

Urban & Regional Spatial Analysis, Transportation Planning & Development Policy

A Festchrift
in Honour of
Prof. Kayode Oyekanmi Oyesiku

VOLUME II

Edited by:
Bambo Somuyiwa
Olufemi Odufuwa
Yinka Otun

URBAN AND REGIONAL
SPATIAL ANALYSIS,
TRANSPORT AND
DEVELOPMENT POLICIES
(VOLUME II)

Edited by

BAMBO SOMUYIWA
OLUFEMI ODUFUWA
YINKA OTUN

TABLE OF CONTENTS

	Page
<i>Dedication</i>	v
<i>Table of Contents</i>	vii
<i>Foreword</i>	ix
<i>Preface</i>	xi
<i>Acknowledgements</i>	xiii
<i>About the Contributors</i>	xv
<i>About the Editors</i>	xliii
<i>Citation</i>	xlv
Chapter One: Willingness to Use Pedestrian Bridge in Akure, Nigeria	1
Chapter Two: Unconventional Public Transportation and Contemporary Security	21
Chapter Three: Commuters' Behavioural Change, Coping Strategies and Mobility Effects of Petrol Subsidy Removal in Nigeria Challenges in Nigeria	35
Chapter Four: Transportation Land-Use and Mobility Crisis in Nigerian Southwestern Cities	49
Chapter Five: Visual Artists Representation of Transportation Chaos	69
Chapter Six: Examination of Significant Factors Contributing to Insecurity of Railway Transportation in Nigeria	79
Chapter Seven: Analysis of Logistics Infrastructure on Regional Development in Southwestern Nigeria	3
Chapter Eight: Leveraging Logistics Capabilities for Effective Supply Chain Planning of Oil and Gas Firms in South-South Nigeria	105

Chapter Nine:	Climate Change Resilience and Environmentally Sustainable Transport System	123
Chapter Ten:	Flooding in Urban and Rural Areas of Kwara State, Nigeria	147
Chapter Eleven:	Roadmap for Nigerian Teacher Education Sector: Potholes and The Patches	173
Chapter Twelve:	Sustainability in Urban Cemetery Management	185
Chapter Thirteen:	Determinants of Economic Growth and Development Akure, Nigeria	197
Chapter Fourteen:	Green Infrastructure, Urban Flooding and Sustainability of Cities	217
Chapter Fifteen:	Poverty Reduction: Technological Progress & Financial Sector Development in Nigeria	245
Chapter Sixteen:	Geographic Information System (GIS) Applications in Logistics and Transportation	267
Chapter Seventeen:	Geo-Spatial Techniques and Urban Development Control	283
Chapter Eighteen:	Non-Parametrics Statistics: Concepts and Relevance To Urban and Regional Planning Profession	311
Chapter Nineteen:	Port Regulators and Enhancement of Safety, Security and Environmental Sustainability in The Ports	321
Chapter Twenty:	Insurgency and Agricultural Productivity in Shiroro Local Government Area, Niger State	339
Chapter Twenty One:	Neighbourhood Design and Site Planning For Sustainable National Development	353

FOREWORD

This book *Urban and Regional Spatial Analysis, Transportation Planning and Development Policy* is a book of readings in various chapters in honour of Professor Oyesiku, who is one of Nigeria's best academics and researchers in the field of Urban and Regional Planning, Transport Planning, and Management, Quantitative Techniques and Sustainable Development Policy. The book focuses on spatial analysis as the process of studying, examining, assessing, evaluating, and modelling locationally related features along with their attributes and relationships. Spatial analysis is a foundation for the systems relating to Urban and Regional Planning, Transport Planning and Management and extended to overall development relating to how the land can be used as well as involving the potential growth of cities. The spatial analysis provides for the representation of any physical entity relating to geometric and geographic data; it is related to location on the earth's surface. The book therefore presents different forms of techniques which study entities using different analytical approaches derived from spatial data and geographic location of various physical features that include urban planning, land use planning, infrastructure planning, urban revitalization, environmental planning and economic development as well as planning, logistics and supply chain management. The book also presents different dimensions of movement of goods, people, services and provision and management of facilities in the different modes of transportation to achieve safer, faster, comfortable, convenient, economical and environment-friendly movement of passenger, freight, and other economic services. Furthermore, the book highlights the highly essential approaches to city development towards achieving inclusive economic activities, promoting community interaction, and enhancing the quality of life of all citizens. The book proffers solutions to potential challenges that can improve the development of cities and regions towards optimisation of the socio-economic system and overall development of communities. Overall, the book advances various approaches towards the improvement of human settlements, improvement

the conditions of cities and rural areas, and highlighting policy strategies for sustainable/ inclusive growth, urban/ international economic development, while providing various development strategies that promote innovation within and communities, sustainable development, safe environment, economic activities and developing innovative approach support enhanced quality of life in the cities and regions and states.

For over four decades in the outstanding career of Prof Oyesiku, he significantly contributed to the theory, plan and practice of spatial analysis in Urban and Regional Planning and Management and Sustainable Development Policy. This book therefore captures his outstanding expertise highlighted in the chapters on areas of focus, research consultancy services.

The editors and most contributors are Professor Oyesiku's products and colleagues, who have benefitted from his wealth of knowledge in the fields of Urban Planning, Transportation Planning, Urban and Regional Geography Analysis and Sustainable Development Policy. This book will be of interest to academics, professionals, researchers, students, and policymakers, who are concerned with the development of cities, regions, communities and settlements. It will also serve as a channel to understand the frontier of knowledge in the field of Urban and Regional Geography, Transport Logistics Planning, and Development Studies.

The editors are successful and outstanding academic researchers in similar areas of academic and research fields. Professor Oyesiku.

Professor Adeniyi Gbadegesin

Department of Geography, University of Ibadan, Ibadan

Former Vice Chancellor, Ladoke Akintola University of Science and Technology

Ogbomoso, Oyo State.

Former President, Association of Nigerian Geographers (ANOG)

Insurgency and Agricultural Productivity in Shiroro Local Government Area, Niger State

*Ajiboye A.O., Abdullahi I.M., Ohida M.E., Shuaibu K.,
Ogunrinde A.B. & Ktigi M.A.*

Introduction

Prior to the discovery of oil in Nigeria, the agricultural sector was a major sector of the economy in terms of rural employment, availability of sufficient food and fibre, and export revenue (Towobola et al., 2014). Much focus was placed on agriculture that it led Nigeria to become a leading exporter of agricultural goods such palm oil, cocoa, groundnuts, cotton, and rubber. The national agricultural system also produced enough food crops, including yam, cassava, maize, millet, sorghum, and soy beans, such that there was almost no need for food imports. The situation of the agricultural sector in Nigeria has been on a decline as several factors have provided an unfavourable environment for the growth of the sector. One of the major challenges facing the industry is increase in insurgency and insecurity brought about by various non state actors. Terrorism, conflicts and more recently, banditry which have affected all the sectors of the Nigerian economy, have had a disastrous effect on agriculture. Cases of attacks on villages as well as farm settlements have become a frequent occurrence that has consumed the lives of people, animals and damaged properties and resources.

In the northern Nigeria, especially in Niger State, insurgency have mostly been in the form of banditry and terrorism where attacks and kidnappings are conducted by non-state actors on farmers and villages in rural areas (Odunsi-Oyewole, 2022; Ajiboye, Abdullahi. & Ohida, 2023). Banditry emerged in Niger State as a consequence of almost four years of unresolved disputes between resident farmers and nomadic herder groups that roam on the high plains of various local governments, including Rafi, Rijau, Wushishi, Mashegu, and Kontogora in Agricultural Zone C (Ajiboye, Abdullahi. & Ohida. 2023). In 2017, banditry reared its head in Shiroro LGA and gained strength in 2020 during the COVID 19 (Awwal, 2020, Muhammed et al, 2021). The Shiroro LGA served as headquarter for majority of the bandits and their commanders. The bandits would ride motorbikes from one village or community to another

to conduct their operations before returning to their hiding place (Awwal, 2020). Since banditry involves violent acts against civilians, particularly rural residents who are primarily involved in agricultural production, processing, and marketing, cattle rearing, and other food production, processing, and marketing activities, it is inevitable that the production, distribution and marketing of agricultural produce will be highly affected. This is as stated by Mustapha (2015) who identified insecurity as a major problem affecting the productivity, distribution and marketing of farm produce in Nigeria. The continued attack of farm settlement and villagers by bandits coupled with increasing scarcity and price of farm produce are major issues that have plagued the wards in Shiroro LGA. In order to gain adequate knowledge of the situation so as to proffer workable solutions, it is against this background that this study seeks to assess the impact of insurgency on the production, distribution and marketing of agricultural products in Shiroro LGA in Niger state.

Shiroro LGA of Niger state has been one of the areas that have witnessed several attacks by insurgents (Ajiboye, 2023, Muhammed et al 2021). These attacks have resulted in loss of lives and properties, affected farming practices and productivity and negatively impacted the economy and cost of living of those within the communities. The effects of these attacks have not been limited to Shiroro alone, as other areas within and outside the state that depend on the farm produces from Shiroro have been indirectly affected. According to Situation Report (SB Morgen, 2021), between the year 2020 and February 2021, at least 301 lives were lost in 73 violent incidents within Niger State with Shiroro witnessing the worst of those attacks. In an incident on February 2, 10 villages in Shiroro Local Government Area of Niger State were attacked by terrorists resulting in the killing of 25 people and abduction of 40. This attack was due to the refusal of the communities to hold negotiation with terrorists on the amount of tax required to permit the farmers harvest their farm produces (SB Morgen, 2021). Another deadly attack was reported in 2022 were terrorists attacked a mining site, killing and abducting those on site. The attack resulted in the killing of 43 people, including 37 security personnel (Maishanu, 2022). This chapter focuses on the socio-economic characteristics of the farmers and the effects of insurgency on the production, distribution and marketing of farm products in Shiroro LGA while the hypothesis tested is that there is no statistically significant difference between the mean responses of farmers and traders on the effect of insurgency on profitability of farm produce in Shiroro LGA.

Insurgency and Agricultural Production

An insurgency is a revolt against authority. The term may also be used to refer to an illegal movement that has not received governmental authorisation and poses a danger to people's economic, social, political, and religious convictions in a certain geopolitical context (Yusuf, et al., 2018). According to O'Neill (2005), insurgency is a battle between a non-ruling group and the governing authorities in which the non-ruling faction intentionally employs political resources and violence to demolish, reformulate, or preserve the foundation of one or more components of politics. Abraham (2006) see insurgency as actions of violent movements carried out by groups of person or individuals to reject or oppose the enforcement of law or running of government or rebel against established authority of the state or taking part in insurrection.

The agricultural sector in Nigeria is an important sector whose contribution to the economy cannot be ignored. In the year 2021, the sector contributed almost 24% of the country's Gross Domestic Product (GDP) (Odunsi-Oyewole, 2022). The sector not only provides agricultural produces, but also provides employment and serves as means of livelihood to many in the country. It is worth noting that, no country can afford to take for granted the safety of its citizens and its geographical area. Certainly, the level of security or lack thereof in a country has the potential to have a significant impact on every part of human endeavour, including health, the environment, food, economics, politics, social issues, education, sport, and physiological issues, among others.

In recent years, Nigeria have been faced with the challenge of insecurity as different non-state actors have risen in different states and locations within the country. Terrorism activities by Boko Haram elements, Niger Delta militants and Banditry have pushed the country into an unending circle of violence which has resulted in loss of lives and properties. The insecurity resulting from insurgencies have adversely affected the various sectors of the economy with the agricultural sector taking one of the hardest hits. Margarita (2013) claims that the Boko Haram insurgency in northern Nigeria, ethnic and religious strife in central Nigeria, militant conflicts in the Niger Delta sparked by oil exploitation, and environmental degradation in the Niger Delta region have all had a negative impact on the availability and affordability of food in these areas. Due to security checks and the government's military counter-terrorism strategies, many small farmers have been forced to relocate, while others are

Theoretical Issues

The Resource Dependence Theory (RDT) is a theory proposed by Pfeffer and Salancik in 1978. The theory suggests that organisations are dependent on external resources to achieve their goals and objectives (Hillman, Withers, & Coughlan, 2009). The theory explains that the factors which influence resource dependence are three namely: the prevalence of resources, the importance of resources and the control of resources. The theory believes that an organisation is affected by the actions or condition of outside external resources. In the case of agriculture in Shinyo, the theory seeks a relationship between effects of insurgency which is an external factor and agriculture production, distribution and marketing. These resources can include access to markets, financial resources, and natural resources, among others.

The theory contends that in this situation, access to markets, transportation infrastructure, and inputs are examples of external resources that farmers, distributors, and marketers must rely on in order to operate. Insurgency situations may affect these resources' accessibility and availability, which lowers agricultural productivity as well as their distribution and marketing. Insurgency may make it harder to convey commodities to markets by restricting access to inputs like insecticides and fertilisers as well as by disrupting the transportation infrastructure. Farmers may not have the resources they need to grow crops as a result, which might result in a decline in agricultural production. A fall in demand for agricultural products may also be brought on by insurgency since people may be afraid to go to marketplaces to purchase items. This may result in lower sales for marketers and distributors, as well as lower income for farmers.

Indeed, the Resource Dependence Theory contends that insurgency may significantly affect Shinyo's agricultural sector by obstructing access to vital resources and causing a drop in agricultural produce output, distribution, and marketing.

Empirical Review

Odunsi-Oyewole (2022) assessed the impact of insurgency on Nigeria's agricultural sector using an ex-post facto research design. Secondary data on rate of kidnapping, death rate of Boko Haram as well as the contribution of agriculture to the country's Gross Domestic Product (GDP) was collected from the Council on Foreign Relations Website as well as the Central Bank of Nigeria (CBN) Statistical Data for the time period of 2014 to 2020. Purposive sampling technique was adopted for the study while the Fado and Yamamoto's VARS was used for data analysis. The study revealed that there was a causal link between

insurgency and the agricultural sector. According to the study, insurgency was a major factor that can determine the level of agricultural output in an economy or determine the future trend in agriculture. The study recommended that job opportunities be provided by government in order to stimulate the economy and reduce the level of vulnerability of unemployed individuals to acts of kidnapping and terrorism.

Mohammed, et al (2021) examined the impact of armed banditry on the level of income and living conditions of the yam marketers in one of the most affected Local Government Areas of Niger State, Nigeria - Shiroro. 197 yam marketers were selected through multi-stage sampling technique for data collection which was done through the use of structured questionnaire and interview while the data were analysed by using descriptive statistics, multiple regression and livelihoods status index. The findings shows that majority of the respondents have experience in yam marketing that have lasted many years and are mostly male and the armed banditry affected the level of income and living conditions of the yam marketers negatively while it was recommended to the yam marketers that they should diversify their activities to other income generating activities in order to improve their living condition and there should be collaboration between the community leaders and the government for security of life and properties.

Ojo et al., (2018) studied the effect of insurgency on the productivity of food crop farmers in Borno and Gombe States, Nigeria. Random sampling technique was adopted to select 240 food crop farmers from six (6) local government areas in both states. Primary data on socio economic characteristics of farmers, quantity of farm inputs required and obtained as well as challenges faced by the farmers were collected using structured questionnaires. The collected data were then analysed using descriptive, inferential statistics as well as ordinary least square (OLS) regression. Result from the study revealed that insurgency had a significant negative effect on the level of the level of productivity of food crop farmers. The study recommended that intensive efforts should be made by government to restore peace and security to the study area in order to improve the level of productivity of food crop farmers in the area.

Jare and Bunu (2021) studied the effects of Boko Haram insurgency on the production of crops in Adamawa state, Nigeria. The study sought to determine the difference between the pre-insurgency and post-insurgency levels of crop production in the study area. The study adopted a multi stage random sampling method in selecting 278 respondents for the study. Questionnaires and interview were utilised as instruments for data collection while frequency and percentage

were adopted for data analysis. The study revealed that since the insurgency began, the level of farm output has fallen drastically. Greater number of farmers now produce fewer kilograms of crops resulting in low output. Before the insurgency, farmers obtained outputs ranging between 1100kg to 2000kg per acre on crops such as maize, groundnut, sorghum, cowpea and rice while post-insurgency, the output fell within the range of 100 to 1000kg. The result showed that insurgency affected the level of production and output of crops in the study area. It was therefore recommended that government should sensitise farmers on the importance of security consciousness while providing financial assistance to farmers affected by insurgency in order to improve productivity.

Despite all these the researches on the impact of armed banditry across the nation there are no specific work that look at the effects of insurgency on agricultural production, distribution, transportation and marketing in Shiroro LGA of Niger State.

Methodology

Shiroro LGA is a local government area in Niger State with 15 wards covering an area of 5,015 square kilometres. It is located at 9°57'25"N 6°49'55"E with a population of approximately 400,000. It is bounded in the north by Kaduna State, south by Bosso, Paikoro and Wushishi LGAs, east by Muye LGA and west by Rafi LGA. Survey research design was employed in this study while data was collected from primary sources. The sample size of 400 was selected using the Taro Yamane formula. The sample size was then shared within the 15 wards in Shiroro LGA where 27 respondents were selected in each ward. Stratified random sampling method was adopted in the study. 407 structured questionnaires were administered to farmers in the study area, while only 350 were correctly filled and returned. The questions were structured on five-point Linkert scale rating of Strongly Disagree (SD): 1, Disagree (D): 2, No Opinion (NO): 3, Agree (A): 4 and Strongly Agree (SA): 5.

The 15 wards studied were the Allawa, Gussoro, Bangajiya, Bassa, Egwa, Erena, Kurebe, Kwaki, Manta, Gaikogo, Gurmana, Kato, Pin, Ubandoma and the She wards. Analysis of collected data was carried out using descriptive statistics such as frequency, percentages as well as mean average. In analysing the results, a mean score within the range of 1.00 to 1.50 indicates strongly disagree, 1.51 – 2.50 indicates disagree, 2.51 – 3.50 indicates neutral (or neither agree nor disagree), 3.51 – 4.50 indicates Agree while 4.51 – 5.00 indicates strongly agree. Z-test statistics was also adopted to test the hypothesis at 0.05 level of significance.

Results and Discussion

Socio-Economic Characteristics of Respondents

The socio-economic characteristics of the farmers are presented in Table 1. Result shows that 82.9% of the farmers studied were male while 17.1% were female. This shows that majority of the farmers in Shiroro LGA were male. Result also showed that majority of the farmers (67.1%) were married, 22.9% were single while 10% were divorced. This result farming profession in rural areas mostly comprise of married individuals.

Table 1: Socio-Economic Characteristics of Respondents

Characteristics		Frequency	Percentages
Sex	Male	290	82.9
	Female	60	17.1
	Total	350	100
Marital Status	Married	235	67.1
	Single	80	22.9
	Divorced	35	10
	Total	350	100
Age	Less than 21 years	12	3.4
	21 - 30 years	95	27.1
	99	28.3
	41 - 50 years	96	27.4
	Above 50 years	48	13.7
	Total	350	100
Primary Occupation	Farming	293	83.7
	Trader	45	12.9
	Civil Servant	12	3.4
	Total	350	100

Source: Authors' Field Survey (2023)

From the result, majority of the farmers (28.3%) were within the age range of 31-40 years, followed by those within the age range of 41 - 50 years who were 27.4%, then those that fall within the range of 21-30 years who were 27.1%. The result revealed that farmers less than 21 years of age or above 50 years of age were few as they accounted for just 3.4% and 13.7% of the population.

The result also showed that farming was the primary occupation of majority of the people studied as about 83.7% were farmers, 12.9% were traders while 3.4% were civil servant. This result therefore implies that the primary occupation of residents in rural area was farming.

Effect of Insurgency on Production of Crops

The result from the table 2 shows the effects of insurgency on production of crops in Shiroro LGA. The result showed that all the variables tested had a mean rating of more than 4.00 signifying agree or strong agreement with the statement. The result showed that the majority of the farmers agreed or strongly agreed to the fact that insurgency had a major effect on the cost and availability of farm inputs like labour, improved seeds, fertilizers and herbicides which has increased between 40 and 85% before the insurgency and now. It has contributed to damages to farm lands and crops and has greatly reduced productivity of farmers to 30-50%. The result also revealed that payment of illegal taxes and levies to the insurgents or security officials for protection have reduced or eliminated profitability and, in some cases, even resulted in losses. The respondents strongly agreed with the statement that insurgency had resulted in high cost of improved seed (with a mean rating of 4.69), high cost of labour (with a mean rating of 4.89), inability to get adequate hands for labour (with a mean rating of 4.95), damage to planted crops due to attacks (4.95), high cost of herbicides and fertilizers (with a mean rating of 4.79), inability to acquire safe and adequate farm land for farming (with a mean rating of 4.63), Loss of profit and capital due to high tax from insurgents and some security operatives (with a mean rating of 4.87) and low productivity (with a mean rating of 4.85).

This result therefore shows that the production of crops is negatively affected by insurgency in the area with almost 55% of arable lands not cultivated. This is disastrous as farming is a major occupation in most of the studied areas. It is therefore evident that insurgency have not only resulted in loss of lives but also affects the livelihood and economy of the society.

Table 2. Effects of Insurgency on Production of Crops

Effects on Production of Crops	SA	A	NO	D	SD	N	Mean
Higher Cost of Improved Seeds	242	108	0	0	0	350	4.69
Inability or difficulty in acquiring improved seeds	148	170	0	0	0	318	4.47
Higher cost of labour	312	38	0	0	0	350	4.89
Inability to get adequate hands for labour	333	17	0	0	0	350	4.95
Damage to farm land due to attacks	243	57	10	40	0	350	4.44
Damage to planted crops due to attacks from insurgent	331	19	0	0	0	350	4.95
High cost of herbicides and fertilizers	293	49	0	8	0	350	4.79
Inability or difficulty to acquire herbicides and fertilizers	210	122	0	14	4	350	4.49

Inability to acquire adequate safe and fertile farm land for farming	290	25	10	15	10	350	4.63
Loss of profit and capital due to high tax from insurgents and some security operatives	330	10	0	4	6	350	4.87
Low productivity	296	54	0	0	0	350	4.85

Source: Authors' Field Survey (2023)

Effects of Insurgency on Transportation and Distribution of Farm Produce

The effects of insurgency on the transportation and distribution of farm produce is presented in Table 3 below. From the table, it was discovered that the majority of the respondents either agreed or strongly agreed that insurgency has resulted in high cost of transportation of farm produce, delay in distribution, damage to farm produce due to delay in transportation and damage to farm produce resulting from attacks. The result shows that the distribution of farm produce is negatively affected by insurgency. This has led to damage to farm produce and delay in distribution.

This shows that the safe production of farm produce does not guarantee safe transportation and distribution as farmers are still faced with challenges of safely transporting or distributing produces to markets or homes. This shows that the effects of insurgency are far reaching and calls for urgent actions from all stakeholders.

Table 3: Effects of Insurgency on Transportation and Distribution of Farm Produce

Effects on Distribution of Farm Produce	SA	A	NO	D	SD	N	Mean
High cost of transporting farm produce	339	11	0	0	0	350	4.97
Delay in distribution of farm produce due to fear of or attacks by insurgents	320	15	10	5	0	350	4.86
Damage to farm produce due to delay in transportation	332	18	0	0	0	350	4.95
Loss of produce from attacks by insurgents	111	127	0	103	9	350	3.65

Source: Authors' Field Survey (2023)

Effects of Insurgency on Marketing of Farm Produce

The effects of insurgency on marketing of farm produce is presented in Table 4. From the table, it is shown that insurgency has resulted in high cost of farm

produce, decreased supply of farm produce, decrease in demand, reduced profit from sales of products and low patronage due to affordability. Majority of the respondents strongly agreed or agreed that insurgency has negatively affected their ability to market their farm produce.

The high cost of farm produce is as a result of the high cost and unavailability of farm inputs such as labour, improved seeds, fertilizers and herbicides as well as high cost of transportation of farm produce to the market. These are all difficulties and challenges brought about by the state of insecurity in the area. Farmers are therefore forced to increase the price of their commodities so as to realise profit or at least recover cost. The supply of farm produces has also fallen due to the low productivity brought about by the insurgency. Also, due to the mass exodus of residents for insurgency prone areas, the level of patronage of the farm produces have reduced as fewer people live within the community and demand for the products.

Table 4: Effects of Insurgency on Marketing of Farm Produce

Effects on Marketing of Farm Produce	SA	A	NO	D	SD	N	Mean
High cost of farm produce	333	17	0	0	0	350	4.95
Lower supply of produce due to poor productivity.	256	94	0	0	0	350	4.73
Low patronage due to affordability	203	127	16	4	0	350	4.51
Low demand due to reduced population resulting from freeing insurgency threat	299	51	0	0	0	350	4.85
Low Profit from Sales	317	33	0	0	0	350	4.91

Source: Authors' Field Survey (2023)

These challenges of insecurity have also directly and indirectly contributed to the increasing poverty level in such a way that residents now find it difficult to afford basic needs. In cases where farm products are available, there is poor demand due to high cost, unaffordability and reduced population. It can therefore be summarised that the insurgency had negatively affected not just the production and distribution of farm produces but has also affected the marketing of farm produce. The result from Table 5 shows that the Z-Cal value of 0.032 is less than the critical value of 0.05. The null hypothesis is therefore accepted and the alternate hypothesis is rejected. This therefore implies that there is no statistically significant difference between the mean responses of

farmers and traders on the effects of insurgency on the profitability of farm produce in Shiroro LGA.

Table 5: Z-Test Analysis of the Mean Responses of Farmers and Traders on the Effects of Insurgency on the Profitability of Farm Produce in Shiroro LGA

Farmers' Productivity	N	Mean	SD	Degree of Freedom	Z-Cal	Decision
Farmers	293	4.07	0.95	337	0.032	Not Significant
Traders	45	4.23	0.91			

Source: Authors' Computation (2023)

Conclusion

Insurgency in the Shiroro LGA has negatively affected the productivity, transportation, distribution and marketing of farm produce. Farmers are faced with great challenges such as inability to acquire necessary farm inputs such as labour, fertilizers, improved seeds and herbicides due to the increasing and incessant attacks by bandits in the area. Insurgency have resulted in lower productivity. The distribution and marketing of farm produce were also discovered to have suffered greatly as goods produced are at risk of damage due to attacks by insurgents. Higher transportation cost and low patronage and demand for commodities were also other challenges facing the marketing of the farm produce. It is important to note that great effort should be put in place by the government of Niger state to curb the issue of insecurity by liaising with the security agencies, provision of weapons and ammunition, electronic gadgets for surveillance, empowering the youths to reduce their restless so as not to be a ready tool for recruitment by the insurgents. Government should also make farm inputs such as fertilizers, improved seeds, machinery, herbicides are readily available and accessible at subsidized prices in order to enable farmers purchase or rent them for usage. This will improve the productivity of the farmers. It is also recommended that government control the price of commodities in market to ensure that the commodities are affordable to the masses.

References

- Abrahams, M. (2006). Why terrorism does not work. *International Security*, 31(2),42-78.
- Ajiboye, A.O. (2023). Influence of armed banditry on agro-food supply chain in Niger State, Nigeria. *Benin Journal of Geography, Planning and Environment*, 3(1),156-173.
- Ajiboye, A. O. Abdullahi, M. I. & Ohida, M.E. (2023). Effects of insurgency on road transportation operations in Niger State, Nigeria. *Port Harcourt Journal of Disaster Risk Management & Development Studies (PJDRMDS)*, 5(1),61-75.
- Awwal, S. T. (2020). Nigeria: Bandits abduct 11 farmers in Niger State. Retrieved from News line.com/stories/2020/142817.11
- Dabugat, K. K. (2013). Special report: Food security challenges in West Africa: A focus on agriculture. *West Africa Insight*, October, 2013 Agriculture
- Hillman, A. J., Withers, M. C., & Coollins, B. J. (2009). Resource dependence theory: A review. *Journal of Management*, 35(6),1404-1427.
- Jare, N., & Bunu, G. (2021). Effects of Boko Haram insurgency on crop production in Northern Adamawa State Nigeria. *International Journal of Innovative Agriculture & Biology Research*, 9(3),24-31.
- Maishanu, A. A. (2022, June 2). How terrorists attacked mining site, killed Soldiers and Police in Niger State. Retrieved from PREMIUM TIMES: <https://www.premiumtimesng.com/news/top-news/540085-how-terrorists-attacked-mining-site-killed-soldiers-police-in-niger-state-residents.html?tztc=1>
- Margarita, F. (2013). Conflicts, rural development and food security in West Africa. *ESA working paper 04-02*, P 2-19.
- Mohammed, U., Umar, I.S., Olaleye, R. S., Pelemo, J. J.,Ahmad, B. S., Mohammed, U., & Umar, A. (2021). Effects of banditry on income and livelihoods of yam marketers in Shiroro Local Government Area of Niger State, Nigeria. *Journal of Agriculture and Food Sciences*, 19(1),163-178.
- Mustapha, M. (2015). Boko Haram insurgency gnawing at Nigeria's food supply. *Bloomberg business*. Retrieved from <http://www.bloomberg.com>

- Odunsi-Oyewole, O. A. (2022). Impact of insurgency on agricultural sector in Nigeria. *International Journal of Research in Education and Sustainable Development*, 2(1),37-47.
- Ojo, M. A., Usman, M. A., Mohammed, U. S., Ojo, A. O., & Oseghale, A. I. (2018). Effect of insurgency on food crop farmers' productivity in Borno and Gombe States, Nigeria. *Ife Journal of Agriculture*, 30(3),43-55.
- Neill, B.E. (2005). *Insurgency and Terrorism. From revolution to apocalypse*. Potomac, Washington DC
- SB Morgen (2021). SITREP Niger State: Terrorist Take Over. Abuja: SB MORGEN.
- Towobola, W. L., Luqman, R., Kolade, T. T., Ogunwale, A. B. and Olakojo, S. A. (2014), Entrepreneurship: A vehicle for sustainable food production in Nigeria. *Journal of Poverty, Investment and Development*, 5, 23 - 24
- Yusuf, G., Akpansung, O. A., & Baranzi, M. (2018). Effect of insurgency on agricultural outputs in Biu Local Government Area of Borno State. *International Journal of Social Science and Humanities Research*, 6(4),1199-1210.