

## Statistical analysis of perception of populace on the effect of removal of fuel subsidy

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### Abstract

This paper examines perception of populace on the effect of removal of fuel subsidy on Nigeria economy. Questionnaire was administered to 396 respondents for data collection. Potential effects that are considered for effects of fuel subsidy removal on Nigeria economy are business closure, increased government revenue, increased poverty, inflation, reduced budget deficit, unemployment and others. Three categories which are not aware, fairly aware and verily aware were considered on the level of awareness of fuel subsidy removal with their perspective on the question that says in your opinion, what are the potential effects of fuel subsidy removal on the Nigeria economy. Chi-square test was used for the analysis and also multiple chart was used to show awareness of fuel subsidy removal with potential effects on Nigeria economy. Conclusively the result shows that removal of fuel subsidy affects Nigeria economy and poverty is the potential effect of removal of fuel subsidy and it poses more disadvantages than advantages.

**Keywords:** Populace; Questionnaire; Fuel subsidy economy; Perception

### 1. Introduction

A fuel subsidy is a discount offered by the government to the market price of fossil fuels in an effort to lower the price that consumers must pay. When subsidies are in place, consumers would pay less per litre of the petroleum product. Fuel subsidies are a hot issue of controversy everywhere because of their quantity, influence on residents' wellbeing, and capacity to support national budgets Okechukwu and Ovaga (2022)

Nigeria first introduced fuel subsidies in the 1970s in response to the shock of 1973 oil prices. Fuel subsidies were partially eliminated in 1986. Since then, the fuel subsidies have remained in place. In 2012, the government abruptly discontinued its fuel subsidy program. Following the withdrawal, there were large-scale demonstrations aimed at pressuring the government to reinstate the fuel subsidy it had previously eliminated.

Chelminski (2018) discussed that Nigeria is not the only nation to have done away with fuel subsidies; in 1997, Indonesia did the same in response to the Asian financial crisis. This move resulted in a spike in domestic fuel costs, weeks-long violent rioting, and the government's departure in 1998.

The majority of economic activity in Nigerian society is powered by petroleum, specifically Petroleum Motor Spirit (PMS). This is due to the fact that the manufacturing and consuming sectors of the country's economy are both monocultural and because of the increased production costs that would ultimately lead to an increase in total pricing, doing away with the fuel subsidy will have severe economic implications on the entire industry (Adenikinju, 1998).

Since the petroleum sector was deregulated, there has been a constant increase in the price of petroleum due to the ongoing shortage of petroleum products, which deregulation was intended to end. In Nigeria, however, the reverse has

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occurred to expectations that deregulation would create room for competition, which would ultimately result in cheaper pricing and better supply and distribution networks

According to Ozili and Obiora (2023), the government should assess the effects of eliminating gasoline subsidies on people and businesses carefully and offer palliative care as well as other forms of financial assistance to lessen the negative effects on people and businesses.

Many studies have looked at the impact of reforming subsidies on national economies as well as the global social and environmental consequences of eliminating subsidies. Burniaux et al.(2009); Koplow (2009).

According to Omitogun et al. (2021), the economy of Nigeria may emit less carbon dioxide if fuel subsidies are eliminated. Savings from subsidies will be shifted by the government to strategic sectors that can support sustained economic expansion. Economic diversification, social programs, and better infrastructure are all part of the agenda. Subsidies affect market dynamics, Suleiman et al(2024). Gidigbi and Bello (2020) as well as Ogunode, Ahmed, and Olugbenga (2023) proposed using the savings from the elimination of gasoline subsidies to support the growth of other economic sectors.

In this paper, perception of populace on the potential effects of fuel subsidy removal on the Nigeria economy was examined, some of advantages and disadvantages were identify. also.

### *Aim and Objectives*

The aim of this study is to examine the perception of populace on the effect posed by fuel subsidy removal.

### *Objectives*

- To examine the effect of removal of fuel subsidy on the Nigeria economy.
- To identify the advantages and disadvantages of fuel subsidy in Nigeria.

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## **2. Material and methods**

- Chi Square test was used for the analysis to determine if fuel subsidy removal affects Nigeria economy

### **2.1. Test Statistics**

$$\chi^2 = \sum \sum \frac{(o_{ij} - e_{ij})^2}{e_{ij}}$$

### **2.2. Hypothesis statements**

- H<sub>0</sub>: Removal of fuel subsidy does not affect Nigeria economy.
- H<sub>1</sub>: Removal of fuel subsidy affects Nigeria economy.

**Table 1** In your opinion, what are the potential effects of fuel subsidy removal on the Nigeria economy?

Are you aware of the removal of subsidy	Business Others Closures	Increase government Revenue	Increased poverty	Inflation budget	Reduced deficit	Unemployment		Total	Percentage %
Not Aware	5	8	7	11	9	2	3	45	11.4
Fairly Aware	13	16	24	6	22	5	3	89	22.4
Verily Aware	23	36	80	64	44	15	0	262	66.2

**Table 2** Chi-square Result

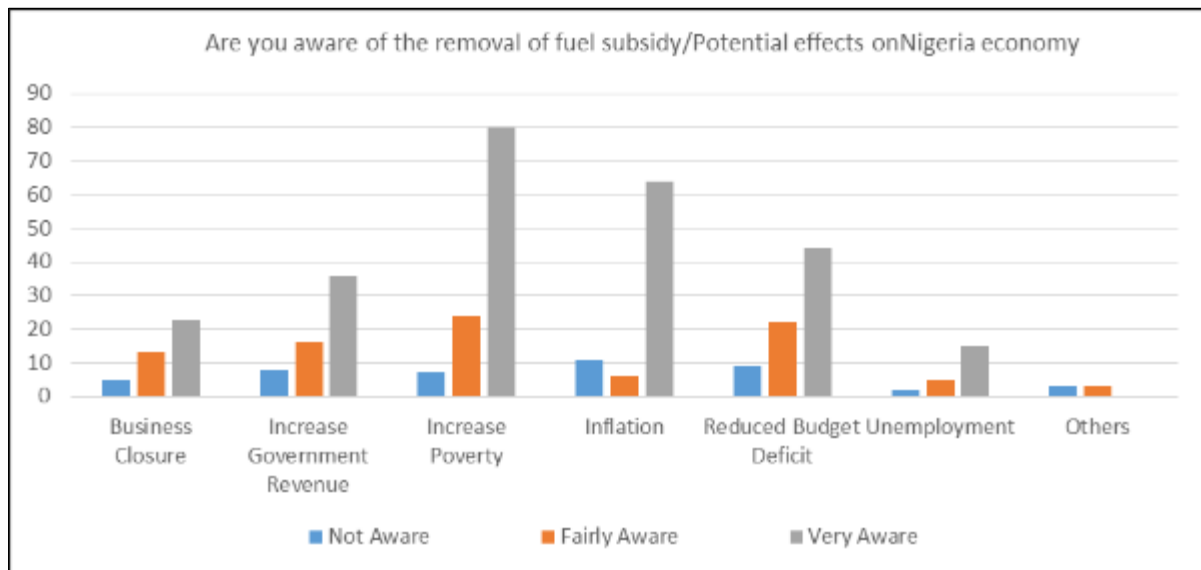
Chi-Square Tests			
	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	33.1219 <sup>a</sup>	2	0.001

Level of Significance  $\alpha = 0.05$  ; Decision Rule: Reject  $H_0$  if P-value <  $\alpha$ -value, otherwise do not reject. Since p-value <  $\alpha$ -value = 0.001 < 0.05), we reject  $H_0$

**Table 3** Populace Perception Percentage on the Potential Effects of Removal of Fuel Subsidy on Nigeria Economy

Populace Status						
Potential Effects	Not Aware	Percentage %	Fairly Aware	Percentage %	Verily Aware	Percentage %
Business Closures	5	11.1	13	14.6	23	8.78
Increase Government Revenue	8	17.8	16	18	36	13.74
Increase Poverty	7	15.6	24	27	80	30.53
Inflation	11	24.4	6	6.7	64	24.43
Reduced Budget Deficit	9	20	22	24.7	44	16.79
Unemployment	2	4.4	5	5.6	15	5.7
Others	3	6.7	3	3.4	0	0%

From table 3, verily aware populace status shows that out of 262 respondents 8.78%(23) have opinion that business closure is the potential effect, 13.74%(36) have opinion increase government revenue is the potential effect, 30.53%(80) have opinion increase poverty is the potential effect, 24.43% (64) have opinion that inflation is the potential effect, 16.79%(44) have opinion that reduced budget deficit is the potential effect, and 5.7%(15) have opinion that unemployment is the potential effect

**Figure 1** A multiple chart shown awareness of fuel subsidy removal with potential effects on Nigeria economy

### 2.3. Advantages and Disadvantages of Fuel Subsidy Removal

Fuel subsidy measures helps economic activities by keeping prices low and controlling inflation and the study on the effects of removal of fuel subsidy on Nigeria economy showed that there are advantages and disadvantage

### *Advantages*

Nigerians daily fuel consumption dropped [Kyari, 2023], Government revenue was increased to fund health, infrastructures and education, and some Nigerians avoid luxury purchases and unnecessary spending of money in social gatherings.

### *Disadvantage*

Smuggling of subsidized petrol to neighbouring countries and selling to them at market prices had resulted in increasing daily consumption of PMS in Nigeria. Kyari (2022),

it has negative impact of another financial burden on Nigerian SMEs, reduce the quantity of things the income of workers can buy with their static income brings that changes in consumption and spending behavior. It raises petrol prices. The general cost of living, inflationary pressures, and availability and affordability of goods and services indirectly affect residents' living standards.

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## **3. Results and Discussion**

Out of 396 respondents, it was found that 11.4% (45), 22.4% (89), and 66.2% (262) were not aware, fairly aware, and verily aware of the removal of fuel subsidy, respectively. The analysis's result indicates that the null hypothesis,  $H_0$ , is rejected because the p-value (0.001) is less than the significance level (0.05). According to table 2 verily aware population status indicates that, out of the 262 respondents, 8.78% (23), believe that a business closure is a potential effect. 30.53% (80) believe that increased poverty is a potential effect, 24.43% (64) believe that inflation is a potential effect, and 13.74% (36) believe that government revenue is a potential effect. 5.7% (15) believe that unemployment is the possible result, while 16.79% (44) believe that a reduced budget deficit is the possible effect.

Also, it is discovered from the multiple bar chart that increase poverty and unemployment are the highest and lowest potential effects of fuel subsidy removal that affects Nigeria economy.

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## **4. Conclusion**

It is concluded that removal of fuel subsidy affects Nigeria economy and increased poverty is the highest potential effect out of all effects. It is also poses more disadvantages than advantages

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## **Compliance with ethical standards**

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### *Disclosure of conflict of interest*

The authors declare that they have no known competing financial interest or personal relationship that could have appeared to influence the work reported in this paper.

### *Statement of informed consent*

Informed consent was obtained from all individual participants included in the study.

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