

Effects of Fuel Subsidy Removal on Consumers Patronage of Petroleum Products in Jos North LGA of Plateau State

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ABSTRACT

The main purpose of this study is to investigate the impact of subsidy removal on consumers' patronage of petroleum products in Jos North LGA of Plateau State. a descriptive research design was adopted for the study, while a structured questionnaire was used to collect data from 356 respondents. A simple linear regression analysis was used to determine the expected relationships between sales promotional tools and consumer purchase. The simple linear regression analysis was adopted for the testing of hypotheses and data collected will be analysed using the Statistical Package for Social Sciences (SPSS) Statistics v27. The results indicated that subsidy removal has a significant economic, social and environmental effect on consumers' patronage of petroleum products in Jos North LGA of Plateau State. The study concluded that economic, social and environmental effects can be experienced in the face of hardship which the citizens are going through and can be seen in the daily rise of living cost. the study recommends that political leaders in government should reconsider subsidy or provide palliatives that will reduce economic, social and environmental effects of subsidy removal on the people.

Keyword: Subsidy, Petroleum products, consumer's patronage, economic, social, environmental

1. INTRODUCTION

It is no longer new, nor is it a news that Nigeria as a nation is divinely favored with a huge abundance of natural resources, but unfortunately, this naturally endowed abundance has not translated to the wealth of the citizens. It is ironic that Nigeria, the most populous black nation and Africa's biggest economy, is a rich nation with poor citizens. Nigeria has the second largest proven oil reserve in Africa at 37.2 billion barrels,

second only to Libya and it is the continent's largest producer of oil (Olisah, 2020) producing about 1.78 million barrels per day in March, 2020. Fuel subsidy is a grant of financial aid from the government used to maintain the low price of petroleum products (Civic Keypoint, 2023). In Canada, the government in 1977 subsidized petroleum products in order to cushion the effect on the living standard of the citizens. However, in 1991 the country parliament removed the subsidy and channel the amount meant for subsidy to building of industries and schools for the people (Olisah, 2020). The Libyan government allocated 5.6 billion Libyan dinars (around 1.2 billion U.S. dollars) to subsidies, with the largest part of expenditure to fuel subsidies, which amounted to 3.4 billion Libyan dinars (740 million U.S. dollars). In Congo, the government cut down the amount allocated to fuel subsidy which was channeled to medical, education and manufacturing (Civic Keypoint, 2023).

In Nigeria, subsidy exists when the government helps the consumers of a particular product to pay a price lower than the prevailing market price of that commodity. Some authors like Adekoya, (2020); Kadiri and Lawal (2016), see it as a kind of market manipulation whereby the government fixes the price of the commodity below its actual market price and pays the difference to the retailers. According to Olisah (2020), crude oil sales contribute about 90% of Nigeria's foreign exchange earnings, 60% of its revenue and 8% of gross domestic product (GDP). Besides, fuel is a very significant factor in production in every aspect of the Nigerian economy, the prominence in the economy cannot be undermined. The Nigeria economy depends largely on petroleum motor spirit (PMS) either for transportation of goods or for services provision, and the removal has affected consumer patronage of many items because it has to be sold in accordance with the prevailing market price, thereby affecting citizens economically, socially and environmentally. Economically, the purchasing power of the Nigerians has reduced because the increase in the pump price of fuel has been transferred to the cost of goods and services, making it difficult for citizens to afford a good living standard. Socially, the subsidy removal has led to an increase in social vices. The inability to meet up with the economic responsibility has made people involved in crime, while the environment has helped in the reduction of carbon to the atmosphere, because many people are unable to purchase the product. Since the removal of fuel subsidy inflation has been on the increase in the country, it has increased poverty in the short term (Raji, 2018).

It has led to immediate pain and hunger for families. At the individual level, the removal of fuel subsidy, without any palliatives, has led to fewer disposable income, shortage of food in the land, limited access to health facilities, and inability to afford basic education in several parts of the country especially in the Northern region of Nigeria. More families may go hungry, more children cry in hunger and more parents cry at their children's despair (Ozili & Obiora, 2023).

The poor and middle-class consumers are witnessing a fall in their purchasing power, and small businesses are finding their profit margins squeezed because they are

facing higher costs and reduced sales volumes, and if they attempt to pass on the cost to consumers, consumers might refuse to buy or they will reduce the quantity purchased, thereby leading to low business patronage. The fuel subsidy removal will further affect the poor vulnerable groups disproportionately if there are no economic safety nets or social assistance programmes that can alleviate the economic hardship caused by the fuel subsidy removal (Ozili & Obiora, 2023). Considering the impact of the subsidy removal, the main purpose of this study is to investigate the impact of subsidy removal on consumers' patronage of petroleum products in Jos North LGA of Plateau State. To achieve this objective, this study hypothesizes that the impact of subsidy removal which hinges on economic, social and environmental implications significantly influence consumers' patronage of petroleum products in Jos North LGA of Plateau State. This study focuses on (1) conceptualizing the various meanings of the variables. 2) Develop a conceptual framework based on these variables. 3) Establish the impact of economic, social and environmental implication on consumers' patronage of petroleum products in Jos North LGA of Plateau State. Based on the challenges outlined as a result of subsidy removal, it can be deduced that removal of subsidy has social, economic and environmental connotation among Nigeria citizens and especially the dwellers in Jos North LGA of Plateau State.

2. Literature review

2.1 Concept of Consumer Patronage

Firms crave consumer' patronage because patronage is the bedrock of the continued existence and success of a business (Nwiepe & Ateke, 2016). Firms are thus always challenged to contrive initiatives that elicit consumer' patronage. It has also been established that caring for current consumers is key to securing their continued patronage. Consumers make decisions daily. Sometimes less thought is given to the decision making process, nonetheless, every decision is affected by basic rational and emotional states of being. Consumers initiate and conclude purchase based on the perceived value of the products. Thus, patronage is influenced by psychological principles developed to harness an understanding of needs.

Consumer patronage is a combination of psychological factors that influence purchase behavior and these factors are considered important by consumers as yardsticks in determining which firm to patronise. It has been measured by various authors in different dimensions, including store traffic flow; willingness, word of mouth, repeat purchase, consumer retention and consumer referrals, consumer satisfaction and referrals. Today's highly competitive environment requires firms to focus primarily on consumer satisfaction, if they seek to win and retain consumer' patronage (Nwulu & Asiegbu, 2015). However, identified terminal values, lifestyles, social class, and media habits as antecedents to patronage. Nwiepe and Ateke (2016), states that consumer patronage may be viewed from three perspectives: unplanned buying, partially planned buying and fully

planned buying; while Nwulu and Asiegbu (2015) suggest that patronage behavior could be measured through patronage intention, patronage action and repeat patronage.

The heterogeneity of the consumer market place has provided the impetus for a continuous search for variables to account for differences in consumer behavior. Customers may make a patronage decision based on the degree of involvement with a particular product classification. The intensity of the interest in the product class may be influenced by patronage behaviour. The patronage behaviour theory examined the effect that unexpected events have in purchase behaviour. Patronage behaviour can also evolve into four outcomes; planned purchase, unplanned purchase, foregone purchase and no purchase. Four types of unexpected events can affect a customer's shopping behaviour.

The events can be socioeconomic (inflation, unemployment), personal (effort, money), product oriented (brand availability, price) and in store efforts (promotion, sales personnel). These unexpected events precede shopping behaviour and patronage (Nyakweba, Andrew, Welsonga & Everlyne, 2015). To attract customer patronage retailers develop their own line of product quality to serve as premium quality in order to boost sales. In this theory it is the retailers that fix the price of the private labelled cosmetics, then package the product to look attractive and customers evaluate the quality of the product based on price when they cannot equate the price of the private labelled cosmetics.

Nyakweba, Andrew, Welsonga & Everlyne (2015), Journal of marketing and consumer research Kenya. Behavioural scientists believe that customer patronage results from an initial product that is reinforced through satisfaction, leading to repeat purchase. Cognitive researchers emphasize the role of mental processes in building consumer patronage. They believe that the consumers engage in extensive problem solving behaviour involving services and attribute compassions, leading to storing customer preferences and repeat purchase.

Customer patronage results from a company's outstanding service (Nkpurukwe et al., 2010). The level of support a brand receives is a major factor in how well they are evaluated. Banks exist primarily to serve customers' needs. Therefore, degree of patronage is the single most important factor in a bank's existence, making all other performance metrics secondary. Customers might be individuals or other businesses that regularly buy from the core business. According to Nadube and Akahome (2017), customer loyalty may be conceptualised as the correlation between a company's sales volume and the amount its customers spend. The term "patronage" describes the act of buying a product (Kenny et al., 2015).

2.2 Concepts of Subsidy and Fuel Subsidy

The word Subsidy is a Latin word called subsidium which means reserve troops, support or assistance; from sub-near + sedēre to sit more at SUB-SIT. Subsidy can therefore be seen as a grant of financial aid from the government used to maintain the

prices of a particular item at a certain level. To subsidies is to sell a product below the cost of production, fuel subsidy, therefore, means to sell petrol below the cost of importation (Raji, 2018). Fuel subsidy can be properly defined as government effort in paying for the difference between the pump price of fuel at the petrol station and the actual cost of importation of the product. So by paying the difference, the government enables fuel to be sold at a lower price so as to help ease the burden of its people, especially lower income group, Fuel subsidy is a grant of financial aid from the government used to maintain the low price of petroleum products (Civic Keypoint, 2023).

Subsidy exists when the government helps the consumers of a particular product to pay a price lower than the prevailing market price of that commodity (Kadiri & Lawal, 2016). Some authors like Agu, Ekwutosi & Augustine (2018), see it as a kind of market manipulation whereby the government fixes the price of the commodity below its actual market price and pays the difference to the retailers. In this case, the government fixes the pump price of fuel below the actual market price and the difference is paid to the importers and marketers by the government. Removal of fuel subsidy simply means the government is not paying for the difference between pump price and the actual cost of importing fuel anymore. It technically means full deregulation of the downstream sector to pave way for vibrant competition by other interested investors (Raji, 2018). With the removal of fuel subsidy, fuel will have to be sold in accordance with the prevailing market price based on the actual cost of importation, and this has following implications. Subsidies are being phased out in Nigeria, with serious economic consequences for the country's long-term prosperity. Governments frequently employ subsidies to assist certain businesses or to cut the cost of important products and services for consumers. One of the most noteworthy subsidies in Nigeria has been on petroleum products, notably fuel. The following are the economic implications of subsidy removal:

i. **Debt reduction**

Fuel subsidy payments have been criticized for having a negative impact on government borrowing (Okongwu & Imoisi, 2022). The Nigerian government has been borrowing from the beginning of the fuel subsidy system, and the borrowing exacerbated throughout the 2016 recession and the 2020 COVID-19 pandemic (Ozili, 2022). In 2022, the government borrowed from the Central Bank of Nigeria (CBN) on a regular basis for debt repayment and subsidy payment. At present, the government owes the Central Bank \$22.7 trillion, which was just securitized by the FG with national assembly consent in 2023.

The recent removal of fuel subsidies suggests that government borrowing from the Central Bank would cease, since the cash saved from the removal of fuel subsidies will be available for the government to employ to fulfill its public expenditures (Ozili & Obiora, 2023). This move indicates a shift towards reducing reliance on borrowing from the Central Bank and finding alternative sources of funding for public expenditures. It

remains to be seen how this decision will impact the government's overall debt and financial stability in the long run.

ii. High inflation

Another negative macroeconomic impact of removal of fuel subsidies is a rise in inflation (Mohammed et al., 2020). The removal of fuel subsidies caused the price of petrol in Abuja to climb from a subsidized price of N190 in May 2023 to an unsubsidized price of N537 in June 2023 and 617 in July 2023. Meanwhile, due to high transportation costs, the price of gas in the far north, such as Borno State, might soar above N600. The implication is that the prices of most consumer and industrial items produced or delivered using fuel will skyrocket (Ozili & Obiora, 2023).

Bread prices rise, as will the cost of local transportation, making it difficult for low-income individuals and families to pay. The effect will be felt by both the affluent and the poor, but as is often the case, the poor will suffer the most since their purchasing power will be significantly reduced. The Federal Government's late deployment of palliatives to assist the poor and households affected by the rise in the price of necessary commodities and services immediately following the termination of fuel subsidies may exacerbate the inflation effect. This delay in providing assistance to the poor and affected households may lead to a further widening of the wealth gap, as those who are already financially vulnerable will struggle even more to meet their basic needs. Additionally, the lack of immediate relief measures could potentially result in social unrest and dissatisfaction among the affected population.

iii. Increased poverty and vulnerability

The removal of fuel subsidies has a negative microeconomic impact in that it would raise poverty in the short term (Raji, 2018). Families will experience instant discomfort and hunger as a result. Individually, the elimination of fuel subsidies, without any palliatives, might result in less disposable money, less food on the land, less medicine for ill people, and an inability to pay for basic schooling in certain sections of the country, particularly in Nigeria's northern region. More families will be hungry, more children will weep because they are hungry, and more parents will cry because their children are depressed.

Poor and middle-class customers' purchasing power will diminish, and small firms' profit margins will be squeezed as a result of rising expenses and lower sales volumes. Furthermore, the lack of funds may lead to a decline in infrastructure development, affecting transportation systems, healthcare facilities, and educational institutions. This could result in reduced access to essential services for the general population, exacerbating the already challenging conditions faced by vulnerable communities. Additionally, the economic strain may also lead to increased social inequality and a widening wealth gap, further deepening societal divisions.

iv. Fiscal sustainability

The removal of subsidies can improve fiscal sustainability by reducing the budget deficit. Subsidies often contribute to budget shortfalls, and their removal can help the government better manage its finances and reduce its reliance on borrowing. This, in turn, can lead to lower debt levels and interest payments, which are crucial for long-term sustainable development. Additionally, the removal of subsidies can create a more efficient allocation of resources in the economy. When subsidies are in place, they can distort market prices and incentivize overconsumption or production of certain goods or services. By eliminating these subsidies, market forces can operate more freely, leading to a more balanced and efficient use of resources. This can promote economic growth and stability in the long run.

v. Protest and social unrest:

Another impact of removing fuel subsidies is the possibility of demonstrations and societal instability (Houeland, 2020). Protests might erupt if the price of fuel products rises. If prices continue to rise, impoverished households will be forced to resort to protests and social unrest in order to persuade the government to reverse the reduction of fuel subsidies. This can lead to disruptions in public services and a decline in productivity as businesses struggle to operate amidst the chaos. Additionally, the government may face increased pressure to address the concerns of the population, potentially diverting resources and attention away from other important issues such as infrastructure development or healthcare

Petroleum products in general play a critical role in the economic development of Nigeria. Premium Motor Spirit (PMC) or petrol serves as an intermediate input to production, and thus changes in its price, quantity or quality affect the profitability of production and productivity of other factors of production. Given the role of fuel in the economy, most governments in Africa-especially Nigeria-intervene extensively in the oil market. The relationship between petrol price changes (price hike) and distribution in Nigeria is an area that was not given direct attention by scholars. Nevertheless, many authors researched on several related topics and came up with different findings. For instance, econometric results provided strong evidence that the price of oil and its refinery products are co integrated. The author argued that in terms of long-run adjustment, the oil price is found to be weakly exogenous and many factors are responsible for the adjustment towards the long-run equilibrium.

2.3 THEORETICAL FOUNDATION

2.3.1 Human capital theory

Human capital theory was developed by Gary Becker and Theodore Schultz in the 1950s and 1960s and has since become a fundamental concept in labour economics and education economics. Human capital theory thus describes human characteristics that are seen to be valuable in the manufacturing process. Human capital theory is an

economic and sociological concept that views individuals as investments in their own education and training. The theory suggests that people can increase their productive capacity and earning potential by acquiring and developing skills, knowledge, and expertise. Human capital theory may be used to analyze the economic ramifications of the removal of fuel subsidies on Nigeria's long-term growth by concentrating on how the choice impacts the country's labour force, productivity, and general economic well-being. According to human capital theory, investments in education, training, and health increase an individual's productivity and earning potential. When fuel subsidies are abolished, fuel prices frequently rise, resulting in greater transportation expenses for workers. As a result, in order to maintain their level of life, workers may seek greater salaries. This can have an influence on labour market dynamics since both employees and employers negotiate salaries, which could contribute to inflationary pressures.

2.4 HYPOTHESES DEVELOPMENT AND CONCEPTUAL FRAMEWORK

2.4.1 Fuel Subsidy Removal and consumer patronage

Fuel subsidy can be properly defined as government effort in paying for the difference between the pump price of fuel at the petrol station and the actual cost of importation of the product. So by paying the difference, the government enables fuel to be sold at a lower price so as to help ease the burden of its people, especially lower income group, Fuel subsidy is a grant of financial aid from the government used to maintain the low price of petroleum products (Civic Key point, 2023). Subsidies are being phased out in Nigeria, with serious economic consequences for the country's long-term prosperity. Governments frequently employ subsidies to assist certain businesses or to cut the cost of important products and services for consumers. One of the most noteworthy subsidies in Nigeria has been on petroleum products, notably fuel. This leads us to the formulation of the following hypotheses:

H0₂: Fuel Subsidy Removal has no significant effect on consumer's patronage of petroleum products in Jos North LGA of Plateau State.

Ha₂: Fuel Subsidy Removal has significant effect on consumer's patronage of petroleum products in Jos North LGA of Plateau State.

2.4.2 Economic perspective and consumer patronage

The issue of petroleum products pricing has always been sensitive in Nigeria that it ought to always be carefully and tactfully handled. Due to low income of the people and poor infrastructural development especially in transportation, communication system and electric power system, the effect of petroleum products price increase is easily felt by people. For five decades now, Nigeria's economic policies, growth and other related activities have been largely influenced by the oil industry. To say that the economy is heavily dependent on the oil industry will amount to an understatement as the oil industry is nothing short of a life-blood for the Nigerian economy (Adelabu, 2012).

The issue of fuel subsidy removal has been in Nigeria for some decades of which different governments have tried to implement the reform but were unsuccessful due to fierce public demonstration of disapproval. This has often led to mass protests by the citizens and the civil society who regard such policy as a measure to further subjugate and impoverish the masses. Notwithstanding, it seems that the longer the subsidies have existed, the more entrenched the opposition to reducing them. This leads us to the following hypotheses:

H0₂: Fuel Subsidy Removal has no significant economic effect on consumer's patronage of petroleum products in Jos North LGA of Plateau State.

Ha₂: Fuel Subsidy Removal has significant economic effect on consumer's patronage of petroleum products in Jos North LGA of Plateau State.

2.4.3 Social perspective and consumer patronage

The social impacts of fuel subsidy removal include public protests, and social inequality. Historically, fuel subsidy removal has triggered protests and social unrest due to the immediate impact on citizens' lives. Protests can disrupt economic activities and challenge political stability. The removal of fuel subsidies can disproportionately affect low-income and vulnerable populations, exacerbating income inequality and social disparities. Fuel subsidy removal impacts on government finances; has implications on economic diversification and induce foreign exchange pressure.

Eliminating fuel subsidies releases funds that can be redirected to other sectors such as education, healthcare, and infrastructure. However, effective budget reallocation requires transparent and accountable governance to ensure that these funds are optimally utilized. The removal of fuel subsidies could nudge the government and private sector to invest more in non-oil sectors, helping to diversify the economy and reduce dependence on oil revenue. Nigeria imports a significant portion of its refined petroleum products (Amponsah, Asenso, & Oteng-Abayie, 2020). Higher fuel prices increase import costs, which could contribute to foreign exchange pressure and a weaker local currency.

Similarly, premium motor spirit subsidy removal commands negative environmental political impacts. Higher fuel prices can incentivize consumers to use fuel more efficiently and consider alternative energy sources, which could have positive environmental implications. The government's handling of fuel subsidy removal can impact its popularity and legitimacy (Amponsah, Asenso, & Oteng-Abayie, 2020). Public opposition may influence political decisions. Removing fuel subsidies can signal the government's commitment to fiscal discipline and economic reform, potentially boosting investor confidence in the long-term stability of the economy. The removal of subsidies could encourage investments in domestic refining capacity, reducing Nigeria's reliance on imported refined products. Over the long term, removing fuel subsidies can contribute to a more sustainable economic growth trajectory by allowing the government to invest

in critical sectors, infrastructure, and human capital development his leads us to the following hypotheses:

- H03:** Fuel Subsidy Removal has no significant social effect on consumer's patronage of petroleum products in Jos North LGA of Plateau State.
- Ha3:** Fuel Subsidy Removal has significant social effect on consumer's patronage of petroleum products in Jos North LGA of Plateau State.

2.4.4 Environmental perspective and consumer patronage

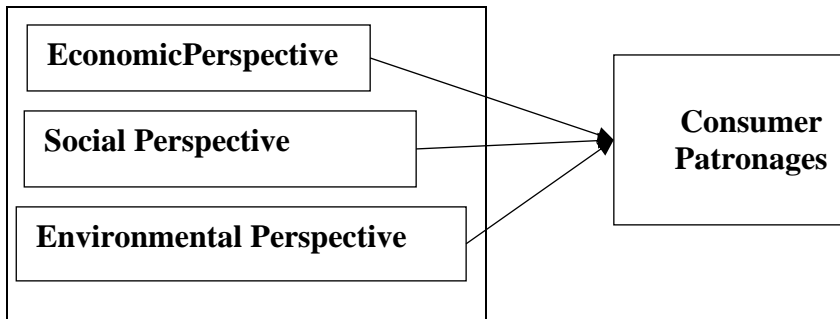
The environment has gained significant attention among researchers in recent years. The argument is yet to reach an agreement among scholars as to diversify the source of energy supply in the economy from fossil fuel to a cleaner source. Market environments represent a very important sector of the Nigerian economy as they represent a home for Nigerian fortunes. This is evidenced by the fact that these market environment and communities produce virtually all the food products in the country, posses both human and raw materials for industrial processes, provide shelter in times of national crises, preserve the cultural values in the society to mention but a few (Raji, Muhammed, Joseph, Abdulbaqi, Adeshina & Sulaimon, 2017). Dwellers suffer meaningful development and are affected by many of the economic policies in the country. This is because they are less vocal, far away from the government and as such cannot make their voices heard. Yet, they still possess the majority population in a developing nation like Nigeria where over 70% of the country's population. This leads us to the following hypotheses:

- H04:** Fuel Subsidy Removal has no significant environmental effect on consumer's patronage of petroleum products in Jos North LGA of Plateau State.
- Ha4:** Fuel Subsidy Removal has significant environmental effect on consumer's patronage of petroleum products in Jos North LGA of Plateau State.

2.6 conceptual Framework

The research framework depicts the dependent and independent variables with their dimensions: fuel subsidy removal as independent variables relationship with consumer patronage as dependent variable. The independent variables have a direct relationship with consumer patronage. These factors ignite the consumers to buy, meaning that fuel subsidy removal construct (economic, social and environmental perspective) will lead to consumer patronage of petroleum products.

Fuel Subsidy Removal



SOURCE: Authors Model (2024)

Figure 1: Propose a Conceptual Framework of subsidy removal and consumer patronage.

2.5 EMPIRICAL STUDIES

Omotosho (2015) investigated the political economy of fuel subsidy removal in Nigeria, which found that the removal of fuel subsidies had a negative impact on the poor and vulnerable segments of the population. Iwuchukwu and Nwankwo (2017) investigated effects of fuel subsidy removal on small and medium scale enterprises in Nigeria and found that the removal of fuel subsidy had a positive impact on small and medium scale enterprises (SMEs) in Nigeria. The study found that the removal of the subsidy led to a decrease in the cost of transportation and production, which in turn led to an increase in the profitability of SMEs. The study recommends Premium motor spirit (fuel) subsidy removal in Nigeria has varying implications for businesses depending on their size and operational capacity. Large businesses may have the resources to cushion the impact, while medium-sized and small businesses face more significant challenges in maintaining profitability and sustainability. Government support, targeted policies, and access to financial resources are crucial to help businesses, especially smaller ones, navigate the challenges posed by higher fuel prices. Afolabi, Fernando and Bottiglieri (2017), investigated the effect of premium spirit subsidy removal on economic growth in Nigeria and found that the removal of fuel subsidy in Nigeria had no significant impact on economic growth. The study used a difference-in-differences approach to compare the growth of the Nigerian economy before and after the removal of the subsidy. Adewumi et al. (2018) examined the effect of fuel subsidy removal on small and medium-sized enterprises in Nigeria and they found that the removal of fuel subsidy had a negative impact on small and medium-sized enterprises (SMEs) in Nigeria. The study used a survey of SMEs to collect data on their operations before and after the removal of the subsidy. Results reveal that gender differences in affect patronage on e-banking patronage and satisfaction in Nigeria are low. At this point, the researcher recommends improvement in service delivery with respect to consistency in the application of standards and timeliness. Ikpefan, Olaolu, Omarkhanlen, Osuma, & Evbuomwan (2018)

suggests that since marketing attracts its target customers through advertising and promotional efforts, an association is definitely created that makes the exchange of goods and services very possible. The major aim of the research was to conduct a thorough investigation into the level of influence which marketing of services provided by deposit money banks in Nigeria has on customers' loyalty and patronage. The study randomly chose five (5) banks under the classification of deposit money banks in Nigeria namely United Bank for Africa (UBA), Guarantee Trust Bank (GTB), Eco Bank Plc, First Bank Plc and Skye Bank Plc. The study deployed primary data in its analysis which were collected through structured questionnaires. The study adopted a linear regression model to enable it to measure the effect of marketing strategies adopted by the deposit money banks on customers' patronage and loyalty. Findings reveal that an aggressive and well-packaged marketing strategy has a positive and very significant impact on customer loyalty and patronage.

Ogundele, Akingbade, Saka, Elegunde and Aliu, (2019), determined the impact of fuel subsidy removal on macroeconomic variables in Nigeria and found that the removal of fuel subsidy had a neutral impact on macroeconomic variables in Nigeria. The study used a vector auto regression model to analyze the impact of the subsidy removal on inflation, interest rates, and exchange rates. From the literature reviewed, it can be observed that studies regarding the implications of premium spirit subsidy removal on large, medium, small sized businesses and the economy of Nigeria are mixed and therefore remained inconclusive. This suggests that more empirical research still needs to be conducted on the subject matter with a view of bridging the gaps in literature.

3.1 METHODOLOGY

In this study descriptive research design was adopted, this design is chosen for the reason that allows the researcher to gather information on the variables of the study from a relatively large population at the same time and at a less cost. This design was used because the study entails a detailed explanation of the effect of subsidy removal on consumer's patronage of petroleum product in Jos North LGC of Plateau State. The population of a study is the total of objects being studied and to which the conclusions of the result will apply. According to Creswell (2017), population of a study can be classified to which include listed population. The study population comprises of the customer of PMS in Jos, which entails a large population. According to Nigeria Union of Petroleum and Natural Gas Worker Jos-metropolis Branch (2023), Jos North LGC had a total of 56 fuel filling station, with infinite consumers with the total population of Jos North LGC of Plateau State which is 643,200.

The sampling determination technique for this study is Taro Yamane. The formula for calculating sampling size was formulated according to scientific a Yamane (1967) to determine the sample from a given population. The formula is as below;

$$n = \frac{N}{1 + N(e^2)}$$

Where:

n = Sample size

N = Population

e² = margin of error

$$n = \frac{643,200}{1 + 643,200(0.05^2)}$$

$$n = \frac{643,200}{643,201(0.0025)}$$

$$n = \frac{643,200}{1145.2525}$$

$$n = 399.99$$

Therefore, sample size is 400

3.2 MEASURES

The study collected data from primary source. Primary data is defined as data that has not been previously published. The data was derived from new or original research study and collected at source, and information is obtained directly from first-hand sources by means such as surveys, observation or experimentation (Khan, 2017). The self-administered close-ended questionnaires were distributed to the respondents personally by the researcher, the questionnaire was adapted the questionnaire from the study of (Ozili & Obiora, 2023), on removal of subsidy dimension (economic effect, social effect, environmental effect), while Olisah (2020), was adapted to measure dependent variable which consumers patronage.

3.3 METHOD OF DATA ANALYSIS

A simple linear regression analysis was used to determine the expected relationships between sales promotional tools and consumer purchase. The simple linear regression analysis was adopted for the testing of hypotheses and data collected will be analysed using the Statistical Package for Social Sciences (SPSS) Statistics v27. Reasons for adopting simple linear regression analysis is to test the effect of each dimension on consumers patronage on the side of independent variables, since it is an analysis of the association between two or more independent variables on a single, interval-scaled dependent variable.

4.1 RESULTS AND DISCUSSION

Data was presented in tables to provide a concise and clearer meaning to the information gathered from respondents. A total of four hundred (400) copies of questionnaire were administered and only three hundred and forty-four (356) questionnaires were retrieved giving a sample response rate of 89.2%.

4.1.1 Demographic Information of Respondents

Table 1 show that 123 respondents representing 34.5% are Male, while 277 respondents representing 77.8% are female. The table also shows that 89 respondents which is representing 25% are within the ages of 18-24 years, 82 respondents which is representing 23% are within the ages of 25-30years, 69 respondents which is representing 19.5% are within the ages of 31-35 years, 88 respondents which is representing 24.7% are above 41years. Based on marital status for married 116 (32.6%), for single 127 (35.8%), for divorced 32 (8.9%), for widowed/widower 81 (22.7%).

Table 1: Demographic Distribution of the Respondents

SEX		
Feature	Frequency	Percentage
Male	123	34.5
Female	277	77.8
Total	356	100.0
Age Range	Frequency	Percentage
18 – 24yrs	89	25.0
25- 30yrs	82	23.0
31- 35yrs	69	19.3
36-40yrs	88	24.7
Above 41 yrs	28	7.8
Total	356	100.0
Marital Status	Frequency	Percentage
Married	116	32.6
Single	127	35.8
Divorce	32	8.9
Widow/widower	81	22.7
Total	356	100.0

Source: SPSS 26.0 (2024)

4.2 DATA ANALYSIS AND TEST OF HYPOTHESES

4.2.1 Restatement of Hypothesis

- H0₁:** Fuel Subsidy Removal has no significant effect on consumer's patronage of petroleum products in Jos North LGC of Plateau State.
- H0₂:** Fuel Subsidy removal has no significant economic effect on consumer's patronage of petroleum products in Jos North LGC of Plateau State.
- H0₃:** Fuel Subsidy Removal has is no significant social effect of subsidy removal on consumer's patronage of petroleum products in Jos North LGC of Plateau State.
- H0₄:** Fuel Subsidy Removal has no environment effect significance on consumer's patronage of petroleum products in Jos North LGC of Plateau State.

Table 2: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F Change	Sig.
1	.891 ^a	.794	.792	.85989	75.339	.000

a. Predictors: (constant), economic, social, environment

b. Dependent variable: consumer's patronage

Source: SPSS v.26 (2024)

Table 2. Demonstrates a direct relationship between the dependent (consumer's patronage) and independent variable (subsidy removal dimensions). The results indicate a strong effect of determination between media advertising (economic, social and environment) and consumer's patronage ($R=.891$). Further, as R Square is given as .794, this implies that only 0.79.2% of the variability in consumer's patronage is explained by the variability in subsidy removal dimensions, leaving 20.8% as explained by other factors. This implies that the regression of subsidy removal dimensions on consumer's patronage was statistically significant at $p<0.000$.

Table 3: ANOVA^a

ANOVA ^a					
Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	4991.915	5	1247.979	89.339	.001 ^b
Residual	364.656	351	1.650		
Total	5356.571	356			
a. Dependent Variable: consumer's patronage					
b. Predictors: (Constant), economic, social and environment					

Source: SPSS v.26 (2024)

From the ANOVA Table 3, the F-test result and the P-Value tests whether the overall regression model is a good predictor and the probability of this result occurring by chance or not. In this regard, the F-test result is 89.384 with a significance of less than

0.000. This means, the probability of those results occurring by chance is < 0.001 . And it can be concluded as the overall regression model is significant $(5, 351) = 89.384, P < 0.001$, (that is the regression model is a good fit to the data). Therefore, the significant effect of consumer's patronage is influenced by the three dimensions of subsidy removal that was identified in this study. In other words, independent variables (economic, social and environment) significantly predict the dependent variable (consumer's patronage).

Hypothesis One

The formulated hypothesis states that fuel subsidy removal has no significant effect on consumer's patronage of petroleum products in Jos North LGC of Plateau State. However, the regression results showed that fuel subsidy Removal has significant effect on consumers patronage at $P\text{-value} = 0.001$. Therefore, the null hypothesis one (H_{01}) which states that that fuel subsidy removal has no significant economic effect on consumers patronage of petroleum products in Jos North LGC of Plateau State was rejected, while the alternative hypotheses which states that fuel subsidy removal has significant effect on consumer's patronage of petroleum products in Jos North LGC of Plateau State was accepted as reflected in table 4.

Table 4: Coefficient for Hypothesis One Fuel Subsidy Removal effect on Consumer's Patronage

Model	Unstandardized Coefficients		Standardized Coefficients		T	Sig.
	B	Std. Error	Beta			
(Constant)	1.211	.359			.371	.001
Economic	1.149	.182	.355		.322	.000
Social	1.268	.152	.384		.347	.000
Environment	1.751	.347	.499		.039	.000

a. Dependent Variable: consumer's Patronage

Source: SPSS v.26 (2024)

Table 4 shows multiple regression analysis that was performed in order to evaluate the combined effect of fuel subsidy removal on consumer's patronage of petroleum products in Jos North LGC of Plateau State. In the above regression model, when the fuel subsidy removal is constant at zero, patronage is 31.211. The high beta coefficient of 31.211 of the constant term meant that besides the study variables, there were other factors which might still explain the consumer's patronage. The constant was also significant and therefore reflected that chances of multicollinearity were not present among the variables as the p-value was 0.001. The coefficients for economic, social and environment were 0.355, 0.384 and 0.499 respectively. This meant that a unit change in economic, social and environment resulted in 0.355, 0.384 and 0.499 change in the

consumer's patronage respectively. In coming up with the final model all the significant variables; economic, social and environment were retained.

Hypothesis Two

The formulated hypothesis states that fuel subsidy removal has no significant economic effect on consumer's patronage of petroleum products in Jos North LGC of Plateau State. However, the regression results showed that fuel subsidy Removal has significant economic effect on consumers patronage at P-value = 0.001. Therefore, the null hypothesis two (H_{02}) which states that that fuel subsidy removal has no significant economic effect on consumers patronage of petroleum products in Jos North LGC of Plateau State was rejected, while the alternative hypotheses which states that fuel subsidy removal has significant economic effect on consumer's patronage of petroleum products in Jos North LGC of Plateau State was accepted as reflected in table 5.

Table 5: Coefficient for Hypothesis Two Fuel Subsidy Removal economic effect on Consumer's Patronage

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	1.211	.359		.371	.001
Economic effect	.149	.182	.355	.322	.000

a. Dependent Variable: Consumer's Patronage

Source: SPSS v.26 (2024)

Hypothesis Three

The formulated hypothesis states that fuel subsidy removal has no significant social effect on consumer's patronage of petroleum products in Jos North LGC of Plateau State. However, the regression results showed that fuel subsidy removal has significant social effect on consumers patronage at P-value = 0.000. Therefore, the null hypothesis three (H_{03}) which states that fuel subsidy removal has no significant social effect on consumers patronage of petroleum products in Jos North LGC of Plateau State was rejected, while the alternative hypotheses which states that fuel subsidy removal has significant social effect on consumers patronage of petroleum products in Jos North LGC of Plateau State was accepted, as reflected in table 6.

Table 6: Coefficient for Hypothesis Three Social Effect and Consumer's Patronage

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	1.211	.359		.371	.001
Social	.268	.152	.384	.347	.000

a. Dependent Variable: Consumer's Patronage

The formulated hypothesis states that fuel subsidy removal has no significant environmental effect on consumer's patronage of petroleum products in Jos North LGC of Plateau State. However, the regression results showed that fuel subsidy removal has significant e was significant at P-value = 0.000. Therefore, the null hypothesis four (H₀₄) which states that Removal of subsidy has no environment effect significance on consumers patronage of petroleum products in Jos North LGC of Plateau State was rejected, while the alternative hypotheses which states that removal of subsidy has significant environment effect on consumers patronage of petroleum products in Jos North LGC of Plateau State was accepted, reflected in table 7.

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
	(Constant)	1.211	359		.371	.001
	Environment	.751	347	.499	5.039	.000

Source: SPSS v.26 (2024)

The findings of hypothesis one indicated that there is a significant effect between economic effect and consumer's patronage. However, the findings revealed that economic effect affects customers' patronage of petroleum products in Jos North LGC of Plateau State.

The findings of hypothesis two indicated that there is a significant effect between economic effect and consumer's patronage. However, the findings revealed that economic effect affects customers' patronage of petroleum products in Jos North LGC of Plateau State. The findings of this study was in agreement with the study done by Afolabi, Fernando and Bottiglieri (2017), who found that the removal of fuel subsidy in Nigeria had no significant impact on economic growth, the removal of fuel subsidy had a negative impact on small and medium-sized enterprises (SMEs) in Nigeria.

The findings of hypothesis three indicated that there is a significant effect between social effect and consumer's patronage. However, the findings revealed that removal of

subsidy affected social activities of the people which withdrew people from buying petroleum products in Jos North LGC of Plateau State. The findings of this study was in agreement with the study done by Adewumi et al. (2018) examined the effect of fuel subsidy removal on small and medium-sized enterprises in Nigeria and they found that the removal of fuel subsidy had a negative impact on small and medium-sized enterprises (SMEs) in Nigeria. Also that the removal of fuel subsidies in Nigeria would lead to a decrease in fuel consumption and an increase in government revenue. However, the study also found that the removal of fuel subsidies would have a negative impact on the poor and vulnerable segments of the population.

Environment effect and Consumer's Patronage

The findings of hypothesis four indicated that there is a significant effect between environment and consumer's patronage. However, the findings revealed that environmental effects influence customer patronage of petroleum products in Jos North LGC of Plateau State. The findings of this study was in agreement with the study done by Omotosho (2015), who found that the removal of fuel subsidies in Nigeria led to an increase in the cost of transportation, food, and other essential goods and services. The research also found that the removal of fuel subsidies had a negative impact on the poor and vulnerable segments of the population.

5.1 CONCLUSION

Based on the objective one which focused on evaluating the effect of fuel subsidy removal on consumer's patronage of petroleum products in Jos North LGC of Plateau State. This is met with the finding which states that fuel subsidy removal has significant effect on consumer's patronage of petroleum products in Jos North LGC of Plateau State.

Based on the objective two which focused on evaluating the economic effect of fuel subsidy removal on consumer's patronage of petroleum products in Jos North LGC of Plateau State. This is met with the finding which states that fuel subsidy removal has significant economic effect on consumer's patronage of petroleum products in Jos North LGC of Plateau State.

Based on the objective three which states to examine the social effect of subsidy removal on consumers patronage of petroleum products in Jos North LGC of Plateau State. This is met with the finding which states that fuel subsidy removal has significant social effect on consumer's patronage of petroleum products in Jos North LGC of Plateau State.

Lastly, the fourth objectives states that to determine the environmental effect of fuel subsidy removal on consumers' patronage of petroleum products in Jos North LGC of Plateau State. This is met with the finding which states that fuel subsidy has a significant environmental effect on consumer's patronage of petroleum products in Jos North LGC of Plateau State.

5.2 RECOMMENDATIONS

Having looked into the effect of subsidy removal on consumer's patronage of petroleum product in Jos North LGC of Plateau State, the following recommendations are made;

- i. The research clearly showed how economic dimensions affected customers' purchasing of petroleum products, the study suggested that the government should make provision to cushion the economic effect on masses.
- ii. Government should provide palliatives that will reduce the social effects of subsidy removal on the people.
- iii. Thus, the study recommends that the government should partner with other NGOs to solve the environmental effect of subsidy removal by making sure there are mechanisms put in place that counter the environmental aspect of the subsidy removal.

5.3 LIMITATIONS AND DIRECTION FOR FUTURE RESEARCH

The study was conducted only in Jos North LGA of Plateau State, and among only users of petroleum products, which stands as a barrier to other Local Government Areas within Plateau State, making the findings not to be generalized. Attitude of participants to completing the questionnaire stands as a barrier towards the completion of the study. Future studies can explore the impact of subsidy removal on the manufacturing industries and household and expand the population size.

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