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Perceived Effect of Fuel Hike on Agricultural Production Among Arable Crop Farmers in Akoko South West Local Government Area, Ondo State, Nigeria

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A R T I C L E I N F O

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A B S T R A C T

The study examined the perceived effect of fuel hike on agricultural production among arable crop farmers in Akoko South West Local Government Area, Ondo State, Nigeria. The study employed a multi-stage sampling process to choose 120 respondents. A well-structured and validated questionnaire was used to collect the data, and both descriptive and inferential statistics were used for analysis. Three objectives were developed for the study and one hypothesis was tested. Findings from the study revealed that the major factors contributing to fuel hike in the study area were unstable economy ($\bar{x}$ =4.33), government taxes ($\bar{x}$= 4.14), overreliance on fuel ($\bar{x}$ = 4.10) and hoarding of fuel ($\bar{x}$ =4.08). Consequently, the farmers perceived that fuel hike had led to a reduction in their profit margins ($\bar{x}$ =4.03), increased their production cost ($\bar{x}$ =3.74), caused limited access to farm inputs and services ($\bar{x}$ =3.53) and negatively impacted their farming practices ($\bar{x}$ =3.48).

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INTRODUCTION

Agriculture continues to be the most important economic activity in terms of employment and links with the rest of the economy, even though it no longer accounts for the majority of Nigeria's GDP and foreign exchange earnings due to the explosive growth in the oil sector (Oluwatayo and Ukpe, 2015). Agriculture accounts for one third of the GDP and it is the leading employment sector of the vast majority of the Nigerian population as it employs two third of the labour force. According to Jukman (2022) Nigeria's Agricultural sector comprises four sub-sectors namely: crop production, livestock production, forestry and fisheries with 34 million hectares used for arable crops out of the total 70.8 million hectares of arable land, 6.5 million hectares used for permanent crops while 80.3 million hectares are available for pastures and meadows. Similarly, the agricultural sector plays a vital role in the economy of Ondo State as the state is blessed with fertile land, suitable climatic conditions, and a rich agricultural heritage. As a backdrop, it is the belief of policymakers that Nigeria will have consistent national revenue earnings if the money earned from oil is merged with that from agriculture. (Jukman, 2022).

On the other hand, a fuel hike is a rise in price per litre of petrol which can be caused by the landing cost of petrol among other factors (Okoroh 2024). It can also be referred to as the inadequate availability and affordability of petroleum products, such as petrol, diesel, and kerosene, which are essential for powering farm machinery, irrigation systems, transportation, and agro-processing activities (Ocheni, 2015). Despite the adverse consequences of rising fuel prices, the Federal Government of Nigeria stopped subsidizing petroleum on January 1st, 2012. However, subsidy was restored later between 2015 and 2023 during President Buhari's regime. Although this reversal was considered by the government to maintain fuel prices within the reach of its population, smuggling could not be eradicated which led again to it removal by the latest Government of President Bola Ahmed Tinubu in 2023**.** In recent time, fuel prices have been a significant factor in determining the market price of agricultural products. Given this, it is imperative that the government should take a proactive measure to address the hike in fuel price (Oderinde, Akano, Adesina & Omotayo, 2022). Worthy of note is that, in Nigeria's economy, petrol serves as an intermediate input in agricultural production. Therefore, any change in price, quality and quantity affect agricultural productivity and profitability (Adereti, 2022). Also, many people assume that the daily rise in the cost of food and other agriculturally related products is entirely the result of young people's refusal to pursue careers in farming.

In view of this development, the high cost of fuel price has halted social and economic activities in and around Ondo State, with the price of everything sold going up causing limited access to fuel for agricultural machineries,

increased transportation costs, disrupted distribution of agricultural inputs, insufficient post-harvest management among others (Chandio, Shah, Sethi & Mushtaq, 2022).

THEORETICAL REVIEW

1. Cost-Push Inflation: This theory posits that rising production costs are the primary driver of price increases.

This theory is often associated with a decrease in aggregate supply (the total amount of goods and services available). Examples include:

Rising raw material costs: If the price of essential inputs like oil or metals increases, manufacturers may pass those costs onto consumers.

Increased taxes or regulations: Government policies that raise the cost of doing business can also lead to price increases.

2. Production Function: The theory of production explains how firms combine inputs (like labor and capital) to produce outputs (goods and services). Changes in the availability or cost of these inputs directly impact the production function and, consequently, potential price changes.
3. Price Mechanism: In a free market, the price mechanism is the process by which prices are determined based on supply and demand. However, cost-push inflation can disrupt this mechanism, causing prices to rise even when demand is not increasing. Therefore, this research is anchored on the two theories as a change in price can push production either way (increase or reduction as well as affect the level of output of arable crop farmers. This could result in a significant relationship between the fuel hike and arable crop production or otherwise.

Conceptual Framework

The conceptual framework revealed the interactions that exist among the independent, intervening and the dependent variables of this research work. The independent variables include the factors contributing to fuel hike and strategies employed by farmers in mitigating the effects of fuel hike while the dependent variable is the effect on arable crop production. The intervening variables considered within this framework include socio-economic factor such as age, sex, marital status, educational attainment, household roles, and membership of association; poverty, geographical and ecological characteristics, migratory tendencies which may have direct or indirect impact on the respondents' perception on the effect of fuel hike on arable crop production in the study area. The dependent variable which is perception on the effect on arable crop production could be determined whether the respondents agree of disagree with the perception statements as well as if there is significant relationship or

otherwise between fuel hike and arable crop production in the study area. This association is illustrated in Figure 1 as follows:

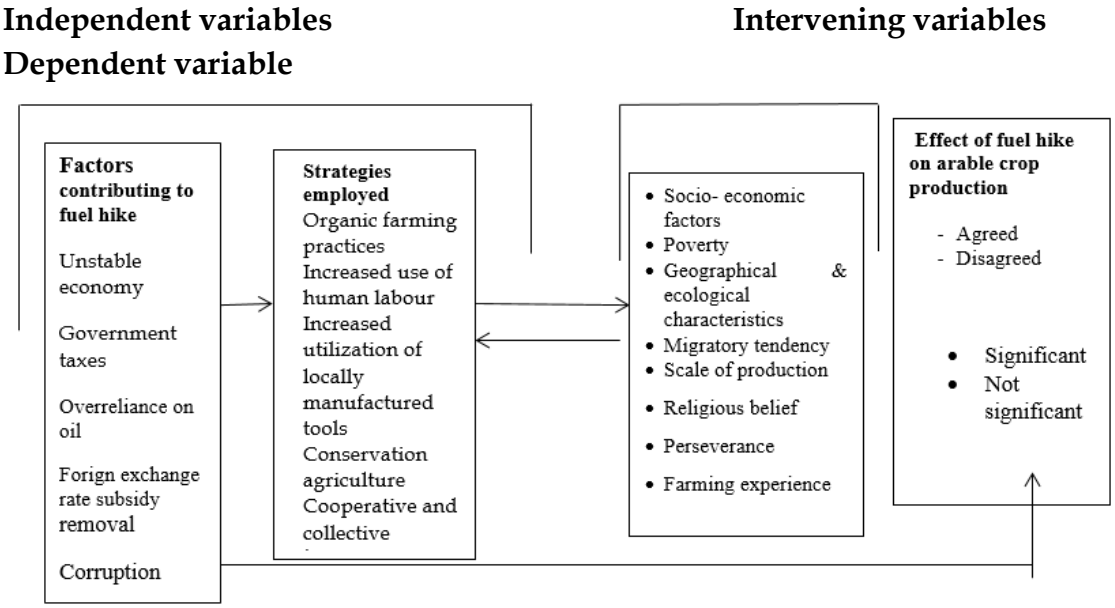

Figure 1. Conceptual framework on the effect of Fuel Hike on Agricultural Production Among Arable Crop Farmers in Akoko South West Local Government Area, Ondo State, Nigeria

METHODOLOGY

Study area

The study was conducted in Akoko South West Local Government Area, Ondo state.

Population of the study

The target population of this study consisted of all arable crop farmers in Akoko South West Local Government Area.

Sampling procedure and sample size

Multistage sampling which consists of three stages was employed in the selection of respondents for the study. In the first stage, purposive sampling technique was used to select Akoko South West Local Government Area due to the high population of farmers in the Local Government Area. In the second stage, the simple random sampling technique was adopted to select five (5) communities (Oka Akoko, Supare Akoko, Oba Akoko, Ikun Akoko and Akungba Akoko) from the LGA. The last phase involved systematic selection of 20 farmers from each of the communities, making total of 120 respondents.

Sources of data

Primary and secondary sources of information was used in the study

Method of data collection

Quantitative method was used to obtain data for this study through the use of well-structured questionnaire was administered to obtain information from the respondents.

Measurement of variables

a. Independent variables

Factors Contributing to Fuel Hike

A 5-point Likert-type scale was used Strongly Agreed (SA), Agreed (A) Undecided (U), Disagreed (D), and Strongly Disagreed (SD). SA, A, U, D, SD were coded as: 5, 4,3,2,1 for positive statements and 1.2.3.4.5 for negative statements respectively.

Strategies Employed by Farmers in Mitigating the Effects of Fuel Hike

This variable was measured on a 2-point scale of a strategy and not a strategy. A strategy was coded 2 while not a strategy was coded 1.

b. Dependent variable

Agricultural production in the study area

A 5-point Likert-type scale was used Strongly Agreed (SA), Agreed (A) Undecided (U), Disagreed (D), and Strongly Disagreed (SD). SA, A, U, D, SD were coded as: 5, 4,3,2,1 for positive statements and reversed for negative statements respectively.

Method of data analysis

The data collected were analyzed using both descriptive and inferential statistics on SPSS version 24. The descriptive statistics used were frequency count, percentages and mean. However, inferential statistics PPMC (Pearsons' Product Moment Correlation was used to test the stated hypothesis.

RESULTS

Factors Contributing to Fuel Hike

Results in Table 1 show that all the factors contributing to fuel hike listed were highly recognized by farmers as they fell within the mean response of 3.0 except fluctuations in global prices ($\bar{X}$=2.06). The highest ranked factors include unstable economy ($\bar{X}$=4.33), government taxes ($\bar{X}$=4.14), overreliance on fuel ($\bar{X}$=4.10), hoarding of fuel ($\bar{X}$=4.08). These findings corroborated the findings of Ocheni (2015) who in a related study reported that unstable economy and overreliance of fuel were the highest factors contributing to fuel hike. The implication is that all this factors should be addressed by all relevant stakeholders to ensure a reduction in fuel price and promote a more sustainable arable crop production.

Table 1. Factors Contributing to Fuel Hike

	Strongly Agree		**Agree**		**Undecided**		**Disagree**		**Strongly Disagree**		**Mean**	**Decision**
	Fre	**%**	**Fre**	**%**	**Fre**	**%**	**Fre**	**%**	**Fre**	**%**		

Unstable economy	39	32.5	81	67.5	-	-	-	-	-	-	4.33	A
Government taxes	26	21.7	88	73.3	3	2.5	3	2.5	-	-	4.14	A
Overreliance on fuel	18	15.0	96	80.0	6	5.0	-	-	-	-	4.10	A
Hoarding of fuel	18	15.0	95	79.2	6	5.0	-	-	1	0.8	4.08	A
Limited storage facilities	24	20.0	87	72.5	3	2.5	5	4.2	1	0.8	4.07	A
Corruption	18	15.0	91	75.8	5	4.2	6	5.0	-	-	4.01	A
Foreign exchange rates	30	25.0	72	60.0	-	-	6	5.0	12	10.0	3.85	A
Subsidy removal	18	15.0	76	63.3	5	4.2	21	17.5	-	-	3.76	A
Market forces	-	-	41	34.2	45	37.5	34	28.3	0	0.0	3.06	A
Fluctuations in-global prices	-	-	18	15.0	-	-	73	60.8	29	24.2	2.06	D

Grand mean ≥ 3.0
Source: Field Survey, 2025

Perceived Effect of Fuel Hike on Agricultural Production

As presented in Table 2, farmers perceived that fuel hike leads to a reduction in profit margins ($\bar{X}$=4.03), fuel hike increases production cost ($\bar{X}$=3.74), fuel hike causes limited access to inputs and services ($\bar{X}$=3.53) and fuel hike causes negative changes in farming practices ($\bar{X}$=3.48) as their main effect of fuel hike on agricultural produce. The findings of the study show that respondents are very aware of the effects of fuel scarcity in the study area. This corroborates the findings of Okoroh (2024) who in a related study conducted in Imo state asserted that increased cost of transportation for farm inputs, increased cost of production activities, increased price of farm produce and increased food prices, decreased agricultural productivity, limited access to agricultural machinery and equipment and increased in transportation cost of farm produce to the market were the major effects of fuel price hike on farming activities among farming households.

Table 2. Perceived effect of fuel hike on agricultural production

	Strongly agree		Agree		Undecided		Disagree		Strongly disagree		Mean	Rank	Decision
	Fre	%	Fre	%	Fre	%	Fre	%	Fre	%			
I am of the opinion that fuel hike leads to a reduction in my profit margins	3	2.5	23	19.2	12	10.0	-	-	5	4.2	4.03	1st	A
I think fuel hike increases my production cost	5	4.2	72	60.0	10	8.3	-	-	7	5.8	3.74	2nd	A
I think fuel hike causes limited access to farm inputs and services	25	20.8	84	70.0	22	18.3	-	-	15	12.5	3.53	3rd	A
I think fuel hike causes negative changes in farming practices	15	12.5	72	60.0	-	-	49	40.8	3	2.5	3.48	4th	A
The increase in food prices in my area is caused by fuel hike	40	33.3	29	24.2	-	-	-	-	25	20.8	3.47	5th	A
Fuel hike causes financial challenges in the course of arable crop production	105	87.5	103	85.8	-	-	-	-	40	33.3	3.42	6th	A
I don't think fuel hike causes limited access to inputs and services	15	12.5	-	-	105	87.5	-	-	15	12.5	2.75	7th	D
Fuel hike did not lead to a reduction in profit margins	105	87.5	-	-	-	-	120	100.0	-	-	2.00	8th	D
The increase in food prices in my area is not caused by fuel hike	104	86.7	-	-	-	-	105	87.5	15	12.5	1.87	9th	D

	Strongly agree		Agree		Undecided		Disagree		Strongly disagree		Mean	Rank	Decision
	Fre	%	Fre	%	Fre	%	Fre	%	Fre	%			
Fuel hike does not cause negative changes in farming practices	15	12.5	-	-	-	-	15	12.5	105	87.5	1.13	10th	D
I think fuel hike does not cause financial challenges	7	5.8	103	85.8	-	-	16	13.3	104	86.7	1.13	10th	D
I don't think fuel hike increased production cost	15	12.5	72	60.0	10	8.3	-	-	120	100.0	1.00	11th	D

Grand mean ≥ 3.0
Source: Field Survey, 2025

Strategies Employed by Farmers in Mitigating the Effects of Fuel Hike

The analysis of strategies employed by farmers in mitigating the effect of fuel hike indicates that organic farming practices (X̄=1.73), increased use of human labour (X̄=1.65),increased utilization of locally manufactured tools (X̄=1.42) and utilization of traditional storage methods (X̄=1,42) were the most ranked strategies. This implies that all the identified strategies should be factored into agricultural development intervention as a way of reducing the negative effect of fuel hike on farming activities.

Table 3: Strategies employed by farmers in mitigating the effects of fuel hike

	A strategy		Not a strategy		Mean	Rank
	Fre	%	Fre	%		
Organic farming practices	88	73.3	32	26.7	1.73	1st
Increased use of human labour	78	65.0	42	35.0	1.65	2nd
Increased utilization of locally manufactured tools	51	42.5	69	57.5	1.42	3rd
Utilization of traditional storage methods	51	42.5	69	57.5	1.42	3rd
Crop diversification	11	9.2	109	90.8	1.09	4th
Sustainable energy alternatives	11	9.2	109	90.8	1.09	4th
Cooperative and collective buying	11	9.2	109	90.8	1.09	4th

Conservation agriculture	11	9.2	109	90.8	1.09	4th
Improved transportation strategy	11	9.2	109	90.8	1.09	4th

Grand mean ≥ 1.5
Source: Field Survey, 2025

Hypothesis testing

Relationship between Factors Contributing to Fuel Hike and Agricultural Production in the Study area.

The finding in Table 4 revealed there is significant relationship factors contributing to fuel hike and agricultural production as the variables are positively correlated (r= 0.909, P<0.05). This implies that factors contributing to fuel hike and effect of fuel hike on agricultural production tend to increase together. Therefore, the null hypothesis is rejected, while the alternate hypothesis is accepted.

Table 4. PPMC result showing relationship between factors contributing to fuel hike and effect of fuel hike on agricultural production

Correlates	Mean	StD	r-value	p-value	Decision
Factors	3.746	0.686	0.909	0.000	Significant
Perceived effect	2.504	1.178			

P<0.05
Source: Field Survey, 2025

CONCLUSIONS AND RECOMMENDATIONS

This study concludes that factors contributing to fuel hike were highly recognized by farmers. Also, farmers perceived that fuel hike leads to a reduction in profit margins, increases production cost and causes limited access to inputs and services. The strategy mostly employed in the study in mitigating the effect of fuel hike suggests that organic farming practices, increased use of human labour, increased utilization of locally manufactured tools ($\bar{X}$=1.42) and utilization of traditional storage methods.

Recommendations

The following recommendations were made based on the findings of the study:

1. arable farmers should harness alternative and friendly means of power including solar and steam engines; and
2. relevant stakeholders should also enact policies that promote organic farming among the farmers and prevent fuel hoarding and diversion.

FURTHER STUDY

Other researches can be conducted about the effect of fuel price hike on the socio-economic characteristics of livestock farmers in Nigeria.

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