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FACTORS THAT INFLUENCED THE PERCEIVED EFFECT OF COVID-19 LOCKDOWN ON FOOD PRODUCTION IN AKWA IBOM STATE, NIGERIA

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ABSTRACT

The study sought to understand the factors that influenced the perceived effect of the COVID-19 lockdown on food production among rural farmers in Akwa Ibom State. Specifically, the study examined the perceived effect of Covid 19 lockdown on food production, identified the sources of farm-related information among the rural farmers during the lockdown, and identified the factors that affected the perceived effect of COVID-19 lockdown on food production among rural farmers in Akwa Ibom State. A multi-stage sampling procedure was used to select 180 respondents for the study. Data used for the study were obtained through a well-designed questionnaire. The data collected were analyzed using descriptive and inferential statistics such as percentages, mean, and simple linear regression models. The majority of the respondents agreed that the Covid-19 lockdown reduced farmers' income (4.76) reduced workers' availability (4.67), the restriction of movement due to the pandemic was responsible for the disruption of transportation of farm inputs (4.62), food unavailability (4.61) food unaffordability (4.56) and reduced accessibility to food (4.47). The most used sources of information among the respondents during the lockdown were extension agents (3.62), radio (3.46), mobile phones (3.16), neighbour to neighbour (3.13), and crop farmers association (3.07). We also found that lack of funds (0.99), lack of fertilizer and agro-chemicals (0.97), high cost of inputs (0.96), lack of planting materials, and high cost of hired labour (0.94), poor market linkages (0.93) and poor storage facilities (0.90) were the factors influencing the perceived effect of the Covid-19 pandemic on food production among the respondents. This study found a positive and significant influence ($R = 0.666$; $F_{(1,178)} = 141.826$; $P < 0.05$) of these factors on the variance in the perceived effect of COVID-19 lockdown on food production. This implied that as these factors increased, the perceived effect of covid-19 lockdown on food production also increased. Farmers should be encouraged and supported to engage in multiple economic activities to forestall this state of vulnerability should a pandemic break out in the future and improve their income level, as well as boost their food production status based on affordability.

Keywords: *Covid 19, Food production, Lockdown, Perception, Factors*

INTRODUCTION

As a newly discovered pandemic, Coronavirus (COVID-19) poses a grave threat to public health and development around the world (Mishra and Rampal 2020). Although the pandemic is hitting human health directly, it has indirectly led to a catastrophic challenge to food security through disruptions in health and nutrition services, food supply chains, and livelihoods (Leddy, Weiser, and Palar, 2020; Hirvonen, Abate, and Brauw, 2020). Additionally, low-income households are disrupted by the lockdown in several ways including unemployment and low wages, movement restrictions, and household stress (Mishra and Rampal 2020; Shuvo, Hossain, Riazuddin, Mazumdar, & Roy, 2022).

According to the United Nations World Food Programme (UNWFP), more than 820 million people in lower and middle-income countries go to sleep hungry whereas 135 million people had already experienced acute food insecurity even earlier than the COVID-19 pandemic (UN, 2021). According to International Monetary Fund (IMF, 2020), the COVID-19 lockdown is reported to have a crippling effect on the global economy. It is tagged a global phenomenal threat, ranging from ill health, 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 (Devereux et al., 2020; Laborde et al., 2020; Vanapalli et al., 2020; Waltenburg et al., 2020).

Consequently, Nigeria had its share of the adverse impacts of the COVID-19 lockdown (Ogunji et al., 2021; Uche et al., 2021). This is because the country was neither prepared nor armed to absorb the initial shock orchestrated by the lockdown (Mbachu et al., 2020; Uche et al., 2021). Akwa Ibom State of Nigeria was thrown into learning by doing ad-hoc measures to contain the viral spread and as a result of the Nigerian government's enforcement of several COVID-19 measures such as lockdown, stay-at-home, social distancing, quarantine, banning large–private and public gathering, and crowded transportations (Ekoh et al., 2021; Ogunji et al., 2021; Uche et al., 2021).

Food supply and agricultural production which are the hub of the Akwa Ibom people suffered the most as food crop farmers were sent off their farms as a result of the sudden lockdown imposed by the government and this singular act worsened economic activities; more especially, food production in the region (Egwue et al., 2020; Adebowale et al., 2021, Akpan et al, 2022). As the lockdown continued, food and other livestock goods were equally restricted from entering the State from other neighboring states due to border closure (Agbugba, 2020; Uche et al., 2021). This development further heightened food insecurity in the state causing severe pain and creating a huge food supply-demand gap (Ohiaa et al., 2020; Obayelu et al., 2021; Uche et al., 2021). The issue of lockdown without an alternative source of food supply and provisions constituted major economic problems and food security challenges in the State (Akpan et al, 2022).

Although the lockdown was meant to contain the spread of the coronavirus disease in the short run, its long-run effects exacerbated the food security situation in the State making the region vulnerable to chronic starvation, malnutrition, food inadequacy, food shortage, low food supply, and persistent poverty (Adebowale et al., 2021; Uchechukwu et al., 2022). Until now, the state has yet to come out from the negative impacts and shocks of the COVID-19 lockdown. However, food

security is the ability to meet target consumption levels on a year-to-year basis. It is said to exist when every household has sufficient access to food to meet their dietary needs for a productive and healthy life (Headey and Martin, 2016; FAO, 2018; Oleribe et al., 2020; United Nations, 2020a; Worstell, 2020) but such is not the case in Southeast Nigeria as the COVID-19 lockdown introduced intense food scarcity, excruciating hunger, pain, and food deficit. With rising population growth in the state, food crop production is yet to keep pace with meeting domestic food demands (Ogunji et al., 2021).

The unprecedented Covid-19 pandemic, and the associated social and economic response-related factors like movement restrictions, income losses, poor income, lack of access to adequate food, and increasing prices have led to proliferating food insecurity and its related health disparities among the risk-prone populations (Ahmed, et al, 2021). Some other factors that have been found to indirectly influence food security are occupation, monthly household income, education, family size, and others (Huluka and Wondimagegnhu 2019).

Several studies have evaluated the impact of the COVID-19 lockdown (or quarantine) on food insecurity in different countries (Udmale et al, 2021; Kundu et al 2022; Zhao et al, 2020; Swinnen et al, 2020; Arndt et al 2020;). Some systematic studies reported that the COVID-19 pandemic inversely affected food access, supply, demands, and decreased purchasing power increasing the prevalence of household food insecurity (Udmale, et al 2021; Zhao, et al 2020; Swinnen, et al 2020). However, the factors that affected the severity of the perceived effect of the COVID-19 lockdown on food production among rural farmers in Akwa Ibom State are yet to be unfolded. Furthermore, there is an absence of empirical evidence on the sources of farm-related information farmers used during the lockdown. It becomes expedient from the above concerns to seek to understand the factors that influenced the perceived effect of the COVID-19 lockdown on food production among rural farmers in Akwa Ibom State.

Specifically, the study examined the perceived effect that Covid 19 lockdown had on food production, identified the sources of farm-related information among the rural farmers during the lockdown, and identified the factors that influenced the perceived effect of COVID-19 lockdown on food production among rural farmers in Akwa Ibom State.

METHODOLOGY

The research was carried out in Akwa Ibom State. Primary data was used for the study. The data were collected using a structured questionnaire along with an in-depth interview. The study made use of a multi-stage sampling technique in selecting respondents. In the first stage, 3 Agricultural zones were randomly selected out of 6 that make up the state. In the second stage, 3 extension blocks were selected from each of the selected zones making a total of 9 extension blocks. The third stage involved random selection of 3 cells from each of the selected blocks making a total of 18 cells or farming communities. In the last stage, 10 farmers were randomly selected from each of the cells giving a total of 180 farmers that were used for the study. A 5-point Likert-type scale of strongly agree (scored 5), agree (scored 4), undecided (scored 3), disagree (scored 2), and strongly disagree (scored 1) was employed to assess the perception of respondents on the effect of covid-19 on food security of farming households in the area. A 4-point inventory scale of Always (scored 4) to Never (scored 1) was used to identify the information sources of the respondents on

COVID-19. Also, a 4-point Likert-type scale was used to identify factors influencing the severity of the effect of covid-19 pandemic on food security. The scale was categorised as follows; very serious (score 4), serious (scored 3), moderately serious (scored 2), and not serious (scored 1). Data collected for the study were analyzed using both descriptive and inferential statistics.

RESULTS AND DISCUSSION

Perception of the Respondents on the Effects Covid 19 Lockdown had on Food Production

The perception of respondents regarding the effect the COVID-19 lockdown had on food security in the study area is presented in Table 1 below. As observed in the Table, the respondents were quite perceptive of the effect of the COVID-19 lockdown on food security in the study area. The majority of the respondents (77.2%) reported that the Covid-19 lockdown reduced farmers' income in the study area. This attracted a mean response of 4.76. The majority (73.3 %) agreed that the lockdown reduced workers' availability with a mean response of 4.67, and that restriction of movement due to the pandemic was responsible for the disruption of transportation of farm inputs (4.62). It was also reported that the lockdown resulted in food unavailability in the households (4.61) and that food affordability was severe (4.56). This study also found rural farmers reporting that there was reduced accessibility to food and reduced marketability of farm produce. This also implies that the respondents were unable to obtain a reasonable price for their agricultural produce followed by their inability to sell their agricultural produce. Abdul (2020) and Mhlanga and Ndhlovu (2020), had previously reported that COVID-19 is associated with significant disruption in the food supply chain, notably between rural and urban areas. Movement or import/export limitations accompanying COVID-19 have made it difficult to carry essential food supplies and gain access to markets and processing facilities, which will invariably impact both farmers and consumers. As a result, farmers' incomes will decrease, and food prices become unstable and deviate from geographic and seasonal trends, hence, posing uncertainty for both producers and consumers. Ali *et al.,* (2020) and Mahmud and Riley (2021) also reported that the COVID-19 pandemic decreased food production and reduced access of consumers to food as a result of constraints to the distribution of farm inputs, travel restrictions, and reduced purchasing power. The effects extend to other areas of the food supply chain, including transportation, storage, and distribution.

Table 1: Perception of the Effect of COVID-19 Lockdown by respondents

s/n	Statements	SA	A	U	D	SD	Mean	MR
1	Covid-19 lockdown reduces farmers' income	77.2	22.2	0	0	0.6	4.76	1st
2	The lockdown reduced workers' availability	73.3	23.3	1.1	1.1	1.1	4.67	2nd
3	Restriction of movement due to the pandemic was responsible for the disruption of transportation of farm inputs	66.1	30.6	2.6	0	0.6	4.62	3rd
4	The lockdown resulted in food unavailability in the households	68.3	27.8	2.2	0	1.7	4.61	4th
5	Food affordability was severe during the lockdown	63.9	31.7	2.8	0	1.7	4.56	5th
6	COVID-19 lockdown disrupts farm input supply chain	52.2	46.1	1.1	0	0.6	4.49	6th
7	The pandemic brought about a decline in food accessibility within the household	56.7	38.3	2.2	1.1	1.7	4.47	7th
8	The lockdown reduces the marketability of farm produce	46.1	36.1	14.4	1.1	1.7	4.23	8th
9	The lockdown negatively affected farmers' health	31.1	51.7	15.6	1.1	0.6	4.12	9th

Source: field survey, 2022 Note: Values represent the percentages. MR = Mean Ranking
Key: SA = Strongly Agree, A=Agree; U=Undecided; D=Disagree; SD= strongly Disagree

Analysis of the Sources of Farming Information during Covid 19 Lockdown

The rationale for this analysis was to examine if the respondents were able to get information on COVID-19 from various sources during the lockdown. Results from Figure 1 and Table 2 report the responses of the respondents as regards COVID-19 information sourcing in the study area. According to the table, the first five most used sources of information among the respondents during the lockdown were extension agents (3.62), radio (3.46), mobile phones (3.16), neighbour to neighbour (3.13), and crop farmers association (3.07). Farmers are already used to extension agents as their teachers and solution providers and have had their contacts, so it is not surprising that they made efforts to secure information from the agents during the lockdown. According to Esiobu, (2020), agricultural extension agents can offer great support to farmers during uncertainty and sudden changes that come with the pandemic, and strategies to bounce back from shocks and enhance resilience. Radio, phones, neighbours, and fellow farmers are also easier sources that are affordable and reachable to these rural and peasant farmers. Radio is one of the powerful communication tools and has proved to be the most effective media in promoting agriculture and development in rural areas, particularly as a tool for the delivery of quick information, (Esiobu, 2020). This finding is strengthened by the findings of George and Stylianou (2018); Esiobu, (2020), and Ekanem (2022) who found that radio leads in overall media consumption followed by the mobile phone with the wake of many vernacular radios which can effectively communicate to the targeted groups. Posters, magazines, and local government officials were not popular sources of farming-related information during the lockdown in the study area.

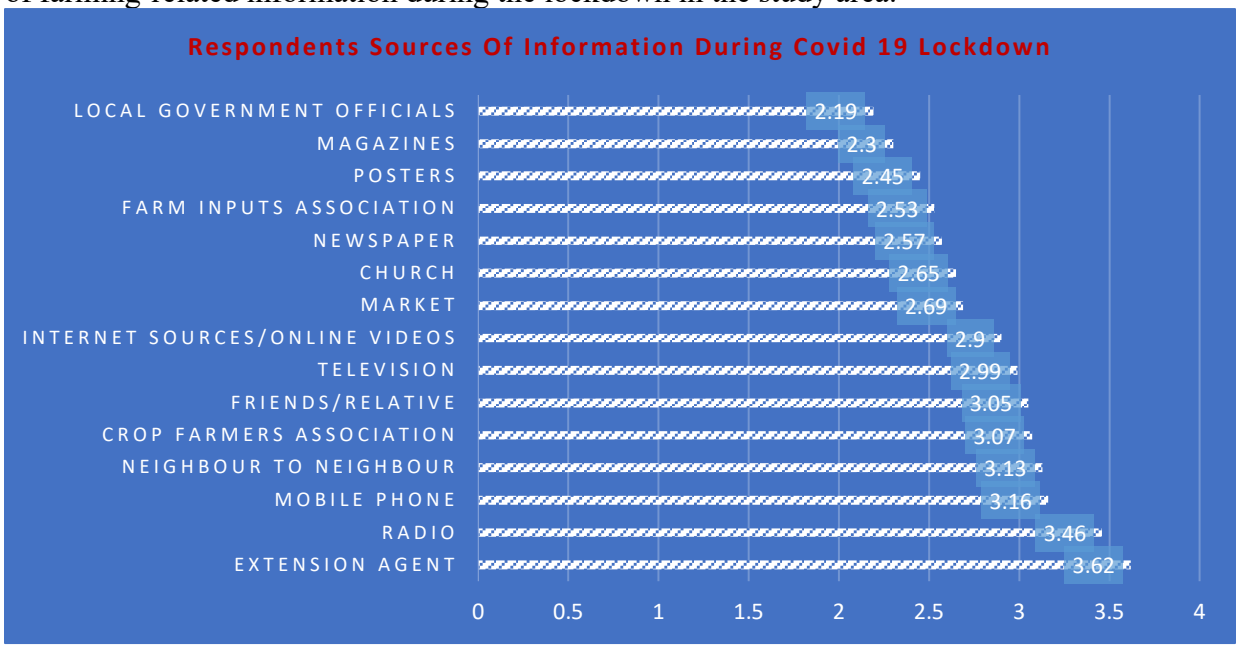


Figure 1: Distribution of the Respondents based on Sources of Information during Covid 19 Lockdown (Mean Response)

Analysis of the Factors that Influenced the Perceived Effect of the Covid-19 Pandemic on Food Production

With regard to the factors that influenced the perceived effect of the COVID-19 lockdown on food production in the study area, approximately 99.4% of the respondents complained of a lack of funds. That resulted in a severity incidence of 0.994. This severity stems from the fact that lack of funds left most of the farmers unable to get necessary productive resources to mitigate the effect of the COVID-19 lockdown in the area. This could be attributed to the sudden rise of productive resources due to lockdown and food shortage. Inadequate funding hinders farmers from getting the necessary resources and technologies that would assist to mitigate efficiently the effect of the COVID-19 pandemic. The COVID-19 pandemic mitigation options are costly because of restrictions and input factory closure hence, farmers needed adequate funds to adapt.

Going forward, lack of fertilizer and agro-chemicals (0.97), high cost of inputs (0.96), lack of planting materials and high cost of hired labour (0.94 respectively), poor market linkages (0.93) and poor storage facilities (0.90) were complained by the farmers as factors influencing the perceived effect of the Covid-19 pandemic on food security. The high cost of fertilizer and agro-chemicals and other farm inputs could also be attributed to inadequate funds. With limited funds, the acquisition of necessary production equipment will be difficult. They may not only be costly but may also appear scarce for poor farmers, particularly during the period of the lockdown. Besides, some farmers may also not have the necessary facilities for information like radio and television to obtain COVID-19 reports. This finding corroborates those of George and Stylianou (2018) and Esiobu, (2020). The least severe factors faced by the respondents were the incidence of pests and disease and inadequate farmland.

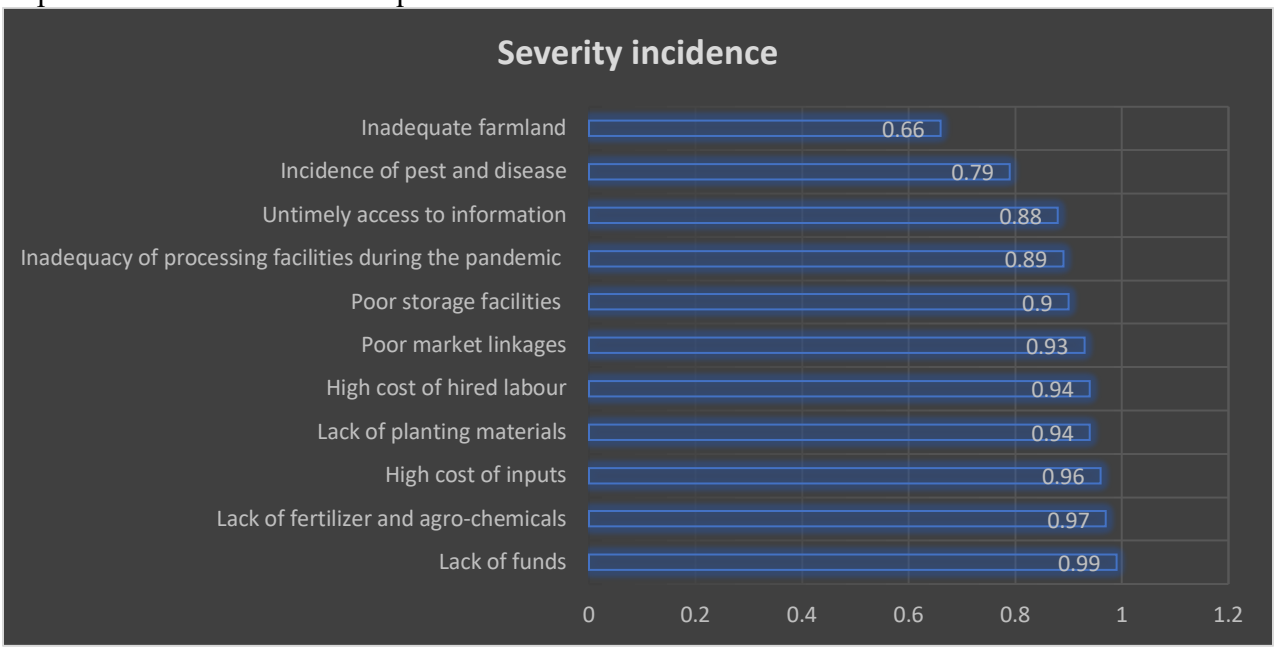


Figure 2: Distribution of the Respondents based on Factors Influencing the Severity of the Effect of the Covid-19 Lockdown on Food Security (Percentage proportion).

Magnitude and Direction of Influence of Factors on the Perceived Effect of the Covid-19 Lockdown on Food Security

The result of simple linear regression that was conducted to determine the magnitude and direction of influence of factors on the severity of the effect of the COVID-19 lockdown on food production is presented in Table 2. The mean score of factors was 38.18 with a standard deviation of 4.71 while the mean score for perceived severity of the effect of covid-19 lockdown on food security was 40.52 with a standard deviation of = 3.92.

Table 2 shows that factors have a positive and significant influence on the variance in the perceived severity of the effect of covid-19 lockdown on food security, R = 0.666. The table also indicated that 44.3% ($R^2 = 0.443$) variance in the perceived severity of the effect of covid-19 lockdown on food security was accounted for by the factors. The factors influencing on perceived severity of the effect of covid-19 lockdown on food production were also found to be significant $F_{(1,178)} = 141.826$; $P < 0.05$.

A review of the beta weight in the regression coefficient table specifies that factors, $\beta = 0.666$, $t_{(178)} = 11.909$, and $P = 0.000$ significantly contributed to the model. This indicates that the identified factors are strong predictors of perceived severity of the effect of covid-19 lockdown on food production in the study area. Implying that a unit increase in lack of funds, lack of fertilizer and agro-chemicals, high cost of inputs, lack of planting materials and high cost of hired labour, poor market linkages and poor storage facilities, etc, led to an increase in the perceived severity of the effect of covid-19 lockdown on food production by 0.666 units.

Table 2: Simple Regression Summaries Showing the Magnitude and Direction of Influence of Factors on the Severity of the Effect of the Covid-19 Lockdown on Food Production

R= 0.666,	**$R^2 = 0.443$,**	**Adj. R^2= 0.440**	**Std Error =**	**2.937**	
Model	**Sum of Squares**	**Df**	**Mean square**	**f-value**	**Sig**
Regression	1223.408	1	1223.408	141.826	.000*
Residual	1535.453	178	8.626		
Total	2758.861	179			

Source: Computed from Field survey, 2022. ***Significant at P<0.05**

Regression Coefficient of Magnitude and Direction of Influence of Factors on the Severity of the Effect of the Covid-19 Lockdown

	Unstandardized Coefficient		**Standardized Coefficient**			
Model	**B**	**Standard Error**	**Beta**	**t-value**	**Sig**	**Remark**
(Constant)	19.359	1.791		10.809	.000	*
Factors	0.554	0.047	0.666	11.909	.000	*

Source: Computed from Field survey, 2022. ***Significant at P<0.05**

CONCLUSION AND RECOMMENDATIONS

The study sought to understand the factors that affected the perceived effect of the COVID-19 lockdown on food production among rural farmers in Akwa Ibom State. Our key findings show that the Covid-19 lockdown reduced farmers' income in the study area. The lockdown reduced workers' availability, and the restricted movement due to the pandemic was responsible for the disruption of transportation of farm inputs and also resulted in food unavailability, food unaffordability, and reduced accessibility to food. The most used sources of information among the respondents during the lockdown were extension agents, radio, mobile phone, neighbour neighbour, and crop farmers association. Posters, magazines, and local government officials were not popular sources of farming-related information during the lockdown in the study area. We also found that lack of funds, lack of fertilizer and agro-chemicals, high cost of inputs, lack of planting materials and high cost of hired labour, poor market linkages, and poor storage facilities were the factors influencing the perceived effect of the Covid-19 pandemic on food security among the respondents. This study found a positive and significant influence of these factors on the variance in the perceived effect of covid-19 lockdown on food production. This implies that as these factors increased, the perceived effect of covid-19 lockdown on food production also increased.

Based on the findings, farmers should be encouraged to engage in other economic activities amidst the pandemic to improve their income level as well as boost their food security status based on affordability; The Government should subsidize prices and if possible provide agricultural inputs and other production resources to assist farmers improve food production amidst pandemic and immediately after pandemics to ease off its effect on food security. Agricultural extension agents can offer support during uncertainty and sudden changes that come with the pandemic, and strategies to bounce back from shocks and enhance resilience. Therefore, capacity strengthening, the right tools, and channels are necessary to provide tailored effective agricultural extension agents messages. The government should strengthen agricultural extension agents' service delivery.

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