

Original Article

The Effect of Insecurity on Food Security in Nigeria-An Empirical Investigation (1989-2018)

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Abstract

The study examined the effect of insecurity on food security in Nigeria. Other specific objectives are; to identify the nature of relationship between insecurity and food security and then to determine the impact of insecurity on food production. The study adopted annual time-series for the period of 30 years (1989-2018) where the data was sourced from Statistical Bulletin of the Federal Ministry of Finance and Statistical Bulletin of the Central Bank of Nigeria (CBN), then Food Production Index of Nigeria. The study implied that, there is no evidence of cointegrating or long run relationship between the insecurity and the food security in Nigeria which implied that, insecurities pass through variables to impact food security. Thestudy recommends on the reinforcement of the nation's securities to enable the country to achieve food security through massive food production. Also those there should be check and balance in the budget allocation earmarked to security sectors (defense and internal security) to tackle corruptions. Also culprits bringing the threats should be punished accordingly.

Keywords: Effect; Insecurity; Food security.

1. Introduction

Until recently, security threats in agricultural sector of Nigeria's economy was centred largely in North-Central States of Kogi and Benue, then, the insecurity pressures were low when compared to the prevailing insecurities in the North-Western States of Katsina, Kaduna and Zamfara. "Security" is the activities involved in protecting a country, building or person against attack, danger etc. (Oxford Advanced Learner's Dictionary of Current English, 2010). Lack of these activities is termed as "Insecurity". Banditry, kidnapping, aged-long farmers/herdsmen clashes as well as Boko Haram insurgency scare away farmers from farming job of food production to attain food security and do away with food insecurity that bedevils Nigeria's economy, since sustainability and stability in economic development of any nation is attained with food security, at least a nation should have the agricultural capability of feeding its teeming population. Food Security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life. (The Sate of Food Insecurity, 2001) As such, there should be protection of agricultural sector of the economy against bad antecedents of food insecurity, and this can only be possible if insecurities of banditry, kidnapping, aged-long farmers/herdsmen clashes as well as Boko Haram insurgency are tackled to a minimal level, although crisis/ clash is something which is prevalent in any activity, but allowing it to an escalating level is a great challenge which if not both proactively and reactively addressed the core sector of the economy will be in Food Crisis. The 2016 Economic Recession witnessed in Nigeria's economy was highly assisted by insecurity nature in food production, because talk-less of food to eat, even toothpaste used to be imported from abroad, what a backwardness was that? A nation that cannot produce toothpaste for its population, in which way can assurance be given in terms of abundant food production. In that period (2016 Economic Recession), the teeming population regarded it as an Era of Hunger rather than Food Insecurity, hence it can be said there is hunger in the economy when people do not have food accessibility, availability as well as utilization, but in that period, people had all the aforementioned factors, hence -Food Insecurity and not hunger as define above.

Contemporarily, the major security threats being bedeviled with are banditry and kidnapping in the North-Western States of Katsina, Kaduna and Zamfara. In Zamfara, ten onion farmers were shot dead in Kurasa village of Kware district in Shinkafi Local Government area while working on onion plantation in March, 2019 (Daily Trust, 2019), although, the area has been suffering from series of deadly attacks of bandits, between February and March, at least 62 people were killed in two major attacks on the district. The recent attack of banditry was in May, 2019, where 18 people were killed by armed bandits in 'Yar Gamji village of Batsari Local Government area of Katsina state on their farmlands (Daily Trust, 2019). For the kidnappings, there have been reports of rampant cases of kidnapped individuals, the prominent ones were the abduction of Kano cleric Ahmad Sulaiman along sheme-Kankara highway in Katsina state with a ransom of N300m and that of five persons kidnapped along with him The Guardian (2019), and President Buhari's in-law, who is the Magajin Garin Daura was also abducted in May in the ancient city of Daura by four gun men (Daily Trust, 2019).

The menace of insecurity will have a serious impact on food security; hence those affected by the killings are largely agrarian rural dwellers, Nigeria's dream to attain food security will be unreliable. As decrease in food production will definitely be recorded, and this will in turn lead to food insecurity, as farmers are scared of farming for them not to be killed or kidnapped, as such they stay at home redundantly, unemployment will also be affected which yields another set of social vices.

Increase in insecurity threats of banditry, kidnapping, aged-long farmers/herdsmen clashing as well as Boko Haram insurgency in the food production areas of the nation's economy to the extent that, farming becomes difficult if not impossible if the areas are unsecured, which in turn will lead to food insecurity is what the study seeks to investigate.

The study seeks to examine the effect of insecurity on food security in Nigeria. Other specific objectives are; to identify the type of relationship between insecurity and food security and then to determine the impact of insecurity on food production.

In a bid to achieve the set objectives of the study, the paper study has been divided into five divisions, section one focuses on the introduction which incorporates key terms in relation to the insecurity and food security, section two lays emphasis on the review of literatures. Research methodology is under section three of the study. Data presentation, analysis, and discussion of the findings relating to the paper study are to be treated under section four of the investigation. And then lastly, section five of the paper concludes the study with discussion, conclusion and recommendations.

2. Literature Review

The FAO categorizes food security into four pillars: food availability, access, stability, and utilization (FAO, 2017). Each pillar captures a different aspect of food security. The pillars can generally be understood thus:

- Availability: This pillar focuses on availability of necessary calories at the individual level, as well as the types of calories available nationally (e.g. cereals versus animal protein).
- Access: This pillar contains variables that measure physical infrastructure for bringing food to market, as well as individual level indicators of whether people have access to the necessary number of calories per day.
- Stability: The variables in this pillar measure dependence on food imports, domestic price variability, and variation in land equipped with irrigation.
- Utilization: This pillar captures data on primarily anthropometric indicators of whether people are able to use available calories; relevant data includes measures on wasting, stunting, and low weight among children.

2.1. Causes of Insecurity in Nigeria and the Way Out

As Nigerians, we feel very insecure in our own country. Terrorism, inflation, corruption, injustice, recession-all these words can be heard coming from our TV screens! It causes panic in the hearts of citizens, and how did it get this bad? What can we do? We can take a look at 10 causes of insecurity in Nigeria.

2.2. Unemployment

There is no gain saying that the bulk of unemployed Nigerians are the teeming youth who are capable of causing panic/havoc because of their exuberance and the volatile nature of the socio-political nature of our diversity. National Bureau of Statistics (NBC) indicated that unemployment has risen to 14% and by extension; it means that Nigeria does not get about 19% of its GDP.

2.3. Corruption

Nigeria according to the transparency International is the most corrupt Country in the world. It is believed that corruption is manifested in all sphere of our life, in-fact it is said to be institutionalized: be it in politics, civil service mentioned it. It is like a Canker-worm eating deep into our fabrics which has for some time now deterred potential investors in the Country. Once, Vanguard Newspaper publicized an article where it tried to explain the corruption in Nigeria. According to this article, there is no real politician that wants to "kill" corruption.

2.4. Imbalance

Due to the diverse nature of the Country, different parts have different rate of acceleration in terms of development. Furthermore, the 13% derivation to oil rich states; had enhanced revenue to those states and thus tend to amazed more resources than others. On the other-hand, the rate of development was not commensurable with the resources accrue to that states and thus the youth of those areas point an accusing finger to the Federal Government and engaged in oil pipeline vandalisation as a way of vendetta.

2.5. Weak Judicial System

The weak judicial system causes insecurity in Nigeria. People feel insecure when criminals and terrorists can go free. A lot of evil-minded people feel that money can buy freedom in Nigeria. The corrupt system proves this line of thought. Rich people can buy their freedom in Nigeria. Poor people do not feel secure because of that! In some instances, people have taken the law into their hand, if allowed unabated; it leads to conflicts which could be further aggravated by the idle minds abound.

2.6. "Open" Borders of Nigeria

Nigeria has porous borders and that insurgents from other countries can and do infiltrate our borders with ease. This situation is especially dangerous in the North East, North West, and some part of the South West respectively. Arms smugglers made use of our porous land borders, but the bulk of arms smuggled into the Country come from the coastal areas where the rate of corruption from the government's officials is very high and aided by the weak judicial system in place.

The Federal Government of Nigeria can't provide enough troops to secure the borders.

Porous coastal borders are the main cause of terrorism in Nigeria. The Federal Government should increase the number of troops that guard borders. It's also possible to train people to protect their regions from insurgents.

2.7. High Influx of Arms

Smugglers use porous coastal borders of Nigeria to sell arms! The Corruption system and weak judicial system only helps smugglers to sell even more guns. They provide pistols, shotguns, rifles, assault rifles, grenades, and explosives! These guns are used against the people and military forces. Although the coastal areas hold the highest probability of such activities, the fall of Muarmar Gaddafi regime in the Magrib brought about influx of arms into the region through the Trans-Sahara trade routes and finally landed in Nigeria at the hands of the insurgents and their related allies.

The Federal Government of Nigeria understands this situation and tries to find solution. Still it is a complex problem, which the government may need to seek help from residents of affected areas to patrol the borders together. The recent partial border closure by the Federal Government is part of the measure geared towards addressing the issue.

2.8. Narcotics

Nigerians are into narcotic trafficking to major Countries in the World. National Drug Law Enforcement Agency was doing it best to unravel the groups involved and address it squarely, but challenges are abound and more hands and elaborate effort have to be put in place. It is a well-known fact that drugs are a major factor in most of the problems facing the Country and many other conflicts are rooted or triggered through the use of drugs

2.9. Slavery in Nigeria

It is no more a secret that Nigerians are lured by fellow Nigerians into travelling abroad for greener pastures and just ended up in brothels as prostitutes for females and housemaids while the male found themselves doing the hard labour in farms or doing difficult and dangerous jobs. The breakage of the bondage last till the time the convener deem it fit that the bondage has paid his dues and that his passport and other travel documents return to him/her. This hardly happened, and by the time it did: an individual has lost his vigour and charm and is left with nothing. Attimes some of them in European countries get recued through police raids or narcotics agent raids. Some of these atrocities happened here under the noses of the security agents unabated and only discovered when it is always too late. The situation with human trafficking and forced labour in Nigeria is horrible.

2.10. Criminal situation in Nigeria

Of recent, Nigerians are confronted with barrage of problems ranging from armed robbery, oil pipeline vandalisation, kidnapping for ransom, cattle-rustling, banditry, Boko Haram, farmers-herders' clashes etc. People are not safe to carry on their normal activities for fear of been killed, maimed or kidnapped. Fear is written all over the places, and one or more of these do happen where ever you find yourself in the Country. In some part of the Country, day light robbery, kidnapping, mass killings are so rampant that people do not know their safe places as they are as vulnerable outside their houses as they are in the midst of loved ones. Nigerians abroad are not only involved in an organized crime; also partake in cyber-crime, money swindlers (popularly known as 419). The recent xenophobic attack on Nigerians in South Africa was targeted towards some of the negative activities of ours.

2.11. Terrorist Threat

Of recent, terrorism has a new home in Nigeria largely due to agitations of the Niger Deltants for resource control which is a socio-economic aspect and the socio-cultural (religion) in the form of "Boko Haram". Some aggrieved parties have sprung up in addition to the two above; and their hand work is seen everywhere, and day in, day out.

Virtually all the aforementioned causes of insecurity have both direct and indirect impacts to the food security of Nigeria's economy, terrorist threat, open borders of Nigeria, high influx of arms and unemployment are causes of insecurity which have direct impact on government's effort to attain food security, while corruption, weak judicial system and imbalance have indirect impact to the attainment of food security, in the end other causes of Narcotics, Criminal situation and slavery are causes of insecurities.

3. Empirical Literatures

Bosede and Agyeno (2015), conducted a study on Terrorism in Northern Nigeria: A Threat to Food Security in Maiduguri. Data analysis established likely threat to food security in Maiduguri and beyond due to activities of BH. The paper looked into the various ways in which the activities of BH have threatened food security in Maiduguri, Borno State in the North East of Nigeria. The study was field research through administered questionnaire,

interview, observation and induction. The research revealed that BH activities have affected the agricultural sector. Recommendation was that the International community should chip in to curb the menace as well as the Federal Government coming in directly to improve on the easiness of chain of food supply. It is expected that the state government and other stakeholders including non-governmental organizations should provide opportunity for the young unemployed youth to be engaged in meaningful work so as to prevent them from being instrument of violence. Governments should, as a short time-measure, demand and distribute food from the national reserve in order to reduce the hardship being experienced by the people.

Kah (2017), Researched on Boko Haram is losing, but so is Food Production: Conflict and Food Insecurity in Nigeria and Cameroon. Secondary data was adopted in the study. The study indicated that the current wave of kidnapping has compounded the already massive unemployment situation, aggravating the already faulty labour market situation, and creating un-enabling environment for economic development. The study recommends on how this wave of crime should be tackled and labour market expanded to accommodate these restive youths who are major the culprits in this crime i.e. the war should be won quickly to put to stop from the food insecurity situations so as the household or internally displaced person should get back to reclaim their farm lands and produce while the youth be engaged in an employable work which will accelerate the development process and retard the deteriorating situations emanated from the BH insurgency.

Tari *et al.* (2016), examined the effects of Boko Haram insurgency on food security status of some selected local government areas in Adamawa State, Nigeria. A combination of purposive and simple random sampling techniques was used for this study being a primary data collected with the aid of questionnaires administered to each of the locality of Mubi North Maiha, Gombi and Hong. Major findings were malnutrition especially among children in the study areas is still on the high level, number of food insured households is still alarming, agricultural sector tend to suffer more as a result of the insurgents activities in the study areas. The study recommends that; Government in partnership with non-Governmental organizations and private individuals should focused on addressing malnutrition and other related issues as well as deliberate attempt to usher in agricultural policies within that areas as a way of normalizing the tense situations.

4. Theoretical Framework

4.1. Economic Theory of Criminal Behaviour

The economic theory of criminal behavior is an application of the neo-classical theory of demand. Formalized by Nobel Laureate Gary Becker (1968), it states that potential criminals are economically rational and respond significantly to the deterring incentives by the criminal justice system. They compare the gain from committing a crime with the expected cost, including the risk of punishment, the possibility of social stigma, and others.

Gary S. Becker received the 1992 Nobel Prize in economics for "having extended the domain of economic theory to aspects of human behavior which had previously been dealt with-if at all-by other social science disciplines such as sociology, demography and criminology."

This theory serves a framework to our study as it speaks about how our people, particularly the youths engage themselves in threatening the security of the societies for an expected gain, as they risk their lives on the punishment, social stigma and others.

All those culprits who commit crimes of kidnapping, banditry, aged-long farmers/herdsmen clashing as well as insurgency are risking their lives for a gain usually wealth which they do not have tranquil mind to benefit from it, always busy in forest and other hide-outs, once they are noticed in a society they face punishment and stigmatization due to their evil acts of terrorizing the peace of the society.

5. Methodology

The study adopts annual time-series for the period of 30 years (1989-2018) where we sourced the data from Statistical Bulletin of the Federal Ministry of Finance and Statistical Bulletin of the Central Bank of Nigeria (CBN), then Food Production Index of Nigeria.

5.1. Descriptive Statistics of the Variables

The paper seeks to examine the descriptive nature of the variables used in the course of the study. Descriptive statistics is employed in this regard purposely to describe the data by exploring the mean of the series, standard deviation, minimum, maximum, kurtosis and skewness. We used econometric package of e-views (in specification) for the analysis.

5.2. Unit Root Tests

The paper study tested stationarity of the data with the aid of Augmented Dickey Fuller (1979. 1981), which adjusts the Dickey Fuller test to take care of possible serial correlation in the error term by adding the lagged differenced terms and regressand. Unit root equation is specified in the following forms.

 $Y \Delta = \beta 1 + \beta 21 + {}^{\delta}Yt - 1 + ai \sum_{i=\Delta} Yt - 1 + Ut......(3.1)$ Where Δ denotes the first difference, y is the time series being tested t is the time trend variable and

Where Δ denotes the first difference, y_t is the time series being tested, t is the time trend variable, and n is the number of lags which are added to the model to ensure that the residuals, U_t are white noise.

5.3. Model Specification

The ARDL model to be estimated is specified as follows:

$\Delta FPI_t = \beta_0 + \sum_{i=1}^n \beta_{1i} \Delta FPI_{t-i} + \sum_{i=0}^n \beta_{2i} \Delta FGEDF_{t-i} + \sum_{i=0}^n \beta_{3i} \Delta FGREIS_{t-i} + \phi_1 FPI_{t-i} + \phi_2 FGEDF_{t-i} + \phi_2 FG$
$\phi_3 \text{FGREIS}_{t-1} + \varepsilon_{1t} 5 \qquad (3.2)$
The error correction model is expressed as follows:
$\Delta \text{FPI}_{t} = \beta_{0} + \sum_{i=1}^{n} \beta_{1i} \Delta \text{FPI}_{t-i} + \sum_{i=0}^{n} \beta_{2i} \Delta \text{FGEDF}_{t-i} + \sum_{i=0}^{n} \beta_{3i} \Delta \text{FGREIS}_{t-i} + \pi_{1} ECT_{t-1} + \varepsilon_{1t} 6$
(3.3)

Where,

FPI= Food Production Index, **FGEDF**= Federal Government Recurrent Expenditure on Defense, **FGREIS** = Federal Government Recurrent Expenditure on Internal Security β_0 = Constant

 β_1 and, β_2 = Slope/Coefficient

ECT = Error Correction Term

Subscript t = is called the Time

5.4. Technique of Data Analysis

Unit root test is not only used to determine the stationarity of data, but also it is used to know the appropriate technique of analysis to be used for a study. Auto-Regressive Distributed Lag (ARDL) was employed in the study due to the presence of stationarity of the variables at the order of I (0) and I (1), showing a mixture of variables stationary at I (0) while others at I (1).

5.5. Economic a priori Expectation

This shows whether each independent variable in the equation is consistent with the postulations of economic theory. That is, if the sign and size of the parameters of economic relationships follows the expectation of the economic theory. This must be based on the theoretical framework of the subject matter. For the study, theory suggests some relationships or effects of some of the variables on economic growth: ordinarily referred to as a priori expectation. Below is the priori expectation:

Table-4.1. Summary of the a priori expectation					
S/No.	Independent Variables	Dependent Variables	Expected Sign		
1.	FGEDF	FPI	Negative		
2.	FGREIS	FPI	Negative		
Sources A Driver Expectation of the Descenden					

Source: A Priori Expectation of the Researcher

If the estimates of the parameters turn up with signs or size not in conformity with the economic theory, they would be rejected, unless there is a tangible evidence to believe that in the that instance, the principles of economic theory do not hold.

6. Analysis and Discussion of Results

6.1. Descriptive Statistics of the Variables

For checking the normality properties of the data, descriptive statistics is conducted.

	FPI	FGEDF	FGEIS
Median	91.17	61.99	75.17
Maximum	121.6100	330.5900	410.2000
Minimum	46.72000	4.206067	4.400000
Std. Dev.	22.34172	118.8411	138.5360
Skewness	-0.246247	0.789435	0.602997
Kurtosis	1.924032	1.906182	1.839737
Jarque-Bera	1.750323	4.611584	3.500787
Probability	0.416795	0.099680	0.173706
Sum	2671.060	3341.542	4077.458
Sum Sq. Dev.	14475.42	409573.0	556574.9
Observations	30	30	30

Source: Researcher's Computation using E-views 7.0 (2019)

From the descriptive statistics in table 4.1 above, it is affirmed that, all the variables are identically distributed based on the standard of Jaque-Bera probability which states that, the probability of Jaque-Bera should be more than 0.05 to establish that, the variables are normally distributed and it was 1.75.

6.2. Unit Root Tests

The result of the Augmented Dickey-Fuller (ADF) at level shows that two of all the variables have stationarity at level, but after taking the first difference, the other variable become stationary which implies that they are integrated of order one I (1) and order one I (2).

 Table-4.3. Results of Augmented Dickey-Fuller (ADF) Unit Root Test

ADF				
Level	1 st Difference	Stationary Status		
0.088	0.001***	I (1)		
0.486	0.001***	I (1)		
0.030***	0.791	I (0)		
	0.088 0.486	0.088 0.001*** 0.486 0.001*** 0.030*** 0.791		

Source: Researcher's Computation using E-views 7.0 (2019)

Note: Schwarz Information Criterion (SIC) is used to select optimal lag length in the ADF test *** and ** indicate statistical significant at 1% and 5%

6.3. ARDL Bound Test

The bounds testing results reported in Table 4.4 revealed that the computed F-statistic (0.948) is lower than the upper bound I (1) at 1% level; likewise, at 5% the computed F-statistic is lower than the lower bounds values. This implies that there is no evidence of cointegrating or long run relationship between the variables at 1% level of significance as well as at 5% as the decision rule states that, if the F-statistic is lower than the lower bound (as we have found in the study) which is I (0), there is no evidence of long run relationship. Hence long run relationship is not noticed with immediate effect, the absence of long run relationship in the variables as the result shows, it likely implies that, insecurities pass through variables to impact food security.

Although, none of the empirical studies; neither Bosede and Agyeno (2015), nor Kah (2017) as well as Tari *et al.* (2016), adopted in this study employed Auto-Regressive Distributed Lag (ARDL), but notwithstanding, their findings posited that, there is a relationship between insecurity and food security, despite it is negative as the agricultural sector has been hit by the insecurities. Therefore, the area of support by their findings is the relationship between the variables. In this study, it has been that, there is no evidence of cointegrating or long run relationship between the variables, this explains that, insecurity and food security are not related in the long run.

Table-4.4. Results of Bounds Test							
Dependent Variable			Function		F-Statistic		
FPI		f(FPI/ FGED)		F, FGREIS)		0.948*	
Critical Values Bounds							
10% 5%		2.5%			1%		
I(0)	I(1)	I(0)	I(1)	I(0)	I(1)	I(0)	I(1)
2.63	3.35	3.1	3.87	3.55	4.38	4.13	5.00
Source: Researcher's Computations Using E-views 9.0. (2019) (***), (**) and (*) indicates statistical significant at 1%, 5% and							

Source: Researcher's Computations Using E-views 9.0. (2019) (***), (**) and (*) indicates statistical significant at 1%, 5% and 10%.

7. Conclusion

From the study, it appears that, there is no evidence of cointegrating or long run relationship between the variables, this explains that, insecurity and food security are not related in the long run. The area of correlation with the findings of Bosede and Agyeno (2015), Kah (2017) and Tari *et al.* (2016) was the relationship of the variables as in all the findings; none of which employed Auto-Regressive Distributed Lag (ARDL), but other techniques of analysis. The study examined the effect of insecurity on food security in Nigeria, however, the nature of relationship between insecurity and food security has been a null long run relationship and that implies that, insecurities pass through variables to impact food security.

Recommendations

Since insecurities pass through variables to impact food security due to the absence of long run relationship in the variables as the studies shows, therefore, the study recommends on the reinforcement of the nation's securities to enable the country to achieve food security through massive food production. Also there should be check and balance in the budget allocation earmarked to security sectors (defense and internal security) to tackle corruptions. Also culprits and potential threats should be dealt with or punished accordingly.

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