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Perceived Effects of Covid-19 Pandemic among Small-Scale Rice Farmers in Anambra State, Nigeria

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Abstract

The study assessed the perceived effects of covid-19 pandemic among small-scale rice farmers in Anambra State, Nigeria. It described the perceived effects of covid-19 pandemic among rice farmers, ascertained the mitigation strategies of covid-19, and identified the challenges to the effects of covid-19 pandemic among small-scale rice farmers in the study area. Multistage and random sampling techniques were employed to select 120 rice farmers for the study. The data were collected from primary sources using structured interview and questionnaire and analyzed using frequency, percentage, mean, mean score and factor analysis. The result of the perceived effects of covid-19 pandemic indicated that majority of the rice farmers agreed that covid-19 affected them on various rice farming activities. The result further revealed that all the respondents agreed to the mitigation strategies available to covid-19 pandemic in the area. The result of the factor analysis showed that institutional factors, economic factor and managerial factor were the three major factors that hindered the factors challenging the effects of covid-19 pandemic in the study area. The study suggested that government should provide adequate, correct and reliable information on Covid-19 to enable the rice farmers understand and trust the government on the deadly virus. Farmers should be

sensitized to clearly understand that covid-19 is for every body and has no restriction, hence the virus is for all and sundry.

INTRODUCTION

Corona virus disease 2019 (covid-19) is seen as illness caused by a novel corona virus now called acute respiratory syndrome corona virus 2 (SARS-COV-2) which was first identified amid an acute outbreak of respiratory illness cases in Wuhan City Hubei Province, China (Centre for Disease Control, CDC, 2019). Ramzy (2020) revealed that on March 11, 2020, the World Health Organization declared covid-19 a global pandemic. He further noted that global impact of covid-19 pandemic extended rapidly, severely disrupted supply chains, created significant vitality in global financial markets, as well as changing the communication and business landscape. Governments across the globe were tasked with minimizing the impact of the pandemic, as well as protecting human lives, livelihoods and ensuring sufficient food availability along the entire food supply chain (Sasakwa African Association, (SAA) 2020).

The first confirmed case of covid-19 in Nigeria was announced on 27 February 2020, when an Italian Citizen in Lagos tested positive to the virus (Nigeria Centre for Disease Control (NCDC), 2020). Specifically, across Sub-Saharan Africa (SSA) as at 17th August 2020, the five countries that reported cases of covid-19 include, South Africa (589,345), Egypt (96,475), Nigeria (49,068), Ghana (42,653), and Algerian (38,583) (Africa Centre for Disease Control (ACDC), 2020). In a bid to reduce the spread of the disease and protect citizens, many countries in Africa implemented, retrieve measures, including lockdowns, travels, closure of training institutions in order to prevent the spread of the disease (SAA, 2020).

Nigeria is the largest producer of rice in Africa. Also, rice which is the second largest most consumed cereal after wheat, shapes the lives of millions of household globally (Akande and Yusufu, 2020). More than half of the world population depends on rice for its food calories requirements (Food and Agriculture Organization, FAO, 2020).

In Nigeria, rice has become a staple food such that every household both the rich and the poor, consumes a great quantity as observed by (National Bureau of

Statistics, NBS, 2018). The covid-19 pandemic had precipitated rice crises by disrupting rice value chain systems in Nigeria, thereby posing a great threat to actors' livelihoods as well national food and nutritional security (Obayori, et al, 2020). The Nigerian government initiated an early and coordinated responses to minimize the impacts by developing strategies to facilitate free movement of rice seedlings and agricultural inputs from lockdowns (Akingbe and Eyibiowu, 2020).

The effects of covid-19 pandemic were much on agriculture, especially on rice production in Anambra State, Nigeria. This is because the majority of the inhabitants depends on rice production for their livelihood. Rice is highly susceptible to seasonal shock, greenhouse gases and climate vagaries because of its sensitivity to changing climate conditions (Esiobu, 2020). To overcome these challenges, rice production should be increased, particularly now there is new treat on farmers, hence the study was designed to investigate the perceived effects of covid-19 pandemic among small-scale rice farmers in Anambra State, Nigeria. Specifically, the objectives were to:

i. identify the perceived effects of covid-19 pandemic among small-scale rice farmers,
ii. ascertain the mitigation strategies of covid-19 among small-scale rice farmers, and
iii. identify the challenges to the effects of covid-19 pandemic among small-scale rice farmers in the study area.

METHODOLOGY

The study was carried out in Anambra State, Nigeria. All the small-scale rice farmers in the state constituted the population for the study. The State is one of the five Eastern States of Nigeria with a population of 11,500,000 people (Anambra State Government, ANSG, 2022). The State is made up of four agricultural zones, 21 extension blocks and 177 circles. The major crops grown in the area includes, yam, rice, cassava, maize, melon, vegetables, plantains, okro and banana. A list of all the registered rice farmers was obtained from Anambra State Agricultural Development Programme (ASADEP, 2022).

Multistage, involving purposive and simple random sampling procedure were employed to select rice farmers for the study. At stage one, two Agricultural zones

namely Anambra and Awka zones were selected because, the areas were highly suitable for rice production and the people were known for rice production activities. Stage two, involved the selection of three extension blocks from Anambra Zone and one extension block from Awka Zone given a total of four extension blocks which includes Anambra East, Anambra West, Ayamelum and Awka South Local Government Areas (LGAs). In stage three, three circles were randomly selected from each of the four extension blocks, making a total of 12 extension circles. Finally, in stage four, 10 rice farmers each were selected from the 12 circles, thus given a sample size of 120 respondents/rice farmers for the study.

Data for the study were collected from primary sources. The data were collected using well-structured questionnaire based on the objectives. To ascertain the rice farmers' perceived effects on covid-19 pandemic, the respondents were asked to indicate their perceived effects of covid-19 from a list of possible effects, using four point likert-type scale of strongly agree – 4; agree = 3; disagree 2 and strongly disagree = 1. A discriminating index was arrived by dividing the sum of the value of the rating by the number of scales, thus 4+3+2+1, divided by four = 10/4 = 2.5. This implies that any mean core equal to or greater than 2.5 depicts a favourable attitude while any mean score less than 2.5 means unfavourable to the perceived effects of covid-19 on rice farmers.

To identify the mitigation strategies of covid-19 pandemic among rice farmers in the study area, a list of possible mitigation variables was compiled and the respondents were asked to indicate their possible mitigation strategies on three point likert-type scale of very serious = 3; serious = 2 and not serious = 1. the weighted values were added and divided by three to get a mean cut off point of 2.0. This implies that all variables with a mean score of 2.0 and above were regarded as major mitigation strategies while variables with mean score less than 2.0 were not serious mitigation strategies to the perceived effects on covid-19 pandemic on rice farmers.

To obtain a quantitative measure on the rice farmers' responses on the constraints militating against the effects of covid-19 pandemic, factor analysis was employed. The rule of thumb as developed by Kessler (2006) in Uchemba et al (2021) was adopted. Factor loading of 0.30 and above was adopted in analyzing the data

collected. A varimax rotated factor matrix was employed to identify the most important factors to the effects of covid-19 pandemic in the study area. Thus, using the decision rule, a variable with co-efficient of 0.30 and above is considered as having a high loading and was used in naming the major factors. This implies that variables with co-efficient greater than 0.30 are considered strong constraining factors while those co-efficient less than 0.30 have low loading and therefore, not constraining factors to the effects of covid-19 pandemic in the area. The data collected were analysed using statistical tools such as frequency, mean, mean score and factor analysis.

RESULTS AND DISCUSSION

The results of the perceived effects of covid-19 pandemic among small-scale rice farmers is as shown in table 1: The result indicate that covid-19 led to global food insecurity (X=4.0). This was followed by increase in cost of farm inputs (X=3.9); restriction in accessing their farm lands (X = 3.8); disruption of various farming activities (X =3.6), shortage of labour in rice production (X =3.5), affected rice production and yield negatively (X =3.3), covid-19 negatively affected rice value chain activities (X =3.1), limited the extension visits to farmers (X =2.8), and contributed to abrupt fall in price of rice in the market (X =2.6). This implies that majority of the respondents agreed that they faced growing level of hardship and food insecurity as well as reversing developmental gains as a result of covid-19 pandemic. This result is in consonance with the assertion of World Bank (2021) who observed that covid-19 led to severe widespread increase in global food insecurity, inadequate farm inputs, limitations in accessing farm lands, as well as affected vulnerable households in almost every country of the world. Esiobu (2020) succinctly opined that covid-19 pandemic led to the partial restriction of all agricultural institutions in the country, including rice farming activities. Siche (2020) posited that the dreaded scenario in the world affected agricultural sector by creating labour shortage, limitation of extension services and training and late harvesting of farm produce which consequently resulted in increased hunger and malnutrition.

Table 1: Distribution of the respondents according to perceived effects of covid-19 pandemic

Variable	Mean score	Remark
Covid-19 pandemic led to global food insecurity, increase in cost of farm inputs	4.0	Strongly agree
Limitation in accessing their farm lands	3.8	Agree
Disruption of various farming activities	3.6	agree
Shortage of labour in rice production	3.5	agree
Affected rice production and yield	3.3	agree
Negatively affected rice value chain activities	3.1	agree
Limited the number of extension visits	2.8	agree
Contributed to abrupt fall in price of rice in the market	2.6	agree
Unavailability of rice in local market	2.3	disagree
Covid-19 did not increase hunger and malnutrition	1.9	disagree

Source: Field survey, 2022

Mitigation strategies on covid-19 pandemic among rice farmers

The result of the mitigation strategies to covid-19 pandemic among rice farmers is presented in table 2. The results revealed that the major mitigation strategies as observed by the respondents include, provision of emergence support to prevent covid-19 by government (X =3.0). Provision of support to food distribution, inputs supply and irrigation facilities by donor agencies (X=2.9), establishment of more local markets to avoid overcrowding (X =2.7). This implies that the rice farmers were away of the dangers in contacting covid-19 disease and its inefficiency in curing. The international fund for Agricultural Development (IFAD, 2020), observed that provision of support to covid-19, input supply and irrigation facilities and establishment of more local markets to avoid overcrowding would prevent the spread of covid-19 pandemic in the world. In support to the findings, the World Bank "re-aligned its portfolio to support food distribution in short term and enhanced food production in medium term (World Bank, 2021).

The result in table 2, further shows that other variables the respondents agreed as mitigation strategies to corona virus were provision of sanitary kits and face (X=2.6) provision of extension services and market linkages with (X=2.5), installation of hand washing facilities with soap (X=2.3), rural markets operated with modest restriction (X=2.2) and spacing of sale pitches (X=2.1). Wiggins et al (2020) stated that the policy intervention to mitigate negative effects of covid-19 pandemic in Nigeria include; "rural markets operated with modest restriction and precautions, by installing hand washing facilities with soaps, distribution of masks to traders and the need for people to travel and run markets over more days."

Table 2: Distribution of respondents according to mitigation strategies among small-scale rice farmers

Variable	Mean score	Decision
Prevention of emergency support to prevent covid-19 by government	3.0	Very serious
Provision of support to food distribution, input supply and irrigation facilities by donor agencies	2.9	Serious
Establishment of more local markets to avoid overcrowding	2.7	Serious
Provision of sanitary kits and face masks	2.6	Serious
Provision of extension services and market linkages	2.5	Serious
Installation of hand washing facilities	2.3	Serious
Spacing out sale pitches	2.2	Serious
Rural markets operated with modest restriction	2.1	Serious

Source: Field survey, 2022

Challenges to the Effects of Covid-19 Pandemic among Rice Farmers

The results of the challenges against covid-19 pandemic in the study area is shown in table 3. The rotated matrix indicated that three principal factors were extracted, based on the responses of the rice farmers on covid-19 pandemic. Based on the item loading of the factor analysis, three major factors were isolated and named as

factor I (institutional factor), factor 2 (economic factor), and factor 3 (managerial factor). These three factors represented the major challenges hindering the mitigating effects of covid-19 in the study area.

Specifically, the variable items that loaded high under factor 1 (institutional) include, inadequate information on covid-19 (0.781), misinformation that crops and animals are carriers of covid-19 (0.759) and poor extension services (0.537). This result is in agreement with Esiobu (2020) that inadequate information on clarity, actionable guidance and precautionary measures by World Health Organization (WHO), Centre for Disease control (CDC) and other local health authorities left the farmers unable to get the much needed information on covid-19 pandemic and sustainable rice production. This posed serious farming challenges to the farmers' coping strategies as they may not be aware of recent development regarding the deadly virus. Nigeria Centre for Disease Control (NCDC, 2020) stated that crops farmers had been seriously hit due to misinformation particularly on social media that crops and animals are the main carriers of covid-19.

The items that loaded high under factor 2 (economic factor) include, inadequate fund (0.681) and mitigation options are costly due to restriction closure of some factories (0.642) and high cost of labour (0.625). This gave credence to International Crop Research Institute (ICRI) 2020 that inadequate fund left most rice farmers unable to get necessary productive resources in mitigating the effects of covid-19 pandemic. They further stated that the disease (corona virus) mitigation options were costly because of the restrictions and closure of some factories.

Also, the variables that loaded high under factor 3 (managerial factor) were; lack of trust by rice farmers on government (0.692), inadequate palliatives to rice farmers (0.593) and covid-19 is for politicians and wealthy individuals (0.532). This is in line with the observation of Organization of Economic Cooperation and Development (OECD, 2020) that trust, they say is the foundation upon which the legitimacy of public institutions is built and is crucial for maintaining social cohesion. They further stated that most farmers do not trust the government and this led to the farmers, believing that covid-19 is not real but for an avenue for government to embezzle public funds. Akingbe and Ayibiowu (2020) opined that rice farmers did not have the much needed palliatives to cushion the effects of covid-19 on their livelihood. Amino and Mathy (2020) revealed that covid-19 is

for everybody, both the poor and rich and not only for politicians and wealthy individuals.

Table 3: Distribution of respondents according to challenges of the effect of covid-19 pandemic

S/n	Variable	Factor 1 (Institutional)	Factor 2 (Institutional)	Factor 3 (Institutional)
	Inadequate information on covid-19	0.781		
	Misinformation that crops and animals are carriers of covid-19	0.759		
	Poor extension services	0.537		
	Inadequate fund		0.681	
	Mitigation options are costly due to restrictions and closure of some factories		0.642	
	High cost of labour		0.525	
	Lack of trust by rice farmers on government			0.692
	Inadequate palliatives			0.593
	Covid-19 is for politicians and wealthy individuals			0.532

Source: Field survey, 2022

Conclusion/Recommendation

Rice farming promotes economic stability and enhances income generation of the farmers. However, the study observed that covid-19 pandemic affected seriously all aspects of rice production activities as well as their livelihood potentials. The paper suggested that government should provide adequate, correct and reliable information on covid-19 pandemic to enable the rice farmers understand and trust the government on the deadly virus. Government should without delay, ensure easy

access to funding by rice farmers, in order to maximize their productive potentials and improve their efficiency in rice production. Finally, farmers should be sensitized to clearly understand that covid-19 is for everybody and has no restriction, hence the virus is for all and sundry.

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