number of people affected. By the end of the first half of 2020, the number of people from the 16 Northern states suffering from acute food insecurity is projected to increase to seven million people. In March 2020, Nigeria was listed among 44 countries globally that require external food assistance. According to the Food and Agriculture Organization (FAO), the majority of the country's population is unable to procure food prices and bottlenecks in the distribution of agricultural products within the country. Some of the ways in which the COVID-19 pandemic is impacting the country's agricultural sector and food security are enumerated in the points below.

Development finance institutions and commercial banks credit financing to agribusiness

The Bank of Industry (BOI) in Nigeria has continued to support the growth of the agricultural sector in the country through loans for the development of the value chain. Financial loans provided by BOI to agricultural-related businesses since 2015 totaled over N193 billion and it is projected that the current level of transactions in agribusiness could triple in the coming years. Between 2015 and the first quarter of 2020, the BOI facilitated the creation of an estimated 880,000 direct and indirect jobs in the sector. The development impact of the BOI can be seen in its support of small-holder farmers. Through its small-holder cluster financing initiative, the BOI has financed 73,000 MT of agricultural crops with about 36,000 MT assigned to manufacturers. Commercial banks are also at the forefront of institutions ramping up credit support for the agricultural sector. Over the past five years, bank loans for the development of the agricultural sector have been on an upward swing. Notwithstanding this, the share of agricultural loans is small compared to other sectors.

Attempts by the BOI and commercial banks to finance the agricultural sector are commendable. However, it is important to note that not all the challenges facing the agricultural sector can be solved efficiently with credit. There is a need for financial institutions to do in-depth root cause analysis of the level of growth in the agricultural sector despite the quantum of credits already available to the sector.

Degraded 2020 farming season and possible effect on food availability from third quarter of 2020.

The availability of food in Nigeria is determined by, among other factors, the farming season. The farming season varies with crops across the different regions of the country. For instance, maize planting begins March/April in the Southern part of the country and harvesting is carried out between June and August. The situation is slightly different in the North where planting kicks off by May/June and the harvesting activities are carried out in August/September. The commencement of the rainy season marked the beginning of the farming season for most crops in Nigeria. However, community transmission of COVID-19 as well as interstate movement restriction led to shortages of farm labourers for the current farming season. Given the disruption to the farming calendar, signs of reduction in availability of agricultural output in the market became evident from the third quarter of 2020. This was more worrisome due to the ban on importation of major food products and the depletion of the strategic food reserves. Also, local agro-industrial players faced shortages of key inputs and raw materials for production like: hike in food prices, disruption in food distribution and supply chain, depletion of the strategic reserves of food, decline in export earnings from agribusiness, slowdown in the implementation of government's agribusiness funding interventions, disruption to Agricultural Promotion Policy

(APP) targets for self-sufficiency in certain food, decline in income of farmers, policy measures and agricultural output in Nigeria, agricultural promotion policy, the anchor borrowers' programme, and the economic recovery and growth plan (ERGP).

Theoretical Framework

Several theories were reviewed in this research work to include:

Endogenous growth theory or new growth theory was propounded by Arrow in 1962 and developed in the 1980s. The endogenous growth holds that policy measures can value an impact on the long run growth rate of an economy. Endogenous growth economist believe that improvements in productivity can be linked to a faster pace of innovation and extra investment in human capital. Endogenous growth theories describe economic growth which is generated by factors within the production process, for example, economic of scale, increasing returns or induced technological change, as opposed to outside (exogenous) factor such as the increase in population (Adepoju, A., and Oyegoke, O. (2018).). In endogenous growth theory, the growth rate has depended on one variable: the rate of return in capital (Grillman, Harris and Matyas, 2009). The endogenous growth literature has produced two distinct approaches on how to incorporate human capita as the engine of growth. The second approach emphasize the role of human capital stock in the process of innovation and adoption of new technologies. In the model formulated by Lucas, human capital enters into the product function similarly to the way in which technology does in the Solow model, that is, in labour-augmenting form. Lucas proposes the following production technology.

$Y_{t=} AK^{a}_{t}(u_t h_t l_t)1\text{-}8$

Where Y, A, K, and L are output, technology, capital and labour, while u is the fraction of an individual's time allocated to work, h is the skill level or human capital of the representative agent, and h_a is the average human capital in the economy. The level of technology, A, is assumed to be constant (so subsumed within the capital term), population growth is taken as exogenous setting aside the last term on the right-hand side for the moment, the most important assumption of the model concerns the law of motion according to which the human capital variable evolves over time, and because there are no administering returns to the acquisition of skills, human capital can growth without bound, thereby generating endogenous growth. The properties of the steady state in the Lucas model depend on whether there are external effects of human capital, which is the case if Y=0. In that case, the long-term h in the product function therefore affects output. And because there are no diminishing returns to the acquisition of skills, human capital can growth without bound, thereby generating endogenous growth.

The human capital theory derives its root from the celebrated work of Schultz (1960). Schultz developed his idea of human capital in the early 1980s as a way of explaining the economic gains of investing in education and health to improve agricultural output. This argument was logically expanded to show the link between better education and improved productivity as a benefit for the whole economy. This implies that in the absence of human capital, other factors of production would function sub-optimally Becker (1998) developed this idea further explaining that expenditure on education, training and medical care would ultimately all be considered as investment in human capital. Also, he further stated that model Economist seem to agree with the position that education and health care expenditures are key factors to improving human capital and ultimately economic growth and development. According to Becker, they are called human capital because people cannot be separated from their knowledge, skills, health or values in the

same way then can be separated from their financial and physical asserts. According to Fagerlind and Saha (1999) human capital theory provides a basic justification for large public expenditure on education both in developing and developed nations.

Health capital theory the underlying framework for analyzing the effects of health expenditure on economic growth via health outcomes in the study follows the Grossman (1982) health capital model, the individual is assumed to maximize utility subject to wealth/income and time constraints and a health depreciation function. Grossman distinguishes between the uses of health and a consumption good, which is a derived demand for good health necessitating the use of medical services. Grossman (2012) presented the utility maximizing problem of the individuals as inter-temporal problem where the individual maximize utility overtime specified thus: U_t= U(H_t Z_t), t= 0,1,2.....1

Where H_t is stock of health and Z_t is a vector of consumption of goods, U_t however, Grossman (2000) derive a reduced form of education that can be eatimated from household/ individual/ government survey data as follows: H_t = $_a$ InM_t + $_b$ E - 8_t = inc.....2

Equation 2 presents a health demand function, which according to Grossman also double as a health production function in the investment model/ as the individual/ government is assumed to invest in health care to improve health and also increase productivity and growth. M_t represents health investment, and E represents education, it is a time factor that represents the depreciation in health that is associated with age. The study postulates the effect of health in economic growth by the relation below as: Y_{it} = f(K_{it} , L_t . E_{it} , H_{it}) 4

Education from the above expression shows output of goods in country i at time t as a function or physical capital (K_{it}), Labour (L_{it}) and human capital, which is captured using two components, education (E_{it}) and health (H_{it}). Thus, this study postulates that the production of goods follows the functional form specified in equation 4. So for this study, government expenditure on health is treated of its citizens, which increases life expectancy, thereby increasing output and promoting economic growth as the end product.

Research methodology

The research design used in this study was survey design. This method was preferred because it aimed at collecting large and small samples from population in order to determine some desirable characteristics of this study (Ndiyo, 2005). The design adopted is to aid the researcher collect sample from the study in order to examine the impact of COVID-19 and Agricultural Productivity in Calabar Metropolis. The study area is Calabar Metropolis of cross river state Calabar Metropolis comprises of Odukpani, Calabar Municipality and Calabar South Local Government Areas among the 18 (eighteen) Local Governments in Cross River State. It is located in the Southern Senatorial District of Cross River State, Nigeria. Their occupation include, farming, trading, fishing, lumbering and civil service, but one thing that is common among them is the severance for traditional institutions and their accessories as symbolized by the deities, dances, festivals, folk live among others. The population of the study comprises one thousand (1000) farmers (both peasant and commercial) in Ikom Local Government Area. The researcher purposively selected four hundred (400) farmers with a numerical strength of one thousand (1000) famers. The sampling technique adopted for this study is the simple random sampling technique. In this technique, each of the respondents has equal and independent chance of being selected. The sample size was determined using Yaro Yamane's formula for known population as follows:

$$n = \frac{N}{1+N(e)^2}$$, Where: n = sample size, N = population, e = standard error or allowable.

The instrument used in the study was Questionnaire on Principals' Instructional Supervision of Teachers (QGPIST) and Questionnaire on the effect of covid-19 pandemic and agricultural output. These were to elicit appropriate responses from the respondents on statements related to the hypothesis of the study. The items were constructed on a 4-point Likert-type scale which include options; strongly agree (SA), Agree (A), Strongly Disagree (SD), and Disagree (D). These responses were scored 4,3,2, and 1 respectively for the items, QGPIST which was completed by the famers described the the effect of covid-19 pandemic. It comprised 5 items. The second instrument, (QTTE) was 15 items. It comprised four sections A, B, C and D. each section sought to measure crop production, livestock production and fisheries production in Calabar Metropolis of Cross River State. In determining the validity of the study, questionnaire was administered to respondents to ascertain the level of consistency at different time. The questionnaire was administered as a means of data collection to the respondents in their respected farms in some cases through some researchers' assistants in the sampled communities. This was done with the assistance of the famer's association of Nigeria Calabar chapter.

Findings of the study

Figure 4.1 Sample Distribution by Gender

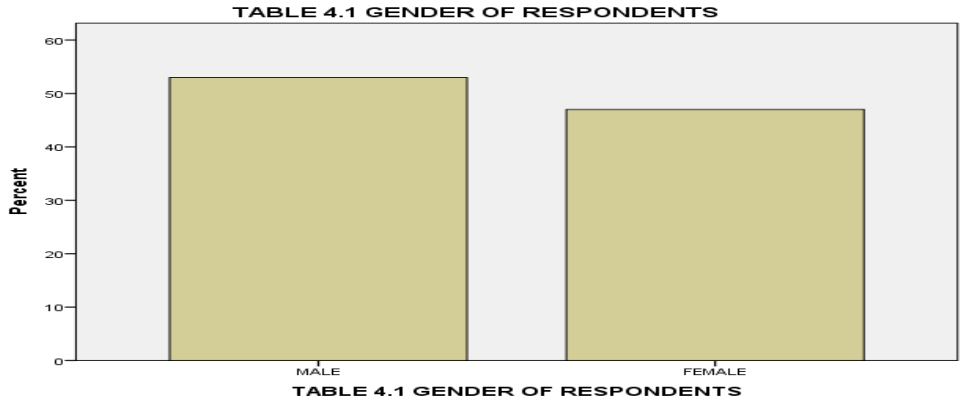

Figure 4.1 above shows that out of 200 respondents, 54 per cent were males while 46 per cent were females respectively, implying that more females were interviewed than females.

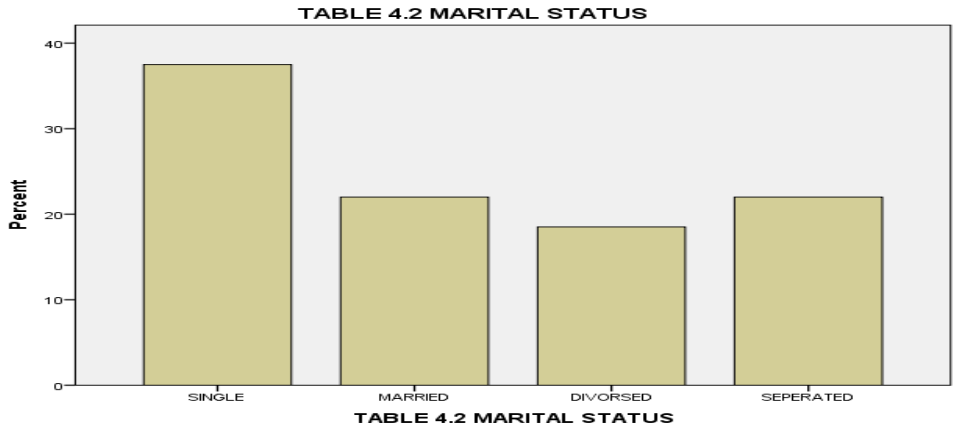

Figure 4.2 above shows that above shows that out of 200 respondents, 38 per cent were singles, 22 were married, 18 were divorced and 22 per cent were separated. By implication, more singles were interviewed respectively.

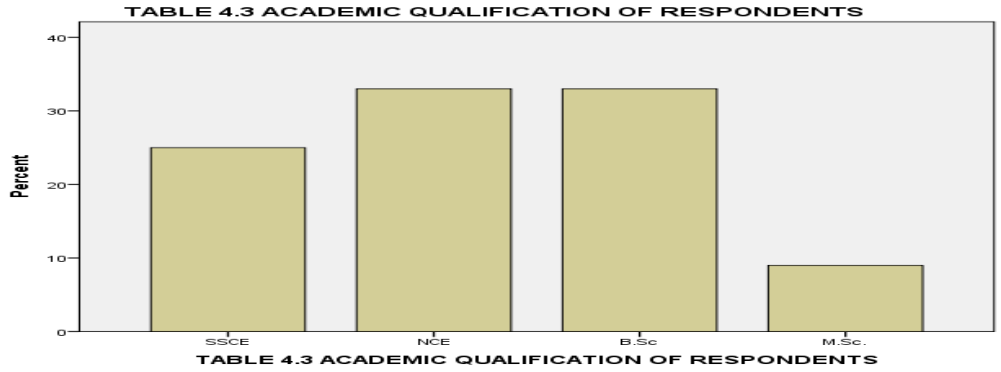

TABLE 4.3 ACADEMIC QUALIFICATION OF RESPONDENTS

Figure 4.3 above shows that out of 200 respondents, 25 per cent has SSCE, 34 per cent had NCE, again 34 per cent had B.Sc. while 7 per cent had M.Sc. This implies that majority respondents had NCE and B.Sc. respectively.

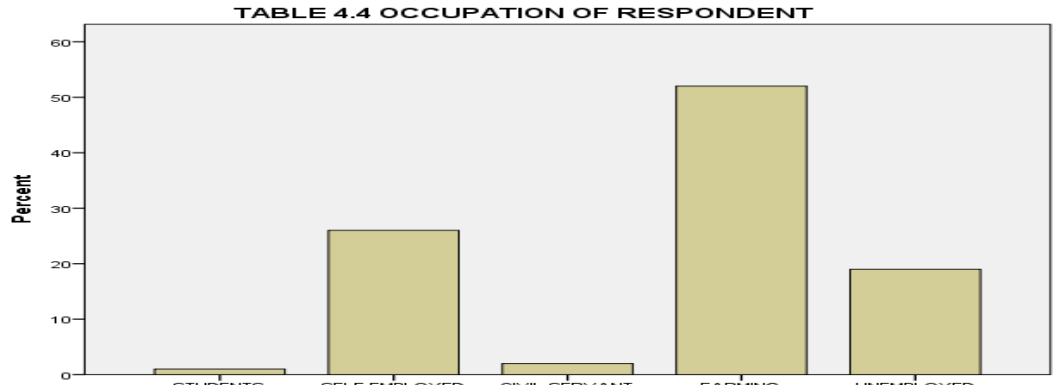

TABLE 4.4 OCCUPATION OF RESPONDENT

Figure 4.4 above shows that out of 200 respondents, 2 per cent were students, 25 per cent were unemployed, 3 per cent were civil servant, 52 per cent were farmers while 18 per cent were unemployed. This implies that more farmers were interviewed respectively.

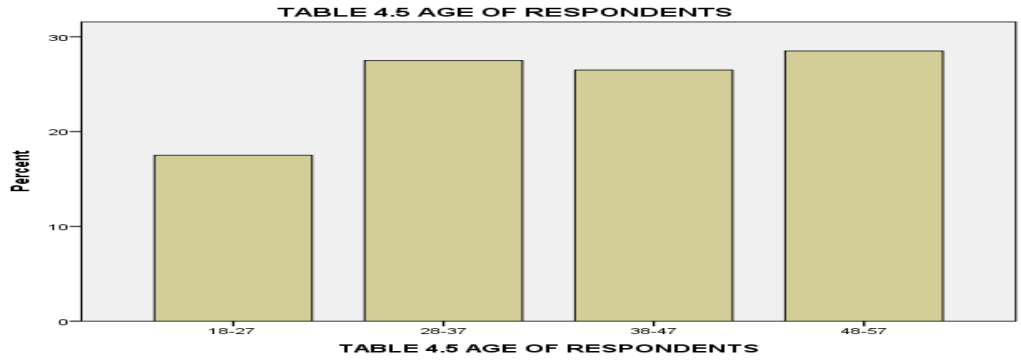

TABLE 4.5 AGE OF RESPONDENTS

Figure 4.5 above shows that out of 200 respondents, 17 per cent were between those ages of 18-27, 28 per cent were between 28-37 years old, 26 per cent were between 38-47 per cent while 29 per cent were between the ages of 48-57 per cent. By implication, majority of respondents were the ages of 48-57 years respectively.

TABLE 4.1 There is Covid-19 in Cross River State.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SA	6	3.0	3.0	3.0
	A	127	63.5	63.5	66.5
	D	27	13.5	13.5	80.0
	SD	40	20.0	20.0	100.0
	Total	200	100.0	100.0	

Table 4.1 shows that out of 200 respondents, 6 representing 3.0 per cent strongly agreed, 127 agreed, 27 disagreed while 40 respondents representing 20.0 per cent strongly disagreed that there is Covid-19 in Cross River State. Therefore, majority of respondents agreed that there is Covid-19 in CRS respectively.

TABLE 4.2 The outbreak of Covid-19 curbed crop production in Cross river state.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SA	36	18.0	18.0	18.0
	A	132	66.0	66.0	84.0
	D	31	15.5	15.5	99.5
	SD	1	.5	.5	100.0
	Total	200	100.0	100.0	

Table 4.2 above shows that out of 200 respondents, 36 representing 18.0 per cent strongly agreed that Covid-19 curbed crop production in CRS. 132, representing 66.0 per cent agreed, 31 representing 15.5 disagreed while 1 respondent representing 0.05 per cent strongly disagreed that Covid-19 curbed crop production in CRS. This implies that majority of respondents agreed that Covid-19 curbed crop production in Cross River State.

TABLE 4.3 Covid-19 outbreak led to an increase in the supply of crops in Cross River State.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A	16	8.0	8.0	8.0
	D	78	39.0	39.0	47.0
	SD	106	53.0	53.0	100.0
	Total	200	100.0	100.0	

Table 4.3 above shows that 16 respondents representing 8.0 per cent agreed that Covid-19 led to an increase in the supply of crops in CRS. 78 respondents, representing 39.o per cent disagreed while 106 respondents, representing 53.0 per cent strongly disagreed that the outbreak of Covid-19 led to an increase in the supply of crops in Cross River State.

TABLE 4.4 Covid-19 outbreak brought about an increase in food prices in Cross River State.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SA	86	43.0	43.0	43.0
	A	112	56.0	56.0	99.0
	D	2	1.0	1.0	100.0
	Total	200	100.0	100.0	

Table 4.4 above shows that out of 200 respondents, 86 representing 43.0 per cent strongly agreed, 112 representing 56.0 per cent agreed while 2 representing 1 per cent disagreed that Covid-19 outbreak brought about an increase in food prices in CRS. This implies that majority of respondents agreed that Covid-19 outbreak brought about an increase in food prices in CRS respectively.

TABLE 4.5 Generally, Covid-19 had a significant impact on Agriculture in Cross River State.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SA	1	.5	.5	.5
	A	102	51.0	51.0	51.5
	D	56	28.0	28.0	79.5
	SD	41	20.5	20.5	100.0
	Total	200	100.0	100.0	

Table 4.5 above shows that out of 200 respondents, 1 representing .05 strongly agreed that Covid-19 had a significant impact on Agriculture in Cross River State, 102 representing 51.o per cent agreed, 56 representing 28.0 per cent disagreed while 41 respondents, representing 20.5 per cent strongly disagreed that Covid-19 had a significant impact on Agriculture in CRS. This implies that majority of respondents agreed that Covid-19 had a significant impact on Agriculture in CRS.

TABLE 4.6 There are Livestock Farms in CRS.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SA	22	11.0	11.0	11.0
	A	89	44.5	44.5	55.5
	D	89	44.5	44.5	100.0
	Total	200	100.0	100.0	

Table 4.6 above shows that out of 200 respondents, 22 representing 11.0 per cent strongly agreed that there are livestock farms in CRS, 89 representing 44.5 per cent agreed that there are livestock farms in CRS while 89 again representing 44.5 per cent disagreed that there are livestock farms in CRS. This implies that more respondents agreed that there are livestock farms in CRS respectively.

TABLE 4.7 The outbreak of Covid-19 reduced livestock farming in Cross River State.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SA	39	19.5	19.5	19.5
	A	111	55.5	55.5	75.0
	D	50	25.0	25.0	100.0
	Total	200	100.0	100.0	

Table 4.7 above shows that out of 200 respondents, 39 representing 19.5 per cent strongly agreed that the outbreak of Covid-19 reduced livestock farming in CRS, 111 representing 55.5 per cent agreed, while 50 representing 25.0 per cent disagreed that Covid-19 reduced livestock farming in CRS.

TABLE 4.8 The outbreak of Covid-19 increased livestock prices.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SA	101	50.5	50.5	50.5
	A	51	25.5	25.5	76.0
	D	40	20.0	20.0	96.0
	SD	8	4.0	4.0	100.0
	Total	200	100.0	100.0	

Table 4.8 above shows that out of 200 respondents, 101 representing 50.5 per cent strongly agreed that the outbreak of Covid-19 increased livestock prices, 51 respondents representing 25.5 per cent agreed, 40 representing 20.0 per cent disagreed while 8 respondents representing 4.0 per cent strongly disagreed that the outbreak of Covid-19 increased livestock prices. This implies that majority of respondents strongly agreed that Covid-19 increased livestock prices in CRS.

TABLE 4.9 The outbreak of Covid-19 led to scarcity of livestock.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SA	27	13.5	13.5	13.5
	A	106	53.0	53.0	66.5
	D	17	8.5	8.5	75.0
	SD	50	25.0	25.0	100.0
	Total	200	100.0	100.0	

Table 4.9 above shows that out of 200 respondents, 27 representing 13.5 per cent strongly agreed that the outbreak of Covid-19 led to scarcity of livestock, 106 representing 53.0 agreed, 17 representing 8.5 per cent disagreed while 50 respondents representing 25.0 per cent strongly disagreed that the outbreak of Covid-19 led to scarcity of Livestock in CRS. This implies that majority of respondents agreed that Covid-19 led to scarcity of livestock in CRS.

TABLE 4.10 Generally, Covid-19 had a significant impact on Livestock farming in CRS.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SA	142	71.0	71.0	71.0
	A	44	22.0	22.0	93.0
	D	14	7.0	7.0	100.0
	Total	200	100.0	100.0	

Table 4.10 above shows that out of 200 respondents, 142 representing 71.0 per cent strongly agreed that Covid-19 had a significant impact on livestock farming in CRS, 44 representing 22.0 per cent agreed, while 14 respondents representing 7.0 per cent disagreed that CAovid-19 had a significant impact on livestock in CRS. By implication, more respondents believed that Covid-19 had a significant impact on CRS respectively.

TABLE 4.11 There are Fish Farms in CRS.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SA	101	50.5	50.5	50.5
	A	45	22.5	22.5	73.0
	D	54	27.0	27.0	100.0
	Total	200	100.0	100.0	

Table 4.11 above shows that out of 200 respondents, 101 representing 50.5 per cent, strongly agreed that there are fish farms in CRS, 45 representing 22.5 per cent agreed while 54 respondents, representing 27.0 per cent disagreed that there are fish farms in CRS. This implies that more respondents strongly agreed that there are fish farms in CRS respectively.

TABLE 4.12 Covid-19 led to an increase in fish prices.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SA	1	.5	.5	.5
	A	135	67.5	67.5	68.0
	D	34	17.0	17.0	85.0
	SD	30	15.0	15.0	100.0
	Total	200	100.0	100.0	

Table 4.12 above shows that out of 200 respondents, 1 representing .05 per cent strongly agreed that Covid-19 led to an increase in fish prices, 135 representing 67.5 per cent agreed that Covid-19 led to an increase in fish farming, 34, representing 17.0 per cent disagreed while 30 representing 15.0 per cent strongly disagreed that Covid-19 led to an increase in fish prices in CRS. This implies that majority of respondents agreed that the outbreak of Covid-19 led to an increase in fish prices in CRS respectively.

TABLE 4.13 Covid-19 led to an increase in fish-feed in Cross River State.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SA	128	64.0	64.0	64.0
	A	45	22.5	22.5	86.5
	D	27	13.5	13.5	100.0
	Total	200	100.0	100.0	

Table 4.13 above shows that out of 200 respondents, 128 representing 64.0 per cent strongly agreed that Covid-19 led to an increase in fish feed in CRS, 45 representing 22.5 per cent agreed, while 27 respondents, representing 13.5 per cent disagreed that Covid-19 led to an increase in fish-feed in CRS.

TABLE 4.14 Covid-19 led to an increase in the consumption of Fishes.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SA	1	.5	.5	.5
	A	29	14.5	14.5	15.0
	D	145	72.5	72.5	87.5
	SD	25	12.5	12.5	100.0
	Total	200	100.0	100.0	

Table 4.14 above shows that out of 200 respondents, 1 representing .005 per cent strongly agreed that Covid-19 led to an increase in the consumption of fishes, 29 representing 14.5 agreed, 145 representing 72.5 per cent disagreed, whole 25 respondents, representing 12.5 per cent strongly disagreed that Covid-19 led to an increase in the consumption of Fishes in CRS respectively.

TABLE 4.15 Generally, Covid-19 had a significant impact on Fish production.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SA	1	.5	.5	.5
	A	125	62.5	62.5	63.0
	D	41	20.5	20.5	83.5
	SD	33	16.5	16.5	100.0
	Total	200	100.0	100.0	

Table 4.15 above shows that out oof 200 respondents, 1 respondent representing .005 per cent strongly agreed that Covid-19 had a significant impact on fish production in CRS, 125 representing 62.5 per cent agreed, 41, representing 20.5 per cent disagreed while 33 respondents representing 16.5 per cent strongly disagreed that Covid-19 had a significant impact on fish production in CRS respectively. This implies that majority of respondents agreed that Covid-19 had a significant IN pact on fish production in CRS.

Test of Hypotheses

Decision rule: SPSS decision rule for correlation states that if the Pearson's product moment correlation coefficient is greater than 0.5, we accept the alternative hypothesis and reject the null and vice-versa.

Hypotheses: There is no significant relationship between covid-19 pandemic and crop production, livestock farming and Fish farming in Calabar Metropolis of Cross River State.

Correlations

Hypothesis One		TABLE 4.6 There is Covid-19 in Cross River State.	TABLE 4.10 Generally, Covid-19 had a significant impact on Agriculture in Cross River State.
TABLE 4.6 There is Covid-19 in Cross River State.	Pearson Correlation	1	-158*
	Sig. (2-tailed)		.413
	N	200	200
TABLE 4.10 Generally, Covid-19 had a sinificant impact on Agriculture in Cross River State.	Pearson Correlation	-158*	1
	Sig. (2-tailed)	.413	
	N	200	200

*. Correlation is significant at the 0.05 level (2-tailed).

Discussion of findings:

The correlation results above shows a perfect negative but significant correlation of (-158) between Covid-19 and Agriculture in Calabar Metropolis of Cross River State. Implying that as Covid-19 rises, agricultural products decreases in Calabar Metropolis hence, we accept the alternative hypothesis and reject the null and conclude that there is a negative but significant relationship between covid-19 pandemic and crop production, livestock farming and Fish farming in Calabar Metropolis of Cross River State.

Discussion of Major Findings

This study was geared towards evaluating the effect of Covid-19 pandemic on agricultural output in Cross River State in Nigeria. However, from the empirical findings of this study, the following summary is made. There is a negative but significant relationship between covid-19 pandemic and crop production in cross river state. There is a negative but significant relationship between covid-19 pandemic and livestock farming in cross river state. There is a significant but negative relationship between covid-19 pandemic and Fish farming in cross river state. The correlation results from the shows a perfect negative but significant correlation of (-158) between Covid-19 and Agriculture in Calabar Metropolis of Cross River State. Implying that as Covid-19 rises, agricultural products decreases in Calabar Metropolis hence, we accept the alternative hypothesis and reject the null and conclude that there is a negative but significant relationship between covid-19 pandemic and crop production, livestock farming and Fish farming in Calabar Metropolis of Cross River State. In addition, The correlation results above shows a perfect negative but significant correlation of (-158) between Covid-19 and Agriculture in Calabar Metropolis of Cross River State. Implying that as Covid-19 rises, agricultural products decreases in Calabar Metropolis hence, we accept the alternative hypothesis and reject the null and conclude that there is a negative but significant relationship between covid-19 pandemic and crop production, livestock farming and Fish farming in Calabar Metropolis of Cross River State.

Conclusion

This study was embarked to evaluate the effect of Covid-19 pandemic on agricultural output in Calabar Metropolis of Cross River State Nigeria. To achieve this, three objectives were formulated and the various hypotheses were tested using the Pearson's product moment correlation coefficient to determine the existing relationship between agricultural output and Covid-19

Pandemic in Nigeria. the results showed an inverse relationship which is reflective of the extent of damage caused by the spread of Covid-19 on food prices and agricultural product generally. The rife of Covid-19 in Nigeria was as a result of the slow response by the government in regulating air travels and the water ways at the early periods of awareness. This act of negligence has not just led to the deaths of thousands of people as published by the Nigerian center for disease control and other international media houses but has also heralded alongside an increase in the price of agricultural product which is as a result of the drastic shortage in food supply and low rate of production between the covid period. A decisive step to implement the prior recommendations as proffered by this author can rejuvenate the economy and return back food prices to a bearable level.

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