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Perceived Effects of COVID-19 Pandemic on Crop Farmers Farm Activities in South-East Nigeria

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Abstract*: The main objective of the study was to describe the socioeconomic characteristics of crop farmers in the study area and examine the perceived effects of Covid-19 pandemic on the farmers farm activities in the study area in South-East, Nigeria. A multistage, 'purposive and random' sampling technique was used in selecting a sample of 378 crop farmers who were interviewed using validated, structured questionnaire and were analyzed using percentages, frequency distribution tables and mean analyzed using mean scores and standard deviation. Result showed that the mean age of crop farmers was 4.6 years, household size was 6.8 and farmers had a 15 years farming experience. The result revealed that 10 effect indicators understudied were identified by farmers as effects to their farm activities as perceived by the crop farmers turned out positive with an accepted mean values above 2.5. The study concludes that Covid-19 had a negative effect on the reviewed subsectors of the crop farmers in managing their farms from production to marketing. It resulted in fear among farmers of being infected working with other farmers. farmers felt frustrated in relating with other farmers, were worried that harvest and sales of farm produce as well as had difficulties associated with transportation of farm produce which led leading to increase in post-harvest losses. It was recommended among others that government should incentivize the supply of agricultural incentives, such as improved seedlings, soft agricultural loans and improved transportation system should be made available by the government etc. These incentives would no doubt motivate crop farmers to full scale-up-agricultural production and enhance farmers' involvement in their farm activities.*

Keywords: *Covid-19, effect, crop farmers, South-east Nigeria.*

.INTRODUCTION

Coronavirus disease code-named Covid-19, a mild-to-severe respiratory illness that is caused by a coronavirus (genus: *Betacoronavirus*), is transmitted chiefly by contact with infected materials (such as respiratory droplets), and it is characterized, especially, by fever, cough, and shortness of breath and may progress to pneumonia and respiratory failure (Zhu., Su., Wang., Liu., Wu., & Li, 2020). Covid-19 which broke out in Wuhan, China in December 2019 is classified as another zoonotic pathogen human coronavirus (United Nations, 2020a; WHO, 2020a). In response to the issue, the World Health Organisation (WHO) on the 11th of March 2020 declared the coronavirus public health crisis a pandemic due to number of infected persons and the resultant deaths recorded (WHO, 2020). Nigeria is also among the vulnerable African nations, it became the first sub Saharan African country to record a case of Covid-19 which sent waves of panic, anxiety, depression and increased stress (Marbot, 2020). Covid-19 complications in Nigeria, over time have been said to worsen given the weak state of the healthcare system (Marbot, 2020), with the rising numbers of Covid-19 cases, several containment measures was instituted by government in a bid to curb the

spread of the virus, including restriction of inter-state movement, use of alcohol based hand sanitizers, closure of schools, markets, ban on religious and social gatherings as well as federally-ordered lockdown (Olukwakemi *et al.,* 2020). Nigeria recorded her first case of COVID-19 in February 2020 (NCDC, 2020a,b) and by March 23, 2020, federal schools in Nigeria were mandated to close as a result of the escalating spread of COVID-19 and by March 30, 2020, the commercial state hub in Nigeria such as Lagos, Abuja; the capital city and Ogun state in Nigeria were placed under lockdown to contain the spread (NCDC, 2020b). Subsequently, the Southeast among other states joined the lockdown as soon as the directive was given by the Federal Government of Nigeria. The Covid-19 pandemic have a crippling effect on the global economy. It also affected crop farmers' farm activities posing global phenomenal threat, ranging from ill-health, contract infections and parasitic diseases directly or indirectly during the course of farming, food insecurity, economic shocks and setbacks, economic stagnation, human depression, poor social interaction, stagnant agricultural production, limited housing, limited education service delivery, and border closures. According to Ulayi (2019), the emergence of Covid-19 exacerbated already existing production challenges faced by crop farmers' considering Covid-19 induced alteration in agricultural operation, associated challenges to food production and supply chain and its global impact has increased the vulnerability of agricultural production. The spread of the coronavirus disease in the short-run, its long-run effects has exacerbated already faced farming situation in Southeast Nigeria making the region vulnerable and further plunging farmers to chronic starvation, malnutrition, food inadequacy, food shortage, low food supply, and persistent poverty. Until now, the region is yet to come out from the negative impacts and shocks of Covid-19 Pandemic. However, the associated consequences to Covid-19 farmers farm activities affected their ability to meet target consumption levels on a year-to-year basis further plunging farmers into intense food scarcity, excruciating hunger, pain, and food deficit and difficulty managing their farm activities.

Several empirical studies had looked at the Covid-19 situations in Nigeria, (Agada and Igbokwe, 2015) examined the factors influencing food security and its coping strategies. Akukwe (2019) evaluated household food security and its determinants, while Egwue *et al*. (2020) and Agbawodikeizu *et al*. (2021) investigated Covid-19 impact on economic activities and well-being of farmers in Southeast Nigeria. Amongst these studies, none had assessed the perceived effect of Covid-19 Pandemic on crop farmers' farm activities with reference to Covid-19 determinants and farm activities before and after the Pandemic, hence the true essence of this study is to determine the effect of Covid-19 to crop farmers' farm activities. This study filled the gap in knowledge by providing an objective assessment of the true picture of Covid-19 Pandemic and its perceived effect to farmers activities in the Southeast Nigeria.

OBJECTIVES OF THE STUDY

i. describe the socioeconomic characteristics of crop farmers in the study area;
ii. examine the perceived effects of Covid-19 pandemic on the farmers farm activities in the study area.

MATERIALS AND METHODS

Study Design

The study was designed to elicit detailed and needed information from the sampled respondents who were selected using a multi-stage sampling technique. Information on the specific objectives of the study was collected using the data instrument (questionnaire) which was administered in person. The data collected were analyzed using both descriptive and inferential statistics (percentage, frequency distribution table and mean score). The study was structured into five stages: Introduction, Materials and methods, Results, Discussion, and Conclusion.

Description of the Study Area

The study area is the Southeast geopolitical zone of Nigeria. Nigeria is divided into six geo-political zones—North central, North-east, North-west, South-east, South-south, and South-west. Southeast zone is made up of five states: Abia, Anambra, Ebonyi, Enugu, and Imo. This zone is also known as Igbo land because it is largely dominated by the Igbo-speaking tribe of Nigeria. The zone is bounded on the north by Kogi and Benue state, on the east by Cross River State, on the south by Akwa Ibom and River state, and on the west by Delta and Edo State. According to the National Bureau of Statistics, the 2016 population estimate of the area was 22,012,828 persons (NBS, 2017). There are two major seasons experienced in this zone. These are dry and rainy seasons. The dry season lasts between November and March, while the rainy season occurs between April and October. Although, over the recent decades, it appears

very difficult to create a clear cut distinction between the periods referred to as rainy season and dry season especially between March and April, due to climate change. This is epitomized by heavy rainfall during the supposed dry spells suffered during the season that heavy rains are expected. The vegetation of the area is predominantly rainforest, which supports the cultivation of food crops, such as rice, maize, yam, cassava, oil palm, cowpea, sweet potato, cocoyam, plantain, banana, melon, Bambara nut, breadfruit, groundnut, and various vegetables and fruit trees. The people of the region largely engage in farming and trading activities, as well as in other occupations, such as civil service, corporate businesses, etc. The region has divergent beliefs, perceptions, and attitudes about food and nutritional practices, especially during Covid-19. Data was collected for a period of 6 months starting from January to June 2021. Structural frame work of food security and Covid-19 and geographical map of Nigeria showing the Southeast regions were shown in Figures 1 respectively.

Data Collection

The questionnaire was developed by the researcher to captured information needed for the study. The questionnaire was administered in person to the 378 selected households in Enugu, Abia, and Imo States, respectively. The researchers guided the filling of the questionnaire to ensure total compliance from the crop farming households (respondents). Data collected were carefully sorted out, standardized, coded, and entered in an excel spreadsheet for data analysis using descriptive and inferential statistics. Moreover, before the actual data collection, the first pilot survey was conducted using 20 households to determine the effectiveness of the questionnaire in terms of reliability. This action was repeated again, after 1 month. The two sets of responses were correlated using Pearson Product Moment Correlation (PPMC). An r-value of ≥ 0.5 implied that the instrument is reliable. The test-retest reliability of the questionnaire yielded a correlation coefficient of **0.78** and was significant at 5% levels. This expresses the research instrument of high reliability and suitability of the questionnaire for actual data collection.

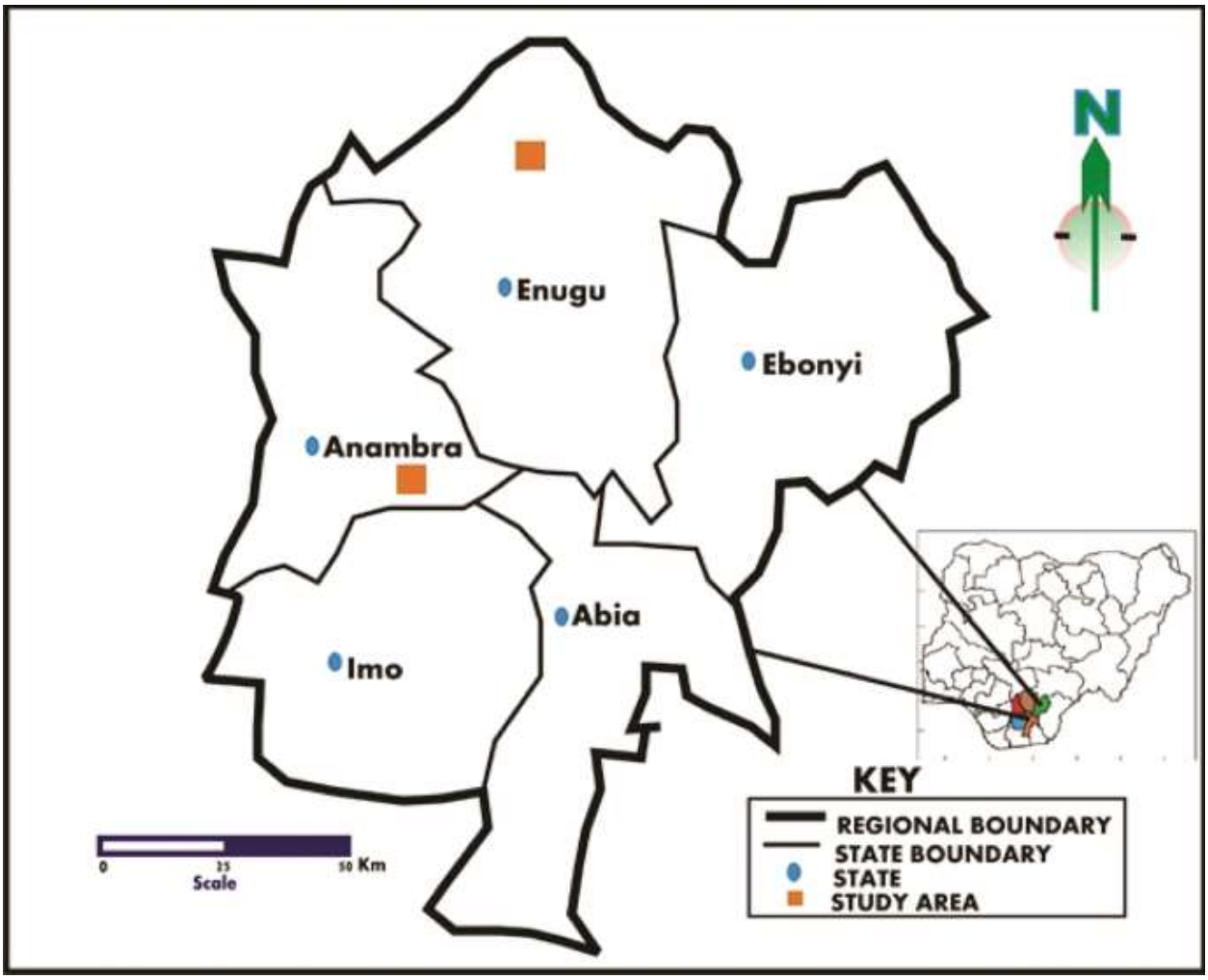

Figure 1: Map showing the Southeast geographical zone of Nigeria. (NBS, 2017).

Sampling Technique

The study was a cross-sectional study, and its eligibility criteria were based on the true experience and encounter of the crop farmers with COVID-19 Pandemic. The multistage sampling techniques was used in selecting respondents for the study. The first stage involved the purposive selection of three states from South-East Nigeria where cases of Covid-19 pandemic have been recorded, reported widely and areas with high number of victims of Covid-19, whose farming activities were drastically affected. Here, Abia, Enugu and Imo State was selected because according to (WHO, 2020), they faced more hit of Covid-19 than Anambra and Ebonyi. In the second stage, two Local Governments Areas mostly affected by Covid-19 according to regional report of Nigerian center for disease control were purposively selected from each state, giving a total of six Local Government Areas. In Abia, (Umuahia-north and Ikwuano) were chosen. In Enugu, (Aninri and Awgu Local Government Area) were chosen while in Imo, (Mbaitoli and Oweri West) were selected as well, and this was based on a reconnaissance survey that was conducted to explore areas where farming is predominantly practiced. In the third stage three autonomous communities were selected from each local government areas in the state using random sampling techniques to give a total of 18 autonomous communities (Ndoro, Umuariaga, Nnono, Ndume, Nbaocha, Azueke, Mgbowo, Mmaku, Agwu, Nnewe, Ndeagbor, Oduma, Ogwa, Umunoha, Ogbaku, Umuguma, Emeabiam and Oforola) were selected. In the fourth stage three villages were selected from each of the 18 autonomous communities using simple random sampling techniques to give a total of 54 villages. In the fifth stage, from the records of the ADP and with the help community leaders, seven crop farmers were randomly selected from each of the villages selected which gave a sample size of three hundred

and seventy eight (378) farmers, and was used as the respondent for the study. The sampling frame included lists of communities / villages where farming activities were drastically affected due to Covid-19 pandemic. The sampling frame also included the list of crop farmers actively involved in crop production and this was supplied by the extension service unit in Agricultural Development Program in the headquarters, zones and block/circles in the states involved in the study.

Data Analysis

The objectives one socioeconomic characteristics of crop farmers were analyzed using descriptive statistical tools such as percentages, frequency distribution tables and mean, and objective two, examine the perceived effects of Covid-19 pandemic on the farmers farm activities in the study area was measured using 4-likert type scale of Strongly agree (4), agree (3), disagree (2) and strongly disagree (1) with a mean cut-off point (discriminatory index) of 2.50, that is, 4 + 3 + 2 +1= 10/4 = 2.5 cut off point and analyzed using mean scores and standard deviation.

Results and discussion

3.1 Socioeconomic Characteristics of Crop Farmers

Table 1 shows the frequency distribution of farmers according to age and sex. The table suggest that 31.7% of the crop farmers were between the ages of 23-38, 23.5% were between the ages of 55-70 and 1.4% were 71 years and above. Also, the majority 43.4% were within the age of 39-54 years. This mean age of the crop farmers in South-East, Nigeria was 45.6 years. The distribution implies that the farmers were relatively young and still in their active age, and as such expected to show greater zeal and enthusiasm in crop farming practices as this could be an asset for innovativeness and also could predisposes them to visiting their farms regularly (Chikaire, *et al*., 2015). This also implies that the age might be appropriate for strenuous farm activities like weeding, planting and heaping and in meeting labour demands during Covid-19 pandemic as younger farmers have the physique to endure stress and strain associated with farming activities (Chikaire, *et al*., 2015). The table also shows that majority (52.7%) of the crop farmers were male, while the remaining 47.3% were female. This could entail that the male gender are more involved in crop farming than the female in South-East, Nigeria. Again the participation of 47.3% of female reveals that women cannot be ignored in agricultural production in the area as they contribute significantly to food production. The dominance of male is consistent with the findings of Alawode *et al*., (2018), who noted that male dominates crop farming in Nigeria.

Table 1: Socioeconomic Characteristics of Crop Farmers

Socio-economic charactersitics	Frequency	Percentage	Mean
Age			
23 – 38	120	31.7	
39 – 54	164	43.4	45.6 years
55 – 70	89	23.5	
71 – 86	5	1.4	
Sex			
Male	199	52.7	
Female	179	47.3	
Total	**378**	**100**	

Source: Field survey data, 2023.

Table 2 shows the frequency distribution of crop farmers according to Household size and Farming experience. The mean household size of the crop farmers was 7 persons. This clearly reveal that crop farmers in the study maintained large household sizes. The large household size could also be reflective of the farm labour demands and increased chances of receiving farm-related information faster. This is in line with the finding of Amos (2017) who noted that large household is desirable in traditional agriculture as it determines the amount of labour that could be made available for use on the farm during the pandemic period. Large household size could also serve as cheap source of labour and assist farmers to manage their farms effectively considering Covid-19 restriction measures instituted by

government to curb the spread of the pandemic, which limited movement, availability and accessibility of laborers in carrying farming operation. Amos (2017) further noted that the greater the household size the faster and more efficient the work is done; thus, resulting in greater output. The average years of farming experience of the crop farmers was 15 years. This was enormous and priceless for farm decision making. It is therefore pertinent to state that the crop farmers had garnered extensive knowledge and skill needed to excel in crop farming and contend with possible farm stress during Covid-19 pandemic which could enable them to relate encounters they had: Covid-19 associated stress, effect, resolutions and coping strategies utilized.

Table 2: Socioeconomic Characteristics of Crop Farmers

Household size			
3 – 6	193	51.1	
7 – 10	155	41.0	6.8
11 – 14	26	6.9	
15 – 18	4	1.0	
Total	**378**	**100**	
Farming Experience (years)			
2 – 12	174	46.0	15
13 – 23	152	40.2	
24 – 34	47	12.4	
35 – 45	5	1.4	

Source: Field survey data, 2023.

3.2 Perceived effects of Covid-19 pandemic on the farmers farm activities in the study area

Table 3.2 below shows the distribution of crop farmers based on perceived effect of Covid-19 pandemic on the farmers' activities in the study area. The result indicates the perception of crop farmers on the substantial of Covid-19 on crop farmers' farm activities. The consequences of Covid-19 touched various facets of crop farmers' farm activity. Using a discriminating index of 2.5 on a likert type rating scale of agreement, a total of 10 effect indicators were identified by crop farmers as perceived effects of Covid-19 to their farm activities. Farmers agreed that there was fear of being infected working with other farmers ($\bar{X}$=3.9). There was frustration particularly in collaborating with other farmers ($\bar{X}$=3.9); worried about harvest and sales of farm produce ($\bar{X}$=3.7); faced difficulties in transportation of farm produce ($\bar{X}$= 3.6); farmers experienced increase in post-harvest losses ($\bar{X}$=3.5); loss and reduction in farm capital ($\bar{X}$=3.4); time consuming farming while alone ($\bar{X}$= 3.3); had difficulty accessing planting materials during Covid-19 pandemic ($\bar{X}$= 3.2) and could not access technical support ($\bar{X}$= 3.0).

Generally, crop farmers noted that they were afraid of being infected working with other farmers. The media reports of death and infections were frightening. According to Mertens *et al*., (2020), Covid-19 pandemic and the control measures instituted by governments resulted in fear as farmers' lived in fear and panic of getting infected, dying, or losing a close friend or family member. Dubey *et al*., (2020) noted that fear of contracting Covid-19 was the highest stressor faced by farmers which created difficulties in executing routine farm exercise, leading farmers to worry about the future. He further noted that the fear and panic created by the pandemic led to frustration of farmers in relating with other farmers as well as frustration in seed procurement which limited crop farmers' ability in carrying out farming activities effectively as collaborative efforts with other farmers that boosted productivity was abruptly hindered. Difficulties in transporting farm produce was also one of the considered consequences and effect of Covid-19 pandemic. Transportation is crucial to all aspects of production, processing, and marketing of agricultural product and therefore, whatever affects it would have impact on the general outcome of the production process (Chikaire *et al*., 2015). The disruptions in transportation services, as well as new demands for transportation services, impacted greatly on farmers' agricultural supply chains. The result of the research is also in agreement with the finding of Singh (2020) who noted that transportation was a major sector affected by the pandemic, he noted that in certain areas, roads were blocked and movement of labour, inputs, farm equipment as well as transportation of farm produce from farmers' fields were not allowed. The lack of laborers due to movement restrictions and closure of processing plants could likely be considered to affect harvesting activities, potentially leading to high levels of post-harvest losses, and reduced marketing opportunities of produce. According to FAO (2020), post-harvest losses recorded by small-scale

producers increased significantly during the Covid-19 pandemic, which were likely to substantially reduce farmers' storage capacity and ability in meeting farm needs as well as in conservation of fruits, vegetables, milk and meat products, etc. Farming alone was one of the major consequences of Covid-19 pandemic, with the lock down put in place and other measures implemented by the government, it became difficult accessing farm hands and labourers which exposed farmers to farming alone in their farms. This implies that crop farmers were subjected to inevitable stress, challenges and losses which resulted to low productivity during the Covid-19 pandemic. The sudden post-harvest losses experienced by farmers could foster their loss and reduction in farm capital, this tends to reduce crop farmers' active farm involvement, their savings and ability in farm seed procurement.

This findings of this research align with the report of (UNSCN, 2020), that food production and supply chain in Nigeria suffered a serious crack during this period, causing economic contraction and socio-economic indisposition of both farmers and non-farmers and consequently weakened crop farmers financial ability to meet farm needs, which elevated hunger exponentially in the society.

The items on perceived effect recorded SD scores that ranged from 1.1 to 2.3. The farmers varied widely in their perceived effect of Covid-19. Their response were not homogenous. This could be attributed to varied experience, possibly influenced by individual socio-economic characteristics.

Conclusion

Covid-19 had a negative effect on the reviewed subsectors of the crop farmers in managing their farms from production to marketing. There was fear among farmers of being infected working with other farmers. It is also concluded that Covid-19 farmers felt frustrated in relating with other farmers. It also resulted in worries about harvest and sales of farm produce as a result difficulties associated with transportation of farm produce leading to Increase in post-harvest losses. The result also revealed that the crop farmers in the study area perceived Covid-19 to having an adverse effect on their farm activities given the mean score value which was above the discriminating cut off of 2.5. there is a considerable concern about the survival and building resilience of the subsector. The study calls for pragmatic and proactive action to empower the farmers to take control of the post effect of the pandemic and keep the industry going.

Recommendation

Based on the findings of the study, it was therefore, recommended that;

1. Robust and effective policy formulations and implementations in building resilience against emergencies among crop farmers in the South-East Nigeria.
2. Revitalization and rejuvenation of the agricultural storage and processing facilities in Nigeria by deployment of modern storage facilities and improved plants to replace crude implements which induces fatigues.
3. Supply of agricultural incentives, such as improved seedlings, soft agricultural loans and improved transportation system should be made available by the government etc. These incentives would no doubt motivate crop farmers to full scale-up-agricultural production.
4. Empowering crop farmers through provision of soft loans to cushion the effect and challenges faced by farmers during the Covid-19 pandemic, this will enhance the financial capacity of farmers to meet domestic and farming requirements.

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