

Original research paper

# Knowledge, Attitude and Perception of Smallholder Farmers on Corona Virus Pandemic in Nigeria

Obot Akaninyene, Ozor Maurice, Nwankwo Temple and Obiekwe Ngozi

Department of Agricultural Economics and Extension, Nnamdi Azikiwe University, Nigeria

## Article history

Received: 01-04-2022

Revised: 09-04-2022

Accepted: 02-06-2022

## Corresponding Author:

Obot Akaninyene

Department of Agricultural Economics and Extension, Nnamdi Azikiwe University, Nigeria

Email: ap.obot@unizik.edu.ng

**Abstract:** Agriculture plays an essential role in the economy of Nigeria as it provides food for the entire population of a country and also provides raw materials for the non-agriculture sectors of the economy. Nigeria's agriculture is made up of a higher percentage of smallholder farmers who are often exposed to shocks and have less capacity to combat the impact and increase the rate of recovery due to shocks. Therefore, the strengths and weaknesses of farmers' knowledge systems are important in building a resilient agricultural sector to improve farmers' food security, and livelihoods and build resilient capacity toward pandemics. The COVID-19 pandemic was a big threat to Nigeria's food security since the bulk of the food produced in Nigeria is by the smallholder farmers who are often vulnerable to shocks. The paper examined smallholder farmers' knowledge, attitude, and perception of the COVID-19 pandemic using descriptive statistics. A total of 400 smallholder farmers in the study area were interviewed about their knowledge and perception of the COVID-19 pandemic. The finding showed that 332 of the respondents were aware of the virus, 340 did not believe in the existence of the virus, 365 believed they cannot be infected by the virus, and 271 adhered to government-imposed measures on combating the virus. On the methods employed to mitigate the spread of the virus in the study area, 180% of the respondents observed the social distancing, 78% used hand sanitizer, 48% wore nose masks and 40% reduced farm visits.

**Keywords:** Knowledge, Perception, Attitude, COVID-19 Pandemic, Smallholder Farmers

## Introduction

Agriculture is the major activity/occupation of many Nigerians mostly the population living in the rural area. Agricultural activities have been seriously affected by the outbreak of the COVID-19 pandemic in 2019. A sudden shock like the COVID-19 led to disruptions on both the demand side due to loss of income from workers, reduction in tourism and restaurant activity, as well as the supply side due to production-related issues such as disruptions to input supply, labor availability, and food losses and food wastage due to lack of storage facilities and a slow shift in transportation (Le Nestour *et al.* 2020). The COVID-19 pandemic saw a drop in the prices of agricultural produce by 20% globally (Andam *et al.* 2020). Nigeria was not left out of the drastic drop in the prices of agricultural produce which was estimated to be at

around 13.1% which was estimated to be around USD 1.2 billion (Nicola *et al.*, 2020). According to Boughton *et al.* (2020); Cattivelli and Rusciano (2020); Darnhofer (2020); Diesner (2020); Gunther (2020); Henry (2020), the consequences of the COVID-19 on agriculture globally require immediate and long-term actions but first, it is important to analyze and understand the immediate consequences of the pandemic on agriculture and the food systems to develop the needed actions to curb the impact on food security.

According to Nigeria Centre for disease control, (NCDC, 2020), the COVID-19 case was first reported on 27<sup>th</sup> February 2020 in Nigeria. To curb the spread of the virus across the nation, the government put in place measures like the use of face masks, washing of hands with hand sanitizer containing at least 60% alcohol, social distance, restriction on movement, closure of social gatherings, etc.

Nigeria's agriculture is made of a higher percentage of smallholder farmers who are often exposed to shocks and have less capacity to decrease the impact of shocks and the rate of recovery as a result of the sudden shocks (WHO, 2019). Smallholder farmers are characterized by limited access to resources, information, technology, capital, etc., according to Odoemenem and Obinne (2010). Therefore, the knowledge of the farmers needs to be evaluated to strengthen the capabilities of the smallholder farmers to curb shocks like the outbreak pandemic or diseases. Farmers with better access to information in an emergency have a better tendency to adopt adaptive measures and avert the consequence of such unexpected events Solomon and Edet (2018).

There is limited information on how smallholder farmers' knowledge and perception of the pandemic hence, understanding the small farm household knowledge and perception of the pandemic and providing a support mechanism that can harness to build future resilience against such shock is crucial. The results will contribute to understanding the critical needs of the smallholder farm households and control the negative consequences of the pandemic on their quality of life. The outcomes will also complement the existing knowledge to guide policy discussions on food security, and coping measures and inform decision-making on preserving the livelihoods of households that are most vulnerable to the pandemic.

The general objective was to analyze the smallholder farmer's knowledge and perception of the COVID-19 pandemic.

The specific objectives were:

- i. Examine the socio-economic characteristic of the smallholder farmers
- ii. Analyze the smallholder farmer's knowledge, perception and attitude to COVID-19 pandemic
- iii. Analyze the mitigation measures employed by the smallholder farmers

## Material and Methods

### Study Area

The study area is the Federal Republic of Nigeria which has a population of 166.6 million people (UNDESA, 2011) with a total area of 923,800 sq km and occupies about 14% of the land area in the West Africa. Nigeria lies between 4°N and 14°N and between 3°E and 15°E. The study locations and households were selected from four States in Nigeria (Akwa Ibom, Anambra, Enugu, and Delta State). The States represented different geographical regions (South-South: Akwa Ibom and Delta, South-East: Anambra and Enugu).

A purposive and simple random sampling procedure was used in the selection of the four States and the respondents for the study. The first stage was the selection of four States out of the thirty-six states and the FCT that

makes up Nigeria which was done purposively. The second stage of sampling was the random selection of one hundred (100) farming households from each of these states to give a total of 400 respondents for the study.

Descriptive statistics (means, frequency distribution, percentages) were used to analyze the data collected.

### Data Collection and Analysis

This survey was a cross-sectional study conducted using a structured questionnaire. The questions focused on the period before the COVID-19 outbreak and during the pandemic. The questionnaires were administered by trained field officers who visited each of the participants in their respective households. All the field officers were familiar with the farmers, local languages, communities, and practices of the farming households. Each field officer was assigned to a village. Data were subjected to inferential statistics.

## Results and Discussion

This chapter summarizes the result finding from the fieldwork. Interpretation of the result will help to draw the logical conclusion for the study objectives.

Table 1 shows the socio-economic characteristics of the respondents.

Sex: Majority (73.0%) of the smallholder farmers were male while the remaining 27.07% were female. The implication is that men were more engaged in small-scale farming than females.

Age: Table 1 above shows that the majority (82.25%) of the smallholder farmers were between the age bracket of 26-50 years, while the remaining 13.75 and 4.0% were within the age bracket of 51-75 years and 1-25 years respectively. The mean age was found to be 40.44 years. Thus, this implies that the people engaged were actually in their youthful age.

Marital status: Majority (90.25%) of the smallholder farmers were married, while the remaining 5.25, 3.25 and 1.25% were single, separated/divorced, and widow/er respectively.

Level of education: The finding shows that the majority (52.5%) of the smallholder farmers attended secondary school, while the remaining 37.5, 6.75, and 3.25% attended primary, had no formal education, and tertiary institution and primary school respectively. The implication is that the smallholder farmers were literate and thus, comprehending what was taught will not pose many challenges. Likewise, its implementations.

Farming experience: The researcher found out that the majority (92.25%) of the smallholder farmers have been into farming for the past 1-10 years, while the remaining 6.75, 0.5 and 0.5% have been into farming for the past 11-20 years, 21-30 years and 31-40 years respectively. The mean farming experience was found to be 6.43 years. This implies that the farmers were experienced in agricultural activities.

**Household size:** Majority (71.0%) of the smallholder farmers in the study area have a household size of between 4-6 persons, while the remaining 17.0 and 12.0% have a household size between the bracket of 1-3 persons and 7-9 persons. The mean household size was found to be 4.85 persons. A large family size supplies family labor for the farm activities while the money that would have been paid for hired labor is saved.

**Primary Occupation:** The majority of the smallholder farmers (91.3%) were into agriculture as their primary occupation while 8.7% were into agriculture as their secondary occupation.

**Farm size:** Majority (56.0%) of the smallholder farmers have a farm size of 1-2 hectares, while the remaining 34.0 and 10.0% have a farm size of 3-4 hectares

and 5-6 hectares respectively. The mean farm size was found to be 2.58 hectares. Having a large farm size is an indication that the commercialization of agriculture could be possible in the area.

**Monthly income:** Information generated on the income of the smallholder farmers showed that majority (81.25%) were within the income bracket of N1.00-~~N~~50,000, while the remaining 12.75, 3.0, 1.75 and 1.25% were within the income bracket of N50,001-N100,000, N100,001-N150,000, N150,001-N200,000 and N200,001-N250,000 respectively. The mean income before the training was found to be N1,562.51 only.

**Membership of cooperative:** The result shows that 76.0% of smallholder farmers were not members of a cooperative while 24.0% joined one cooperative or the other.

**Table 1:** Distribution of the youth's socioeconomic characteristics for the study

Sn	Variable	Frequency (n = 400)	Percentage (100%)	Mean ( $\bar{x}$ )
1	Sex			
	Male	292	73.00	
	Female	108	27.00	
2	Age (years)			
	1-25	16	4.00	40.44
	26-50	329	82.25	
51-75	55	13.75		
3	Marital status			
	Single	21	5.25	
	Married	361	90.25	
	Widow (er)	5	1.25	
4	Separated/divorced	13	3.25	
	Level of education			
	No formal education	27	6.75	
	Primary	150	37.50	
5	Secondary	210	52.50	
	Tertiary	13	3.25	
	Farming experience (Years)			
	1-10	369	92.25	6.43
11-20	27	6.75		
21-30	2	0.50		
31-40	2	0.50		
6	Household size (No)			
	1-3	68	17.00	4.85
	4-6	284	71.00	
7-9	48	12.00		
7	Primary occupation			
	Farming	365	91.30	
	Farming with other businesses	35	8.70	
8	Farm size (Ha)			
	1-2	224	56.00	2.58
	3-4	136	34.00	
5-6	40	10.00		
9	Monthly income (N)			
	1-50,000	325	81.25	1,562.51
	50,001-100,000	51	12.75	
	100,001-150,000	12	3.00	
	150,001-200,000	7	1.75	
200,001-250,000	5	1.25		
10	Membership of cooperative			
	member	96	24.00	
	Non member	304	76.00	

Field survey, 2022

Table 2 shows the knowledge, perception and attitude of the respondents to COVID-19.

Knowledge of the virus: Majority (83.0%) of the smallholder farmers were aware of the COVID-19 pandemic while the remaining 17.07% were not aware of the virus. The implication is that majority know of the existence of the virus.

Origin of the virus: Table 2 above shows that the majority (75.5%) of the smallholder farmers knew the origin of the virus (Wuhan China), while the remaining 14.5, 7.0, and 3.0% believed that the virus originated from Nigeria, USA, and Italy.

Where did you first hear about the virus: Majority (75.25%) of the smallholder farmers heard about the existence of the virus from relatives/friends, while the remaining 17.75, 4.0, and 3.0% heard about the virus from extension workers, cooperative and social media respectively.

Do you believe the virus exists: The finding shows that the majority (85.0%) of the smallholder farmers do not believe in the existence of the virus, while the remaining 15.0% believed in the existence of the virus.

How can one contact the virus: The researcher found out that the majority (75.75%) of the smallholder farmers did not have an idea of ways of contracting the virus, while the remaining 13.25 and 11.0% had the knowledge that the virus can be contacted by air and coming in contact with the infected person.

What do you think of the virus in Africa: Majority (43.5%) of the smallholder farmers in the study area believe the virus is a way of public officers looting funds in Africa, while the remaining 29.0, 15.25, 9.75, and 2.5% believed the virus is a scam, meant to destroy Africa's economy, to cause further hardship in Africa and as a bio-weapon.

Will those infected die: The majority of the smallholder farmers (89.25%) believed that the virus is not deadly while 10.75% believed the virus is deadly.

Do you think you can be infected: Majority (91.3%) believed they cannot be infected while the remaining 8.7% believed they can be infected.

**Table 2:** Knowledge, perception and attitude

Sn	Variable	Frequency (n = 400)	Percentage (100%)
1	Knowledge of the virus		
	Aware	332	83.00
	Unaware	68	17.00
2	Origin of the virus		
	Italy	12	3.00
	Wuhan China	302	75.50
	Nigeria	58	14.50
	USA	28	7.00
3	Where did you first hear about it		
	Extension workers	71	17.75
	Relatives/friends	301	75.25
	Cooperative	108	4.00
4	Social media	266	3.00
	Do not believe the virus exist		
	Yes	60	15.00
	No	340	85.00
5	How can one contact the virus		
	Airborne	53	13.25
	Physical contact with infected person	44	11.00
	No idea	303	75.75
6	What do you think about the virus in Africa		
	To loot funds	174	43.50
	To destroy Africa	61	15.25
	To cause hardship	39	9.75
	It is a bio weapon	10	2.50
7	It is a scam	116	29.00
	Will those infected of the virus die		
	Yes	43	10.75
8	No	357	89.25
	Do you think you can be infected		
9	Yes	35	8.70
	No	365	91.30
9	Do you employ any of the measures to prevent contacting the virus		
	Yes	271	67.75
	No	129	32.25

Field survey, 2022

**Table 3:** Strategy to mitigate the spread of coronavirus

Sn	Variable	Frequency (n = 400)	Percentage (100%)
1	Stay at home completely to avoid the spread of the virus	10	2.50
2	Reduce visits to the farm	40	10.00
3	Ignore the lockdown order to enable that there's no bridge in food supply	9	2.25
4	Wearing of nose mask	48	12.00
5	Wearing of hand gloves	14	3.50
6	Use of hand sanitizer	79	19.75
7	Washing of clothes after returning from their normal farming activities	11	2.75
8	Ensure social distancing	180	45.00
9	Use hired labor during the period of the pandemic	9	2.25

Field survey, 2022

Do you adhere to government measures to prevent the spread of the virus: Information generated on the income of the smallholder farmers showed that the majority (67.75%) were adherence to the government's directive to reduce the spread of the virus while the remaining 32.25% were not adherence to government's directive.

Table 3 shows the strategy the respondents employed in tackling the COVID-19 pandemic.

From the table below, the majority of the farmers (45.0%) reduced farm visits as a way of mitigating the spread of the virus while the remaining 19.5, 12.0, 10.0, 3.5, 2.75, 2.5, and 2.25% practice the use of hand sanitizer, wearing of a nose mask, social distancing, wearing of hand gloves, washing of clothes after farm return, staying at home completely, ignore the lockdown order and the use of hired labor during the pandemic period.

## Conclusion

The COVID-19 pandemic negatively affected the agricultural sector of Nigeria and the smallholder farmers who are the bulk producers of the country's food basket were not excepted. Most of the smallholder farmers in Nigeria despite having formal education did not believe in the existence of the virus but adhered to government-imposed measures to mitigate the spread because it was compulsory for all. The imposed measures by the government affected their farm operation and productivity because the resilience capacity of the smallholder farmers to the crisis was not developed. Even during the palliative distribution period in Nigeria for farmers, most of the palliatives were hoarded or diverted by the political class and did not get to the smallholder farmers. This might be one of the reasons why most smallholder farmers did not believe in the existence of the virus. Government and non-governmental organizations still need to do more to build the capacity of the smallholder farmers to prepare them for future pandemics which Nigeria if Nigeria wants to achieve the food security target of 2030.

## Acknowledgment

We acknowledge the contribution of American Journal of Economics and Business Administration for their contribution towards the publication of this manuscript.

## Author's Contributions

All authors equally contributed in this study.

## Ethics

All the sources were acknowledged and well cited in the reference section.

## Reference

- Andam, K. S., Edeh, H., Oboh, V., Pauw, K., & Thurlow, J. (2020). Estimating the economic costs of COVID-19 in Nigeria (Vol. 63). Intl Food Policy Res Inst.
- Boughton, D., Goeb, J., Lambrecht, I., Mather, D., & Headey, D. D. (2020). Strengthening smallholder agriculture is essential to defend food and nutrition security and rural livelihoods in Myanmar against the COVID-19 threat: Elements for a proactive response. The International Food Policy Research Institute, 2, 1–11. doi.org/10.2499/p15738coll2.133687
- Cattivelli, V., & Rusciano, V. (2020). Social Innovation and Food Provisioning during COVID- 19: The Case of Urban-Rural Initiatives in the Province of. Sustainability, 12(11), 4444. doi.org/10.3390/su12114444
- Darnhofer, I. (2020). Farm resilience in the face of the unexpected: Lessons from the COVID-19 pandemic. Agriculture and Human Values, 37(3), 605-606. https://link.springer.com/article/10.1007/s10460-020-10053-5
- Diesner, D. (2020). Self-governance food system before and during the Covid-crisis on the example of CampiAperti, Bologna, Italy. Interface: A Journal for and About Social Movements, 12, 266-273. https://www.interfacejournal.net/wp-content/uploads/2020/07/Interface-12-1-Diesner.pdf

- Gunther, A. (2020). COVID-19: Fight or flight. *Agriculture and Human Values*, 37(3), 591-592. <https://link.springer.com/article/10.1007/s10460-020-10101-0>
- Henry, R. (2020). Innovations in agriculture and food supply in response to the COVID-19 pandemic. *Molecular Plant*, 13(8), 1095–1097. [doi.org/10.1016/j.molp.2020.07.011](https://doi.org/10.1016/j.molp.2020.07.011)
- Le Nestour, A., Mbaye, S., Sandefur, J. & Moscoviz, L. (2020). "Report\_FR.pdf", COVID-19 phone survey Senegal. Harvard Dataverse, V3. [doi.org/10.7910/DVN/9XE95F/NDD6UB](https://doi.org/10.7910/DVN/9XE95F/NDD6UB)
- NCDC. (2020). First Case of Corona Virus Disease Confirmed in Nigeria. NCDC, Abuja, Nigeria. (Nigeria Centre for Disease Control). <https://ncdc.gov.ng/news/227/first-case-of-corona-virus-disease-confirmed-innigeria>.
- Nicola, M., Alsafi, Z., Sohrabi, C., Kerwan, A., Al-Jabir, A., Iosifidis, C., Agha, M., & Agha, R. (2020). The socio-economic implications of the coronavirus pandemic (COVID-19): A review. *International Journal of Surgery*, 78, 185–193. [doi.org/10.1016/j.ijssu.2020.04.018](https://doi.org/10.1016/j.ijssu.2020.04.018)
- Odoemenem, I. U., & Obinne, C. P. O. (2010). Assessing the factors influencing the utilization of improved cereal crop production technologies by small-scale farmers in Nigeria. *Indian Journal of Science and Technology*, 3(1), 180-183. <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.673.5990&rep=rep1&type=pdf>
- Solomon, E., & Edet, O. G. (2018). Determinants of climate change adaptation strategies among farm households in Delta State, Nigeria. *Current Investigations in Agriculture and Current Research*, 5(3). 13-22.
- UNDESA. (2011). *World Population Prospects: The 2010 Revision*. United Nations Department of Economic and Social Affairs, Population Division, New York. (United Nations Department of Economic and Social Affairs).
- WHO. (2019). *The state of food security and nutrition in the world 2019: Safeguarding against economic slowdowns and downturns* (Vol. 2019). Food and Agriculture Org. ISBN-10: 9251315701.