THE IMPACT OF FUEL PRICE INCREASE ON THE NIGERIAN ECONOMY

BY

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BEING A PROJECT SUBMITTED TO THE POST GRADUATE SCHOOL OF THE AHMADU BELLO UNIVERSITY, ZARIA, IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF A MASTERS DEGREE IN BUSINESS ADMINISTRATION (MBA)

DEPARTMENT OF BUSINESS ADMINISTRATION
FACULTY OF ADMINISTRATION
AHMADU BELLO UNIVERSITY, ZARIA, NIGERIA

DECEMBER, 1995

DECLARATION

I hereby declare that all information used in this project were obtained from personal research and extensive readings and all references are duly referred to.

All mistakes in thoughts or sequence or omissions are entirely mine.



OLASUPO A. J.

24/4/98

DATE

CERTIFICATION

This project report/thesis/dissertation entitled **"THE IMPACT OF FUEL PRICE INCREASE ON THE NIGERIAN ECONOMY"** meets the regulations governing the award of degree of Masters of Business Administration (MBA) of Ahmadu Bello University, Zaria, and is approved for its contribution to knowledge and literary presentation.

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DEDICATION

With much love and gratitudes to Almighty Allah, I dedicated this research project to my beloved wife, **Jibike** and our children **Olamide, Damilola and Dolapo**. This is in token compensation for the cost of the time I gave to reading, lectures and this research project in particular when they should have been attended to. They have all endured, participated morally and financially and encouraged all through the course of this programme, in anticipation of a better future.

May Almighty Allah shower His blessings on them.

AND ALSO

To the memory of a departed bossom friend and uncle:

Late Alhaji Lukman Kayode Lawal

and

Late Alhaji Suleiman Salaudeen

May Almighty Allah grant them eternal rest.

ACKNOWLEDGEMENT

My greatest and deepest gratitudes go to the Almighty Allah for His infinite mercy and grace that saw me through the programme.

I am very grateful to my Project Supervisor, **Mr. A. B. Akpan**, for his generous assistance, patience, review and friendly advises during the research period. I most appreciably acknowledge the rich intellectual association which I have had with him before and during the project work.

I am also highly indebted to **Dr, Omoniwa** who is the Head of English Department, Federal College of Education Zaria, for finding time to read, correct and gave some helpful criticism on the draft. The acknowledgement will not be complete without the names of people like **Dr. Sheikh Abdulai, Chief Pius Agboola, Mr. Silva, Mallam Maiturari, Mr. Onu,** and **Mallam Sanni** for their immense advice and encouragement given during the programme.

To colleagues, friends and relatives such as **Kayode Adejumo, Wilson Oni, Frank Amali, Muktar, Sister Mary Yeye, Mr. Briggs, Engineer & Mrs. Adeoye, Dr. & Mrs. Alalade, Dr. & Mrs. Alabi, Mr. & Mrs. Wasiu Alade, Mr. & Mrs. Jide Salami, Mr. & Mrs. 'Bode Ariyibi, Mr. Jide Ariyibi, Miss Ronke Salaudeen** and all those whose names I cannot mention but have assisted or contributed in one way or the other in creating an atmosphere of friendliness and cheer to work. I say a big **"Thank you"**.

Finally, my love and gratitude goes to the entire members of my family who stood by me when I needed someone to lean on.

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ABSTRACT

The Nigerian economy has been experiencing depression since the beginning of this decade. Its over-independence on the oil sector has made it to feel the impact of the general world economic recession more than most developing countries. To worsen the situation, the world oil market is also bedeviled with price instability and low demand. In an attempt to bail the economy out of the wood, structural adjustment programmes were introduced One of these is the fuel price increase on the locally consumed petroleum products.

This study investigated the impacts of the policy on the Nigerian economy. The method employed was to seek the opinions of four major categories of petroleum product consumers through questionnaire. The questions therein touched on different anticipated effects, on which respondents were to declare agreements or otherwise and the extent.

The result showed that the policy was responsible for increase in transport fares, inflationary, affecting the industries adversely but has not created unemployment. The policy has affected Nigerians irrespective to their income level.

Further studies could still be done on this topic in area of considering the impacts on other economic sectors unfocussed on in this study. Among these are foreign trade and foreign earnings of the country. Also the study could be carried out in some other states of the Federation

TABLE OF CONTENTS

Title page		i)
Declaration		ii)
Certification		iii)
Dedication		iv)
Acknowledgement		v)
Abstract		vi)
Table of Contents		vii)
List of Tables		ix)
List of Appendices		x)
CHAPTER ONE INTRODUCTION		
1.0 Introduction		1
1.1 Purpose of the Study ...		3
1.2 Statement of Problems ...		4
1.3 Scope and Limitation of the Study ...		5
1.4 Significance of the Study ...		6
1.5 Outline of the Study ...		6
1.6 Explanation of Terms ...		7
1.7 End Notes on Chapter One ...		7
CHAPTER TWO LITERATURE REVIEW		
2.1 Introduction		9
2.2 Nigeria and the Petroleum Industry ...		9
2.3 Nigerian Economy and Petroleum Subsidy Removal		16
2.4 Hypotheses Development ...		25
2.5 Endnotes on Chapter Two ...		26
CHAPTER THREE: RESEARCH METHODOLOGY		
3.1 Introduction		27
3.2 The Population and Sample ...		27
3.3 Source of Data		29
3.4 Instrument for Data Collection ...		31

TABLE OF CONTENTS (Cont'd)

3.5	Questionnaire Construction	...	32
3.6	Variable Measurement	...	33
3.7	Procedure for Data Analysis	...	35
3.8	Techniques of Data Analysis	...	35

CHAPTER FOUR: ANALYSIS AND INTERPRETATION OF DATA

4.1	Introduction ...	...	38
4.2	Characteristics of Respondents	...	39
4.3	Presentation, Analysis and Data Interpretation		41
	4.3.1 Transport Fares	...	42
	4.3.2 Inflation ...	...	45
	4.3.3 Industries	...	47
	4.3.4 Agriculture and Rural Dwellers	...	50
	4.3.5 Unemployment	...	54
	4.3.6 Petroleum-Produce consumption	...	56
	4.3.7 General ...	...	57
4.4	Hypotheses Testing	...	59
4.5	Endnotes on Chapter Four	...	68

CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATION

5.1	Summarisation and Discussion of Findings	...	69
5.2	Conclusions ...	...	73
5.3	Recommendation and Suggestion for Future	...	74

BIBLIOGRAPHY 77

APPENDICES 80

LIST OF TABLES

TABLES		PAGE
3.1	Categories and Number of Respondents ...	32
4.1	Distribution of Respondents by User Categories	40
4.2	Mean Responses on Increased Fares ...	42
4.3	Mean Responses on Inflation ...	45
4.4	Response Mean Values on Industries ...	47
4.5	Mean Value of Responses on Agriculture ...	50
4.6	Mean Value of Respondents on Unemployment	54
4.7	Mean Responses on Economic Use ...	56

LIST OF APPENDICES

APPENDICES

I	Questionnaire	80
II	Summary of Responses to Questions by all Respondents	84
III	Summary of Responses for Car-Owners ...	85
IV	Summary of Responses for Commuters and Public Transporters	86
V	Summary of Responses for Domestic Users ...	87
VI	Summary of Responses for Industrial Users	88
VII	Workouts on Hypotheses	89

CHAPTER ONE

1.0 INTRODUCTION

The Nigerian economy has been experiencing a downward turn quite sometime now. It is characterized by high inflationary rate, unemployment, under-capacity utilization of resources, lower national income and reduced foreign earnings. The situation has been like this since the 80's. Before this period, Nigeria passed through an economic boom when the problem was what to spend on rather the money to spend. Before the advent of oil, the Nigerian economy relied on agriculture for provision of food, generation of employment, income and foreign exchange. Suddenly the "black gold", oil, came into prominence and took over from agriculture.

Now the situation has changed again. The oil sector maintains the lead but the foreign earning has dropped. This is due to price instability in the world oil market. Nigeria being a mono-product nation is badly affected because when oil "sneezes Nigeria catches cold". The economy is, at present, in a bad shape. Local efforts at reviving the economic trend have failed and hence the need to approach the International Monetary Fund for assistance and guidance.

To revert the trend in the Nigerian economy, five major suggestions were given by economic experts. These include economic structural adjustment programmes consisting of privatization and commercialization of some public corporations; devaluation of Nigerian currency; subsidy removal on locally

consumed petroleum product. And lastly, budgetary discipline. The focus of this study is, however, on the subsidy removal on locally consumed petroleum products.

The proposal for subsidy removal has been in the pipeline since 1978 but the phasal removal never became operative until January 1986. Before 1986, local consumers of petroleum products enjoyed the subsidy up to the tune of 100% as claimed by the government. The benefits expected from the subsidy were the spreading of the booty of nature evenly as it was considered to be a desirable monetary transfer and also to bring these products to the consumers at reasonably low prices. This idea is not peculiar to Nigeria alone. It was done in almost all OPEC member countries to the tune of between 60% and 70% before 1984. Other advantages to subsidy removal include protecting infant industries to gain comparative advantage in world trade and preventing political opposition that might arise with subsidy hitherto enjoyed as it happened in Iran and Indonesia.

The Nigerian government decided to withdraw the subsidy in phases, though nobody was sure of the actual value of the subsidy. The proponents of this subsidy removal were of the opinion that increased prices of goods would reflect their true values and thus lead to an effective and efficient allocation of petroleum resources as true prices will be reflected. Other advantages include reducing locally consumed quantity so as to release more for foreign markets and thus gain more foreign earnings. It was believed that irrational and uneconomic uses would be curtailed. The policy was also expected to bridge the gap

between prices in Nigeria and foreign markets especially within the neighbouring West African countries, thereby preventing illegal smuggling or bunkering. The price differentials had made smuggling very attractive. Furthermore, increased price would lead to more income earnings for the country, thus encouraging the release of funds for other social services and infrastructures.

The prices of petroleum products have therefore, on several occasions, been reviewed since 1986. The last price change was in October, 1994 when the percentage changes were more than 300% on each of the products. The prices were N3.50, N3.00, N2.75 and N2.50 respectively for petrol, diesel, kerosene and Lpfo. The current prices are N11.00, ₦9.00, ₦6.00 and ₦6.00 respectively.

1.1 PURPOSE OF THE STUDY

The oil industry is the predominant sector of the Nigerian economy. It generates the bulk of income and foreign earnings. It is the opinion of this writer that the goose that lays the golden egg ought to attract serious attention and curiosity. Moreso, it is the general impression that when the industry sneezes Nigeria catches cold.

The purpose of this research is, therefore, to investigate the impacts on the Nigerian economy of the last two increases in the prices of petroleum product, as a result of subsidy removal. Within a period of one year the prices of these products have been reviewed upwards twice. There is still the tendency that further adjustment may arise. It is necessary to assess the impacts as a means of finding justification for or against further price increase.

The objective of this research work has its major and sub-parts. The main intention is to determine the effects and implications of subsidy removal on the economy and possibly find out to what extent the ailing economy could be revamped through the policy. In doing this, the sub-parts will dovetail from the major ones. The sub-objectives therefore include:

i) tracing the rationale behind the removal of subsidy;
ii) examining the effectiveness of the removal and finally giving recommendations on further execution of the policy.

1.2 STATEMENT OF PROBLEMS:

The main focus/concern of this research is to investigate the likely effects of continuous/phased removal of oil subsidy on the Nigerian economy. In doing this, attempts will be made at finding answers to the following questions:

a) Is there a justification for removing oil subsidy on the locally consumed petroleum products?
b) What are the likely effects of the withdrawals?
c) Has the policy of oil subsidy withdrawal been able to address the economic problems that it is meant to address?
d) What are other measures and means of reviving the economy apart from subsidy removal?

1.3 SCOPE AND LIMITATIONS OF THE STUDY

The study will be restricted to Kano, Jigawa, Kaduna and Katsina States for gathering information and data. The researcher believes that the result would transcend the boundaries of these four states selected. It may be necessary to choose sample from other states or other parts of the country but for cost and time available for such an exercise. It is assumed that notwithstanding the impacts will still be strong, if actually they existed and all the states selected is considered representative enough.

Furthermore, the examination of the impacts of changes in the prices of petroleum products is restricted to a few aspects of sectors of the economy. The aspects focused upon include inflation, unemployment, agriculture, industries, transportation and social infrastructures. The reason is not fat fetched. The economy is rather wide in scope. The areas focussed on are considered to be more vital and related to relied primarily on the affected products or where impacts could be directly and easily traced.

One major limitation of this study is the fact that it could not cover all parts of the country for data collection. It concentrates on the northern parts. The country is wide and with limited resources it would be extremely difficult to get to all nooks and corners of the country. Secondly, a few aspects of the Nigerian economy will be touched. This is to enable the researcher to conduct a fairly detailed study of the impacts of price increases on aspects that are primarily connec ' with the petroleum industry.

However, despite these setbacks and limitations it is believed that the study will achieve its set objectives.

1.4 SIGNIFICANCE OF THE STUDY

This study is supposed to throw more light into the issue of costs and benefits of increased prices of petroleum products and also serve as a guideline in the operation of the phased subsidy removal. It is expected that the paper could be an eye-opener to other areas in the industry or within the economy needing further investigation. Hopefully, the result of the research can influence government on its decision regarding further subsidy withdrawal in future.

1.5 OUTLINE OF STUDY

The study is divided into five chapters. The second chapter consists of a review of available literatures on issues relating to subsidy removal on petroleum products. It is from such literature that the theoretical framework and hypothesis of the study are developed.

Chapter Three discusses the methodology and data collection procedures for the study. The rationale for the choice of a particular method or methods is also mentioned in this chapter.

The analysis, explanation and discussion of findings form the core of Chapter Four. The hypothesis developed in the second chapter are also tested for validity.

The study is concluded in Chapter Five with a summary of the whole work and recommendations based on the researcher's findings.

1.6 EXPLANATION OF TERMS

In an attempt to prevents ambiguities in this research work, it is necessary, in the opinion of this researcher, to explain a phrase that would come up several times in this paper.

The phrase ***"removal of petroleum subsidy"*** will be used interchangeably with either ***"increase in price of petroleum product"*** or just ***"change in price of petroleum product"*** as a result of subsidy removal.

1.7 ENDNOTES ON CHAPTER ONE

1. Tomori, Siyanbola: "Agriculture, Forestry and Fishing, Structure of the Nigerian Economy. P.11, Macmillian International College Edition.

2. Aluko, Sam "The Burden of Economic Structural Adjustment: The Nigerian Scenario". A lecture given at the 1987 Convocation of University of Ife, Ile-Ife. p.3.

3. Aluko, Sam Ibid, P.2.

4. Ndubusi Ugbede et al: "The Oil Price Jinx". Times International Vol. 8, No. 15, January 1987, p.10.

5. Soremekun Olukayode: "Nigerian Petroleum Policy and External Relations", a Ph.D thesis submitted to International Relations Department, University of Ife, Ile-Ife, 1984 p.12.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

The Nigerian Petroleum Industry has been described as ***"by far the most dynamic sector in Nigerian economy"*** and ***"the development of oil resources as the most significant economic event in recent years".*** The prominence of the industry to the citizens and economy of Nigeria has made it to attract the attention of many writers and researchers.

A great deal has been written on the various aspects of Nigerian petroleum industry. These aspects include contributions to the economy, the characteristics, marketing strategies, market structure, performance, politics, pricing and international contributions. The literature review for this study would, however, be discussed in two main parts. The first would examine opinions on the petroleum industry and Nigerian development while the second would focus on the petroleum subsidy and Nigerian economy.

2.2 NIGERIA AND PETROLEUM INDUSTRY

There are two main schools of thought as regards the contribution of this industry to the Nigerian economy. These are the radical and conservative schools. The radical school is clearly reflected in the studies and research works

of writers like **Claud Ake, Terisa Turner, Tim Shaw, S. R. Pearson** and **L. H. Schatz**. The belief of this school is that petroleum, as a resource, has wreaked much havoc on the socio-economic life of Nigeria since it has engendered distortions and exacerbated contradictions in the country. It is claimed that oil industry is an enclave, isolated and alienated from its environment and its technology is imported, having no bearing to the local technological capacity.

The members of the conservative school of thought are represented by researchers of Festus Marinho, James Mayall, O. Ogunsola and M. O. Olorunfemi. To this category of writers, petroleum has been a blessing to Nigerian. It has buoyed up the country's economy as regards income and foreign exchange; and that without these revenues, the massive economic developments of the 1970s would have been impossible. In addition, the country as a recipient of these revenues, has been able to take a more forceful stance in international politics.

Pearson and Schatz examined the contributions of oil to the Nigerian economy. The two works were published in 1969 and 1970 respectively. In this respect, they modelled their assumptions on the perspectives of the conservative school of thought. Their contention was that oil has accorded a significant boost to the Nigerian economy. The boost according to them was in terms of economic development and enhanced standard of living. Schatz even went further to conclude that the entry of other petroleum companies to the Nigerian oil scene gave the country a freer hand in the formulation and implementation of

petroleum policies. These writers constitute the first set of published works in the field. However, the fact that they were written by foreigners is reflective of the external influence on Nigerian petroleum policy.

Okeke (1980), writing on ***"Oil in the Nigerian economy"***, claimed that the rapid expansion of crude petroleum production has made the Nigerian economy to be one of the fastest growing among the developing countries. The claim assumed importance in the light of the market performance as regards production, exportation and price flexibility.

Usoro (1971) however attributed the performance of the petroleum industry to the unverified but suspected high profit rate and affective negotiation between the producing countries and the operating companies. He was, however, pessimistic about the continued flamboyant performance of the industry in future even with the concerted efforts of the Organisation of Petroleum Exporting Countries (OPEC) by incessant maneuvering to control the market through posted prices and export prices. The postulation of Usoro has been validated by the current trends in the oil industry. The ripple effects of the slump and glut in the petroleum market have warranted the implementation of policies and legislations to keep the battered economy in shape. The price of oil in the international market has become unstable and, consequently, affected its production drastically. With the fall in production and exported quantity on a continuous basis, the revenue and foreign exchange earning capacity has dwindled.

In another write up, Ayo Ajomoh focussed on the issue of participation as a component on Nigeria's policy on petroleum. He argues that participation constituted a boost for the government in the area of petroleum policy. This notion has however been greatly criticized by writers like Michael Tanzer, Terisa turner and others who dismissed the assertion and described it as euphoric. They argues that in most of the oil producing world, the fruits of participation have proved to be illusory, since the assumption that technological skills got transferred through participation, have been seen to be false. They, therefore, then contended that oil companies have always indulged in devious tactics of frustrating workers who are well placed to imbibe technical skills. they concluded that participation, if effectively carried out, could still be regarded as a potential instrument of the country's petroleum policy.

Ubogu (1983) in a paper titled the ***"Impact of Oil in Nigerian Economy"*** described the industry as both a blessing and curse. He argued that the oil has been beneficial in terms of contribution to the gross domestic products, revenue generation for government, foreign exchange earning potentials and its consequential effects on industrialization, contribution to balance of payment, infrastructural development, few employment opportunities, increased living standard of Nigerians and creation and attraction of factors of production.

He also claimed that the coming to limelight of the oil has its indirect positive effects. These were given in terms of industrialization, improved position of Nigeria in international politics, labour training, fiscal effects and linkages to other sectors of the economy. Furthermore, he highlighted the negative effects

in terms of neglect of agriculture, environmental pollution, wasteful spending, linkage problems, inflation, Nigerian civil war and other social misbehaviours.

On the role of oil in the international politics, Soremekun Olukayode,, writing on Nigerian petroleum policy and external relations, examined the nature and the extent of the impact that petroleum has made on Nigeria's foreign policy initiatives. He asserted that oil has made its impact felt on every aspect of the country's national life.

According to him, ***" it is safer to assert that a certain amount of linkage has developed between oil and Nigeria's external relations. This was against the impression that Nigeria could not use its petroleum resources for the fulfillment of its political objectives because of the absorptive nature of the economy which prevented the country from really indulging in the luxury of using oil as a weapon in the international scene".***

It is no understatement to conclude that an important engine of growth in the twentieth century is oil. Its critical importance was highlighted by the Bradt Report which pointed out that ***"oil is now the leading commodity in the world trade"***. Undoubtedly, the extent of use and consequent monetary flows affect the prosperity of every individual in particular and the country in general as well as the balance of world's monetary and financial system. Oil constitutes the nucleus of industrial society, accounting for two-thirds of all energy requirements in the developed countries, half in developing and just one-third in the socialist states.

Akinnusi (1986), in a Ph.D thesis submitted to University of Ife, examined Nigeria and Oil industry. He postulated that most movement in oil prices are attributable to economic conditions and that politics has not dictated, and so cannot sustain, a rise in oil prices. According to him, what have so far been accounting for movements in prices are market structures and their conducts in the industry. He added that, viewing oil pricing as an economic phenomenon, it would be useful to examine analytically, the relationship between cost of production on the one hand, and equilibrium price and market price on the other. A general knowledge about the price of oil is that it is much higher than the average cost of production.

The claims above were a reaction to an earlier study by Thomas Stauffer (1978). He attempted to find out how the price of oil is determined and the nature of factors influencing the price. He came to the conclusion that oil pricing is political and economic. It is believed that, in certain situations, political reasons are stronger that economic ones. He opined that upward movements in oil prices have been politically motivated most of the time, while downward movements are usually results of economic forces acting gravitationally.

As far as the marketing, production and price of petroleum are concerned, Adelman (1971) rendered another scholarly analysis. He presented theoretical assertions on market realities. One of such assertions was that the petroleum industry is pricingly self adjusting. This was contrary to people's belief; and, the explanation was that market behaviours hampered price adjustment, and as a result of this, neither equilibrium price not supply could be equated with the

market price. The market price is usually above the supply price. Adelman gave greater attention to supply than demand and hence left the impression that there would be price war between producers and consumers, in as much as market is non-competitive.

In another work carried out in 1972, Adelman advised that oil countries should live in future. This statement was interpreted to mean that producers and consumers should endeavour to forecast market variables at all times, in order to be able to forestall market misfortunes. The significance of this in the light of Nigeria's present condition is that the country has failed to predict and project into market future and so assumed that price would remain at a constant level which would be adequate for the country to provide subsidy for its local consumption. The downward turn in the fortunes from the petroleum industry has forced the government to decide on the withdrawal of petroleum subsidy.

One of the earliest and most fundamental principles applicable to crude-oil production and marketing came from Hotelling (1931). He postulated that for any finite size of reserves of an exhaustible resource, there is an optimum programme of depletion commensurate with a schedule of increase in the price, depending upon whether it is the economic welfare of consumers or profit of the owners of the stock or exhaustible resource that is to be optimized. This principle has since been discussed, interpreted, expanded and fortified by prominent economists like Solow (1974), Dasgupta and Heal (1979) and Khalatbari (1976).

The relevance of this principle becomes more glaring when the fact that the volume of oil being consumed is much higher than the quantity being discovered. The world has been consuming between 20 and 25 billion barrels per year while discoveries have been lagging behind at between 10 and 15 billion barrels. Nigeria produces more than she discovers, implying that there might be enough supply even at the so called subsidized rate. From the foregoing, it is necessary for the country to have an aggressive policy on the exploration, marketing and pricing of oil to maximize the welfare of consumers and also optimize government revenue. One of such policies now decided on in the country is the reduction of subsidy granted on locally consumed petroleum products.

NIGERIAN ECONOMY AND PETROLEUM SUBSIDY REMOVAL

Subsidy has been defined as money paid, especially by government or an organization to make prices lower, or make it cheaper to produce goods by Longman Dictionary of Contemporary English. This is a new aspect of the Nigerian petroleum industry where very few works or studies have been carried out

The issue of impacts on subsidy reduction or removal, like the issue of contributions of the petroleum industry to the Nigerian economy, can be discerned into schools of thought. The two schools are the proponents and the antagonists. The proponents believe that the removal or reduction of subsidy on locally consumed petroleum products, although would increase the prices of these products, would ultimately be beneficial to the citizens in particular and the

economy in general. The argument is that the removal or reduction would generate some revenue which the government could utilize for the general development of the country.

The antagonists, on the other hand, consider the effects from the point of view of increases in prices of affected products having ripple effects of inflation on other sectors of the economy. It is also claimed that oil is one of the resources we can boast of and as such must be beneficial in terms of availability and price.

Olowu (1993) in a newspaper commentary, gave an analysis of the benefits of subsidy removal on food production. He emphasized that a major problem in the reduction of petroleum subsidy is that it would push up transport fares and ultimately prices of other consumable including locally produced food items. He was, however, quick in stressing that the present administration's determination to encourage the production of local food may provide a counterpoise to the potential inflational spiral that may arise from the subsidy reduction.

The logic is that the subvention, uses in constructing feeder roads as well as procuring other inputs for rural dwellers, would increase food production. The surplus of food commodities may force prices down rather than up. The seriousness and determination of the government in this direction is visible in the creation of a directorate in charge of food, roads and rural infrastructures in the president's office.

Isiekwere (1987) examined the pros and cons of subsidy removal on Nigerian public in a paper titled *"Petroleum Subsidy: Government Versus the Public"*. The basic assumptions underlying the work were the tabled arguments in favour of subsidy reduction or eventual removal. The claims were that the current prices were low and considered inadequate to cover costs of crude and refinement. Secondly subsidy adjustment was meant to be an integral part of the structural adjustment programme.

On the basis of these assumptions, he anticipated an increase in the pries of petroleum products. This, he claimed, would have multiplier effects and generally raise the cost of domestic production. This would go a long way in causing a decline in demand for Nigerian exports because of uncompetitiveness as a result of increased prices, arising from high production costs.

The consequences of subsidy removal, as he asserted, would be destroying two vital components of the structural adjustment programme. To him, uncompetitive prices of Nigerian exports would prevent industries and government from taking the advantages offered by the adjustment programme for free flow of goods and services. Secondly, increased price of petroleum products would compromise, if not deter, gain that could be associated with the adjustment programme and this could not be compensated for by the anticipated increase in government revenue.

He also stated that the argument on current relatively "low price" encouraging smuggling and adulteration only portray the laxity on the part of government

agencies, that are maintained on public taxes. Increased petrol prices would amount to double taxation in the face of reduced purchasing powers. Secondly, on the argument that only a few car owners and urban elites were opposed to price increase, the posers are: how would the travelling public be expected to cope with the high fares and petrol prices? Furthermore, does the argument of increased cost hold for abundant and flared gas? Or does the price discriminate between private and public transport? He therefore suggested a quick action on the proposed mass transit to relief the public of burden. He, however, doubted the seriousness of the programme.

Finally, he argued that citizens of oil producing nations should enjoy some concessions on oil. He claimed that Nigerian citizens, having paid fixed pries throughout 1986, when oil price fell to low ebbs, should be considered to have made enough sacrifices to offset the increased cost of production claimed by Nigerian National Petroleum Corporation. As far as he was concerned, the Corporation should have recommended a reduction in prices of petroleum products when price of oil fell. He claimed that the public was only appreciative of increased price of oil because of the awareness that the government needed more revenue, hence the support and sympathy, especially soon after the close of discussion chapter on loan from International Monetary fund.

Chuma Ifedi in his *"The common man and national budget"* supported total removal of subsidy. He considered the issue from the point of view of social classifications of rich and poor. He claimed that the projected N900 million saving from the subsidy removal, if spend on education and rural development,

would benefit the *"common man"*. He assumed that subsidy removal was intended to hit the Nigerian elites who hitherto enjoyed the concessionary oil pries but in favour of the *"common man"* by retaining the old market price of household kerosine. He defined common man as *"an ordinary and average citizen who does not possess personal car or house"*.

The argument could be punctured at virtually all stages. First, the definition of the common man is ambiguous. In fact, if the definition is accepted, then the *"common man"* would pay higher transport and commodity prices. The proportion of kerosine used in the rural areas is small and as such the *"common man"* is also hit.

Akanbi A. (1986), in support of subsidy removal claimed that the government seemed to have plausible excuses for increase in the prices of locally consumed oil products considering the implication of its structural adjustment programme vis-a-vis the second-tier foreign exchange market and its corollary effects on the Naira value. He argues further that the cancellation of subsidy would bring about a noticeable measure of discipline and economy in the use of oil products.

In support of the above claim, NNPC quoting the President, postulated that in recent months, the objective Naira value of such petroleum products consumed at home as been much higher that the prevailing pump-head pries and the concomitant effect is the serious problem of oil smuggling to the neighbouring countries with dangerous dilution of kerosine or diesel with normal petrol.

Furthermore, Nigerian National Petroleum Corporation proposed that removal of subsidy could not be responsible for hike in transport fares. It was explained that fuel contributed only 15 to 20 percent of running costs of vehicles and as such increase in its price was no justification for increasing prices.

Robert Erickson, the Managing Director of Mobil Oil Nigeria Plc, in a press release in explaining the problems faced by his company said that the marginal rate of N11.00 per litre of petrol was inadequate. He also claimed that the current prices of the petroleum products in the country remained one of the cheapest in the world. He therefore suggested a 10 - 12% increase on fuel prices. He argues that the increase, if effected, would not affect the economy adversely but help to curtail inflation and thus bring the economy to shape in time.

He gave the present level of inflation in the country as 50%. To buttress his points, he claimed that many products and services were more costly than fuel, yet people buy them. He remarked that for an effective distribution of petroleum products throughout the federation, which would be vital for the structural adjustment, there should be an increase in price.

As a complementary, an analyst, Mbadiwe Emelumba, in a commentary, considered the withdrawal as *"fine intentions"*. His proposition was based on the opportunity cost of giving a concessionary price which was put at ₦1.5 billion per annum. He stressed that the subsidy withdrawal would make life

better for the rural dwellers. In his point of view, giving subsidy was a mere gift of people's money to the affluents of the society.

He, however, rested his case on facts which needed further scrutiny and clarification: that *"the people of this country, unemployed as they are,, wretched as they are, do not consider a mere 20% subsidy on oil too much from government, considering that even this negligible sum is drawn from their purses"*. According to his, the rural populace whose lots would be enhanced could however end up worse off. They would hardly be able to afford the new cost of transporting farm produce to metropolitan markets. This is contrary to the earlier expression.

Opadokun (1986), raised the issue that cheap petroleum was the only thing that could be said to be evenly beneficial to all Nigerians as against the affluents alone. He described as faulty, unscientific and morally indefensible the argument that it was only in Nigerian that petroleum products were cheaper than mineral waters. To him, subsidies were considered to be monetary transfers and meant to bring the products to consumers at low and reasonable prices. He claimed that subsidy on petroleum products should be seen as an easy way of helping infant industries to gain comparative advantages in world trade.

Kanu, in support of restoration of subsidy, disagreed that the removal or reduction of oil subsidy leading to increase in prices would curb or stop smuggling and adulteration of petroleum products. It was also stated that the

measure would be inflationary and burdensome and so would not benefit the masses that the government claimed to be protecting.

Balogun and Chike-Obi disagreed with the claims of Kanu in an articulate titled *"Smuggling and Petroleum Shortage"*. He anticipated an increase in the smuggling of refined petroleum products from Nigeria to neighbouring countries except government steps up actions to increase the domestic retail prices of the products. He believed illegal bunkering and smuggling could increase to a level above the law enforcement capacities of responsible agencies including the armed forces.

According to him, the macro-economics of government subsidy could easily be understood from the analogy to well-known principle in physics of gases. This he modified to be applicable to the supply and availability of petroleum products. He stated that is a gradient exists in the price of any product, this would lead to a flow of the product from the location with lower price to a location of higher price. This he called the flow principle. The floatation rate in this case would be the currency exchange.

He explained that a gradient exists when a product is sold at two different prices at different locations. For this reason, to prevent illegal activity in both countries, they must be a comparison between the two prices. This is usually done at the black market exchange rate since no prospective smuggler will approach his country's Central Bank for foreign exchange at the legal rate.

He claimed that efforts by the government to apply a subsidy for the general populace on any product would certainly fail if the product has transportation characteristics that permits its smuggling. This he projected to refined petroleum products and locally manufactured goods.

Lastly, Muhammed (1994), in a write-up titled *"The coke and gas argument"* explained that justification for subsidy removal in a different perspective. To him, subsidy removal was a civil responsibility, it was a sacrifice to the fatherland. As far as he was concerned, the policy should have nothing to do with the disingenous and nihilistic argument that coke, beer or bottled water all cost more than a litre of petrol. He considered it unreasonable to compare the price of petrol in the country with that in neighbouring West African countries that do not produce it.

He accepted the fact subsidy removal could emerge for economic reasons. Since a whopping sum of N1.40 billion was spend as government subsidy on locally consumed oil products, half of the sum the country was asking for on difficult conditionalities from IMF; the populace must be ready to bear the brunt. He, however, disagreed with unnecessary and unjustified dynamism in the prices of oil products, just because other prices were increased; oil should not necessarily move with prices of other commodities.

He claimed that those who judge the policy from the angle of price only have ignored the consequences of withdrawal of subsidy on cost of transportation, cost of food items and other costs. He, therefore, suggested a phased

withdrawal of petroleum subsidy. To him the argument of relative price of oil products between Nigerian and other countries lacks merit. He suggested that other things apart from oil prices have to be compared. He gave the example of Kuwait and Saudi Arabia where goods and services are either free or heavily subsidized. These include even products produced from other countries, just to increase the welfare and comfort of the citizens. They provided respectable education, housing and health policy.

2.4 HYPOTHESES DEVELOPMENT

From the foregoing discussion, it could be realised that there have been conflicting opinions as to the desirability and effects of the subsidy removal or reduction on the Nigerian economy. Some of the works claim and portray the policy as being beneficial, useful and desirable in terms of bailing out the ailing economy from the troubled waters. Others have contrary opinions.

Having considered the divergent opinion of writers and researchers on the issue in relation to Nigerian economy, it is necessary at this point to develop hypotheses from which the real situations could be examined for deductions and postulations. From the host of literatures reviewed, one can now hypothesis that:

a) Oil subsidy has no effects on the transport fare increases.
b) Oil subsidy removal has no inflationary effects on the Nigerian economy.
c) Oil subsidy has no adverse effects on the industrial sector of the economy.

d) Oil subsidy removal has not generated unemployment within the economy.

e) Oil subsidy removal has no negative effects on the agriculture and living condition of rural dwellers.

f) There is no positive correlation between the income and the impacts of increases in the prices of petroleum products.

2.5 ENDNOTES ON CHAPTER TWO

1. Abacha, Sani: An extract from the 1995 Presidential Budget.

2. Chike-Obi, Balogun: "Smuggling and Petrol Shortager" The Guardian, March 30, 1987, p.9.

3. Isiekwere, Pius: Petroleum Subsidy: Government versus the public The Guardian Newspaper, March 30, 1987, p.9.

4. Kanu, Mary: "Petroleum, Coke and spring water" The Guardian, May 8, 1985, p.8.

5. Pearson S. R.: Petroleum and Nigerian Economy, Standord, Standord University Press. 1970 p.72.

6. Offomary H. K.: "The Oil Industry in Nigeria" an address delivered to Nigerian-British Association, NIIA, Lagos, July 13, 1973.

7. Olowu, Dele: "Budget of structural adjustment" Nigerian Observer, January 8, 1993, p.3.

8. Opadokun, Ayo: "Nigeria and Oil subsidy" The Punch January 24, 1986, p.11.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

Having hypothesized the ideas presented in the literature review, in the preceding chapter, this chapter will give a description of the research procedures and methods employed in carrying out the study. In the course of the chapter, an attempt will be made to explain the process by which data was generated, collected and collated. The sample design, research instrument, variable measurement and techniques of data analysis including their justifications will also be discussed. However, the analysis of the extracted data will be the main issue in the next chapter.

3.2 THE POPULATION AND SAMPLE

The population in this study consisted of all the consumers of petroleum products, resident within the country. It was rather impossible and impractical to observe the entire group of consumers for this exercise because of its large

size. To say the least, virtually all Nigerians and foreigners within the country would fall into one consumer group of petroleum products. The population is thus extremely large. Furthermore, the resources, in terms of money and time available to the researcher, were limited.

It was for this reason, therefore, that a small part of group called sample was chosen for observation to represent the population, so as to save time and energy. The writer was also aware of the fact that if a sample is representative of a population, important conclusions about the population can often be inferred from analysis of the sample.

A sample of three hundred consumers was chosen. The sample was made up of four major classes of petroleum products consumers located within just four States of the Federation. The states involved were Kaduna, Kano, Jigawa and Katsina. The four categories into which consumers were grouped were industries, private car-owners, commuters and passengers (public transport) and finally the domestic consumers.

The public transport category was limited to the road transportation system; while industrial group was mainly for those industries employing the use of petroleum products as inputs for their operation, for example, running of machines. Domestic consumers were those people using liquefied gases for cooking and baking in their homes. These were cases of overlapping consumers, in which case a respondent could be a car-owner as well as a gas consumer simultaneously.

3.3 SOURCES OF DATA

The study relied very much on both primary and secondary sources of data with emphasis on the former. the primary sources included face to face interaction with some individuals, who in the past five year or more, have continuously purchased and used the petroleum products affected. This group of people included Managers of petrol filling stations, drivers of public transport, Marketing Managers and District Managers of National Oil and Chemicals Marketing Companies as well as the Executive and members of Nigerian Transport Owners Association.

A structured questionnaire was also applied to willing respondents at filling stations, motor parks, residences and offices. The questionnaire (Appendix I) had two main parts, the first with seven questions, dealt with private and personal questions about the respondents. The second part had twenty-five questions which were elated to the main issues of the research topic. The questions were short, concise and unambiguous. This was to enable the researcher to obtain a first-hand perspective of what those respondents really considered to be the impacts of fuel price increase on their living conditions, business, domestic activities and the economy, in general terms.

The secondary data, on the other hand, comprised data and information gathered from books, journals, magazines and newspaper publications, especially those from the Nigerian National Petroleum Corporation, Kaduna. This source was only used to complement the primary data collected from respondents. In doing this, care was however taken to ensure that biases and prejudices of other studies and writers' opinions were not allowed to unduly influence judgements and perception of this research work.

3.4 INSTRUMENT FOR DATA COLLECTION

As earlier mentioned during the course of discussion on sources of data, the main instrument for the collection of primary data for the study was a structured questionnaire. The rationale behind the choice of structured questionnaire was to limit the respondents to interested and relevant areas of the study. This is because of the fact that the wide scope and nature of the Nigerian economy, with several factors influencing it, would attract multifarious responses and answer from respondents. This could however be cumbersome to process.

On the whole, a total of three hundred copies of the questionnaire were distributed to the intending respondents covering the four categories of consumers of the affected petroleum products. A hundred questionnaires were administered in each of the three chosen states. In doing this, weights were attached to the four categories, based on accessibility to respondents and considered rate of purchases of the products. The break-down for each state was as follows:

TABLE 3.1: CATEGORY AND NUMBER OF RESPONDENTS

Consumer Categories	Number of Respondents
Public transporters	30
Private car-owners	30
Industries	20
Domestic	20

The administration of the questionnaire was carried out by the researcher himself. This, apart from reducing cost, would prevent mishandling/loss of the questionnaire and so, make it more valid. This yielded 100% return of questionnaire and allowed for asking for other relevant questions not contained in the drawn questionnaire. The sample frame can be described as convenient but stratified as well.

3.5 QUESTIONNAIRE CONSTRUCTION

The researcher was conscious of the function that a questionnaire had to serve in translating the research objectives into specific questions, which respondents could easily answer. Thus, the questionnaire motivated them to respond appropriately and thereby furnish the researcher with correct information.

In the light of the above statements, questions were constructed in such a way that would enable the respondents to indicate whether they strongly agreed, agreed were not sure, disagreed or strongly disagreed in relation to particular statements of claims as revealed by the review literatures. The scale of responses was indicated to facilitate processing through coding.

In order to test the validity of answers provided by respondents to earlier questions, trip-wire questions were sometimes later asked. This was also to elicit the correct information about the opinion or respondents being searched for. Ranges were provided for income levels and ages questions, to give multiple choice answers because these questions were considered to be private and personal, and so sensitive, to which respondents are usually reluctant or unwilling to answer.

3.6 VARIABLE MEASUREMENT

In as much as the questionnaire were used in gathering data, it was considered necessary for variables to be measured. This would give room for computation of the required statistics. This made coding or responses to questions easily

carried out. The framing of questions assisted in making measurement an easy task. The questions were positively asked. The responses to each question were measured on a five point scale of *"strongly agree"; "agree"; "not sure"; "disagree" and "strongly disagree"*.

The values attached to each of these responses were 5, 4, 3, 2 and 1 respectively. This method of quantification was done to allow for the use of statistical measures.

The incomes of respondents were also grouped because of its sensitivity. There were four main groups. The income group and attached values were as given below:

Annual Income	**Code**
Below N5,000	1
N5,001 - N10,000	2
N10,001 - N15,000	3
Above N15,000	4

The coding and quantification of income had facilitated the procedure of finding the sort of relationship that existed between the income of the respondents and response to removal of petroleum subsidy. This would enable the researcher to find out if the income level had anything to do with effects of subsidy removal.

3.7 PROCEDURE FOR DATA ANALYSIS

The data was extracted from the returned copies of the questionnaire. these were coded and fed into a computer. The use of computer was necessary to facilitate the computation of the large size of the respondents. The researcher engaged the use of the Statistical Package for Social Science (SPSS) for the data analysis.

3.8 TECHNIQUES OF DATA ANALYSIS

For a comprehensive diagnosis of the collected data, it is necessary to describe some of the statistical tools that were used in the analysis. It is pertinent to say, here, that both qualitative and quantitative technique of analysis were employed in dealing with the data. The following statistics were used in analysing data:

percentage, frequency distribution, mean, mode, correlation and other measures of control tendency.

Since the study was based on a sample, it was necessary to make decisions, meaning, deducing and inferring from the samples for the population. This led to the testing of hypothesis. In testing hypothesis, it was assumed that the responses were normally distributed. The level of significance was set at 0.05, meaning about 95% confidence.

The Z-score was used for testing the hypothesis because the sample was quite large and sampling distribution of many statistics would be normal or at least nearly normal with mean, U and standard deviation ρ. Since a sample was used to represent population, the standard error would now be $\rho / \sqrt{N}$ where N was sample size. From this, therefore the Z-score would be given by $Z = \frac{X - U}{\rho / \sqrt{N}}$

as against $Z = \frac{X - U}{\rho}$

In carrying out the above operation and calculation the sample mean , would be given from data fed into the computer. The standard deviation would also be got through the same process. However, the population mean, U,

resulted as a consequence of normal distribution assumption. since response for a question attracted values from between 1 and 5, the mean would be 3. The implication was that a value above 3 signified agreement while those below were contrary i.e. disagree to such a claim. In situations where more than a question were used to test an hypothesis, the mean was got through the multiplication of the number of questions by 3. The assumption of normal distribution made 3 to be mean median and mode for response to a question.

To test for the significance of correlation as regards respondents' incomes and their respective pattern of petroleum products consumption, the formula engaged was: $$t = \frac{r\sqrt{N-2}}{\sqrt{1-r^2}}$$

The correlation co-efficient, r, was got from data and so supplied in the computer printouts. N was the sample size and so equalled 300. On the basis of a one tall test student's distribution of 0.05 level, the null hypothesis would be rejected if calculated through above formula was found to be greater than 1.645. It would be accepted if otherwise.

CHAPTER FOUR

ANALYSIS AND INTERPRETATION OF DATA

4.1 INTRODUCTION

The previous chapter gave a description of the research procedures in this study. It explained how the sample was chosen, data was collected and collated as well as the method of data analysis. The focus of this chapter would be presentation, analysis and interpretation of data. Some hypotheses would be tested also.

As earlier mentioned, the data for analysis were derived from responses of three hundred respondents chosen from three states within Nigeria. The respondents were in four categories for each state. These categories were car-owners, public transporters/commuters, industries and domestic users.

The size of the respondents was considered to be justifiably usable as a basis for making generalizations on the impacts of subsidy removal on Nigerian economy. The basic assumption underlying the employment of questionnaires or respondents was that their opinions would represent the realistic feelings of most

Nigerians. The analysis of data was carried out in two phases. The respondents were taken as a unit in the first, while each categories of respondents was considered as an entity in the second.

4.2 CHARACTERISTICS OF RESPONDENTS

The respondents consisted of both sexes who have been using petroleum products for up to five years. The age distribution was taken to be above 20 years while income was any size above zero. The discussion and analysis did not focus on sex and age. It is pertinent to say here that a 100% return on questionnaire was had because they were personally administered by the researcher. This further afforded him the opportunities to ask questions from respondents. Most, if not all of the respondents were urban dwellers while the public transporters were mainly illiterate.

TABLE 4.1 DISTRIBUTION OF RESPONDENTS BY USER CATEGORIES

CATEGORY	NO. OF RESPONDENTS
Private Car-owner	90
Public Transporter/Commuter	90
Industries	60
Domestic Users	60

The table above shows that the private car owners and public transporters had a proportion of 30% of respondents each while the two other categories had 20% each. The reason for the skewness in favour of the two former categories was accessibility and size.

The groupings of users into categories had very little significance in terms of responses of respondents (see Appendices II-IV). The respondents portrayed that the impacts were general rather than peculiar to certain categories. However, there were a few cases or questions, in which the categories revealed that they were more affected or concerned with such questions and so reflected through tilting responses towards such categories. For instance, questions relating to reactions to price increases in petroleum products proved that the industrialist and public transporters reacted less through consumption reduction

unlike other categories. Industrialists topped the list in strongly agreeing that subsidy removal affected the industrial sector.

4.3 PRESENTATION, ANALYSIS AND DATA INTERPRETATION

In analysing the respondents' responses aggregately, all mean values above 3.0 were taken to have favoured or agreed with the corresponding statements and claim while those below 3.0 were taken to have disagreed. A standard deviation of less than 1.5 was also considered acceptable for dispersions from the mean. The standard deviations are quoted in brackets below their respective mean values.

4.3.1 TRANSPORT FARES

TABLE 4.2: MEAN RESPONSES IN INCREASED FARES

QUESTIONS	ALL	PC	PT	DM	IND
Increased transport fare was a consequence price increase	4.51 (0.91)	4.39 (0.91)	4.58 (0.87)	4.63 (0.62)	4.60 (0.82)
Change in oil price was much more responsible for increased price fare than the spare parts prices	3.32 (1.24)	3.58 (1.34)	3.11 (1.05)	3.25 (1.18)	3.40 (1.26)

ALL = Aggregate Respondents

PC = Private Car-owner

PT = Public Transporters

DM = Domestic

IND = Industries

From table 4.2, it was observed that all mean values of respondents for both questions or claims, relating to increase in oil prices as being a causative factor for increase in fares, indicated different degree of agreement. For all the respondents taken together as a unit, the mean value was 4.51 with a standard deviation of 0.91 while on group basis, car-owners, transporters, industries and domestic users has 4.39, 4.59, 4.60 and 4.63 respectively.

It was observed that private car-owners had the least. This could be explained probably by the fact that they use private vehicles hence larger percentage might not be able to explain or relate fare increases to charge in petroleum prices.

The observation, however, ran contrary to the claim of Nigerian National Petroleum Company that removal of subsidy could not be responsible for hike up in fares, based on the fact that fuel contributed between 15 and 20 percent of vehicles' running costs. It however supported the claims of other writers that increased in petroleum product prices would push up transport fares and the ultimate prices of consumables including locally produced items.

Furthermore, the claim that the increases in the prices of oil products rather than costs of spare parts were responsible for fare increase also received strong assents from respondents. It had a mean value ranging from between 3.11 to 3.58 with a standard deviation of between 1.05 to 1.34, the dispersions of which fell within acceptable limit. The public transporters had the least mean value;; they spent mostly on spare parts for maintenance while car-owners had the highest since petroleum products were the main variable costs.

The explanation for obtaining these results could probably be the fact that, in most cases, petroleum products were considered to be variable in maintenance cost. An increase in use of which would raise cost unlike the spares parts that could classified as fixed and changeable only on longer runs. An increase in the price of petroleum products therefore would definitely amount to increased cost and so would warrant fare increases commensurate to make transportation business lucrative. This was more so because of degree of demand for public vehicles by passengers. Transport fares have increased from ₦30.00 to ₦40.00 for a journey from Zaria to Kaduna while intracity trip is ₦10 as against ₦5 before the subsidy removal.

4.3.2 **INFLATION**

TABLE 4.3: MEAN RESPONSES IN INFLATION

QUESTIONS	ALL	PC	PT	DM	IND
Increases in commodity prices could be accounted for by changes in petroleum products prices	3.85 (1.23)	3.90 (1.18)	3.90 (1.16)	3.88 (1.15)	3.82 (1.30)
Removal of oil subsidy had to a reasonable extent influenced inflationary rate in Nigerian's economy	3.91 (1.40)	3.92 (1.35)	4.10 (1.25)	3.93 (1.49)	3.83 (1.46)

It was evident from the table above that the statements relating to the inflationary impacts of oil subsidy removal had mean values greater than 3.0 for all categories of respondents and their combination. The respondents agreed that the subsidy was inflationary. The industrial category had the least mean value but highest standard deviation for both statements while the public transporters had the highest.

This observation was in corroboration with the proposition in some literatures reviewed which stated that the measure would be inflationary, burdensome and unbeneficial to the masses that government wanted to protect. It however antagonised those that argued that increase in oil prices would curtail inflation and would not affect the economy adversely but bring the economy to shape on time.

From surveys and indications, the prices of commodities had risen over the year but income remains static, hence reductions in real incomes of salary earners. This situation notwithstanding, the government claimed that inflation index had fallen. A reconciliation of these two divergent opinions could be the methodology for measuring inflationary tendencies. The government got its indices usually from factories at factor cost whereas consumers viewed from retail end of market.

Furthermore, it would be difficult to apportion certain percentages of inflation to subsidy removal. There were a lot of factors within the economy that were inflationary during the last one year. One of these factors was the Autonomous Foreign Exchange Market having its toll from imported goods, scarcity of goods and inadequate output plus population increases.

4.3.3 **INDUSTRIES**

TABLE 4.4: RESPONSE MEAN VALUES ON INDUSTRIES

QUESTIONS	ALL	PC	PT	DM	IND
Production costs had gone up in companies using petroleum products as inputs	4.24 (1.06)	4.43 (0.82)	4.25 (0.89)	4.25 (1.24)	4.05 (1.26)
Industrial production capacities of these companies had fallen due to increased prices of petroleum products	2.71 (1.71)	3.04 (1.26)	2.57 (1.26)	2.63 (1.26)	2.57 (0.98)
Profitability of companies using petroleum products as inputs had been adversely affected by the increase in the process of the petroleum products	3.54 (1.26)	3.66 (1.14)	3.44 (1.11)	3.67 (1.21)	3.50 (1.50

Table 4.4 above reveals the opinion of respondents on the effects of subsidy removal on petroleum products. The mean value ranged between 4.05 and 4.43 with standard deviations ranging from 0.82 to 1.26. On the issue of increased cost of production, therefore, the general opinion was a strong agreement, moreso that the levels of standard deviations were within acceptable limit. The explanation could be viewed from the fact that increased price would definitely raise the total production cost, except where there were close substitutes for

such factors. Outputs might be increased to absorb the cost through wider spread of such costs but petroleum products within industrial set-up are mostly variable in nature and may increase with the production level.

Opinion were divided on the claim that the industrial capacities had fallen because of increased price of oil products. The combined mean value for the aggregate respondents read 2.71 with a standard deviation of 1.71. The dispersion from mean was considered rather high for acceptance. The other consumer categories gave mean values of about 2.60 with deviations at 0.98 and 1.26. The researcher thus believed that the difference between divergent opinions were negligible.

Below production capacity of industries could be inferred from prices of essential commodities in the common market. However, the linkage with the subsidy removal might be difficult to prove. *"Industries are grinding to a halt just like in the days of import licence. But the problem is not shortage of raw materials. There is a products glut because the people are not ready to buy goods at the price the manufacturer are offering".*

As far as profitability of companies, the respondents mean value ranged between 3.44 and 3.67 which indicated a level of agreement with the claim. The standard deviations were between 1.11 and 1.50. The dispersion from mean could be tolerated. The responses implied that the profitability of companies had been adversely affected due to increased prices. It may, however, be difficult to pin a certain proportion of profit/losses to oil price increase except from the perspective of increased cost and falling sales arising from price increase. Granted that capacity had been reduced, fixed cost would also increase. And as variable cost from oil products increased, profitability would be affected.

Furthermore, *"even at an average 30% industrial capacity utilization, most manufacturing companies are confronted with overflowing warehouses, as consumers are unable to buy owing to continuing declining Naira earning and high prices".*

4.3.4 AGRICULTURE AND RURAL DWELLERS

TABLE 4.5: MEAN VALUE OF RESPONSES ON AGRICULTURE

QUESTIONS	ALL	PC	PT	DM	IND
Rural infrastructures are not enough compensation for oil subsidy removal	3.37 (1.48)	3.32 (1.44)	3.39 (1.56)	3.55 (1.49)	3.37 (1.67)
Rural dwellers are now worse off because of oil subsidy removal	3.60 (1.18)	3.58 (1.25)	3.55 (1.17)	3.42 (1.10)	4.00 (0.95)
Oil price increase has not led to increased food production	3.59 (1.10)	3.40 (1.02)	3.60 (1.02)	4.05 (0.89)	3.63 (0.80

In relation to the question on whether rural infrastructures are not enough compensation for oil price increases, the response rate was generally slightly in support of the statement. The mean values of respondents were a little higher that 3.00: they were between 3.32 and 3.55. The standard deviations were rather high and as such might not be a reliable measure of central tendency for validity. The result might be interpreted as giving a pointer to the fact that governments' effort at providing infrastructures from savings made from subsidy withdrawal was considered to be inadequate to pay back for increase in fuel prices and ultimate effects. It was the intention to spend up to half of the

subvention estimated to be ₦900 million on rural road construction and funding of education. This was to increase standard of living and food production.

An explanation for the response could be inferred probably from the neglected condition of rural infrastructures. Also, subsidy removal resulting in increased prices of the products and fares had direct effect on the purses of rural dwellers whereas the benefits from infrastructural development would be considered secondary or indirect. Rural dwellers would, therefore, not realise the conversion of subvention to rural development as a compensation. Furthermore, the notion that public goods are meant to be government provision still reign supreme. Provisions of such facilities were taken to be from taxes, hence increased fuel price could be thought as a way of double taxation and so did not serve any compensation. This supported Njoku"s claim that subsidy removal was becoming an acceptable source of indirect tax in the literature.

The statement on the condition of rural dwellers had a mean value of more than 3.0 for all classes of respondents as well as at the aggregate level. It had a score of 3.60 mean value on total respondents but on group basis had 3.58, 3.55, 3.42 and 4.02 for car-owners, transporters, domestic users and industries respectively.

With a low level of standard deviation of between of 0.82 and 1.25, generalization and validity could be asserted since the measure of control tendency was quite reliable.

The figure a connotation that a worse condition of living was experienced after subsidy reduction on locally consumed petroleum products by the rural dwellers. The situation could be attributed to increased prices of commodities and fares, in relation to moving products to urban areas thereby reducing profitability. Poor storage facilities made them often to sell at "lower than cost" prices thus affecting future output sizes. Rural dwellers' incomes were never stable, the real level of income would suffer further reduction for above reason, resulting in low standard of living. Farmers that have mechanized farms would pay high cost with price increase in oil products.

On the issue of subsidy removal not leading to increased food production, the respondents gave a slight agreement, with the exception of domestic category. The mean value of all respondents put together was 3.59 with standard deviation

of 1.10. The four groups had 3.30, 3.64, 4.05 and 3.63 with associated standard deviations of 1.26, 1.02, 0.89 and 0.80. These figures could be acceptable at their respective levels of standard deviations of validity and generalization.

The impression of respondents could have been influenced by relative scarcity of agricultural commodities and even when available, attracted high prices. This could have been otherwise if food production had increased. Hunger still stares Nigerians in the face. It is necessary to point out that food production increase could not be immediately noticeable since the products have different periods of gestation ranging between a few months and several years. The fact that respondents were urban dwellers might not allow for good judgement of the situation.

An explanation in favour of the finding could be the problem of farmers in grabbing opportunities of larger markets from opening up of rural areas through network of roads. High transportation cost could be an inhibiting factor against connecting the urban markets where profits could be higher from sales. The findings did not support the claim in the earlier literature that *"The subvention used in constructing feeder roads and purchasing other inputs for rural*

dwellers would increase food production. The surfeit of food production may force prices down rather than up".

4.3.5 UNEMPLOYMENT

TABLE 4.6: MEAN VALUE OF RESPONDENTS ON UNEMPLOYMENT

QUESTIONS	ALL	PC	PT	DM	IND
The removal of oil subsidy has not resulted into unemployment in the rural areas	2.84 (0.99)	2..79 (1.11)	3.05 (0.68)	2.83 (1.15)	2.73 (0.92)
Employment problems can be solved through increased oil prices	3.35 (1.10)	3.76 (1.13)	3.44 (0.92)	3.15 (1.21)	2.92 (0.76)

From the table above, the respondents seemed to be posing a lukewarm response. They all tended towards neutrality in the statement or claim that subsidy removal has not resulted in unemployment in the rural areas. The mean value of respondents for both aggregate and different groups ranged between 2.73 and 3.05 with standard deviations of between 0.68 and 1.15.

The result was not unexpected because the effects of the scheme is not expected to be latent immediately in the rural areas. For about 52% of respondents to have declared "Not sure" to the claim, it could be related to the fact most of the respondents were urban dwellers. Unemployment could only have resulted from the scheme if transport fare increase had to discourage farmers from mass production due to the problem of connecting the urban market.

In the urban areas, however, *"The employment queues continue to grow longer despite apparent genuine but rather poorly articulated efforts to reduce the number of the jobless".*

On the claim that unemployment can be solved through increased oil prices, the responses were in support of it except for industrial consumers which dangled between disagreement and neutrality. The mean value was between 2.92 and 3.76 with industries having the least. The standard deviations make reductions valuable and the responses are well spread around the means. Enough employment could not be said to have been generated by now judging by the number of unemployed graduates.

4.3.6 PETROLEUM PRODUCT CONSUMPTION

TABLE 4.7: MEAN RESPONSES ON ECONOMIC USE

QUESTIONS	ALL	PC	PT	DM	IND
Uneconomic uses of petroleum products had been curtailed through price increase of the products	3.31 (1.22)	3.56 (1.21)	2.97 (1.25)	3.42 (1.08)	3.47 (1.08)
Consumption patterns of Petroleum fell due to increase in prices	4.06 (1.20)	4.02 (1.28)	3.84 (1.09)	4.13 (1.14)	4.52 (0.93)

Out of a total response of 300, 231 respondents, 77% agreed that the uneconomic use of petroleum products had been curtailed by the increase in oil product prices. Mean of response was 3.31 with a standard deviation of 1.22. The result was expected in line with law of demand as regards negative relationship between demand and price. This further clarified the achievement of the Federal Government in wanting to curb local consumption. many of private car-owners confirmed that they have cut use of their private vehicles in preference for public transport on some occasions. Mr. Bayo Bamgbose, the Head of Industrial and Domestic Sales, Area Office, National Oil and Chemical marketing Company claimed, during interview with him that the company

recorded a fall in sales within a year period of the scheme. Public transporters, however, claimed that they hardly make uneconomic use except during servicing of vehicles, which had a been checked. The same downward trends in purchases of oil products are felt by petrol stations around Kaduna. This was revealed during personal interviews.

However, the correlation between incomes of oil product consumers and purchase patterns gave a positive co-efficient of 0.1544 with a significance of 0.004 for all the 300 respondents. The deduction from this is that the people with low income will reduce their purchase with higher proportions than those that are with higher income.

4.3.7 GENERAL

It was found that the general opinion of the respondents was that government had no justification for increasing the price of oil. They assented the claim that there are other policies. About 65% of the 300 respondents were against the policy, 15% were neutral while the rest were in support.

The result could have produced the anticipated effect of the scheme on the populace. It has had the effect of increasing prices of commodities and reducing the real income of consumers. If related to the objective of using the scheme to curb and curtail the smuggling of these products that has not been achieved, it could be the feeling that majority are suffering the "bad deeds" of just a few Nigerians. It signifies the blaming of the inefficiency of the Customs and Excise Department on the rest of the consuming population. It is therefore no surprise that most respondents did not welcome the scheme as a way of economic recovery.

The opinions of respondents were divided as regards whether subsidy removal could cause some undesirable behaviour like theft and robbery. The general notion is "Not sure". The reason for this sort of response was probably that there is very little direct link between this scheme and social misbehaviour. However, those who agreed could have responded from the perspective of oil subsidy removal leading to unemployment, resulting in socially undesirable behaviours.

For clarification and confirmation or validity of these finds, it is considered very necessary to test aforementioned hypotheses.

4.4 HYPOTHESES TESTING

As discussed earlier, the computer results as regards mean values, standard deviations and correlation co-efficient of respondents' responses to questions were used in the test statistics. With the assumption of normal distribution due to large sample size, the formula used for test statistics was:

$$Z = \frac{X - U}{\rho / \sqrt{N}}$$

From central limit thereon, statistics approaches the standard normal distribution when sample size is large. This is general:

X	=	sample mean
U	=	expected value
N	=	sample size
ρ	=	standard deviation

The expected population mean value used in the test statistics arose from the assumption of normal distribution. In this case, therefore, mean, mode and median were all equal. If a question in the questionnaire was employed, the expected value would be 3, arise from the addition of values between 1 and 5 and dividing by 5 i.e. 15/5 = 3. In the data analysis, 3 represented a case of neutrality. For hypotheses employing more than a question, the expected value would be given by the number of questions multiplied by 3. The level of significance was fixed at 0.05. At this level, Z equalled 1.645; because the tests were one tailed. See Appendix VII for details.

HYPOTHESES ONE

H_0: Oil subsidy removal has no effect on transport fares increases

H_a: Oil subsidy removal has effects on the transport fare increases

The two questions relevant to this hypothesis were 5 and 19 in the questionnaire. With two questions added together the expected value became 6.0. The mean value of responses as supplied in the computer print-out was 7.82 with a standard deviation of 1.75 rom a sample size of 300 respondents.

H_o: X = U_o

H_o: X = U_o

The calculated Z-score was 18.01 while the table Z-score was 1.645 for a none-tailed test With the calculated Z-score being greater than the table one, there was no evidence to accept the null hypothesis. Hence the acceptance of the alternative hypothesis as against the null. It could therefore be said from the above the oil subsidy removal had the effects of increasing transport fares.

The value of the Z-score portrayed a case of testing the obvious. Transport fares within and inter the states observed went up after the introduction of petroleum subsidy removal. Taxi fares changed from ₦5.00 to ₦10 in Kaduna while transport fares from Zaria to Kaduna charged from N30.00 to N40.00.

HYPOTHESES TWO

H_o: Oil subsidy removal has no inflationary effects on Nigeria economy

H_o: Oil subsidy removal has inflationary effects on Nigeria economy

Two question were used in extracting the data on the questionnaire as far as this hypothesis was concerned. There were questions 9 and 15. The two questions also gave an expected mean value of 6.00. The mean value for the responses was calculated by computer to be 7.76, with a standard deviation of 2.28, based on the same number of respondents.

$$H_0: \quad X = U_n$$

$$H_a: \quad X = U_a$$

The calculated Z-score was 13.3 while the table counterpart was 1.645 being a one-tailed test. The calculated Z-score was observed and found to be greater than table score. There were not enough reasons to accept the null hypothesis. The alternative hypothesis was therefore accepted. From the discussion and result of test statistics, it could be deducted that the increase in price of petroleum products has inflationary effects on Nigerian Economy.

The inflationary effects could be traced to both cost push and demand pull causes. The subsidy removal increased production costs and prices. High production costs could have led to drops in production level and the greater

scarcity. Scarcity would further increase price since demand was and is greater than supply because of large population size and below capacity production of producers.

HYPOTHESES THREE

H_o: Oil subsidy removal has no adverse effects on the industrial sector of the economy

H_o: Oil subsidy removal has adverse effects on the industrial sector of the economy

Unlike the first two tested hypotheses, three questions were used in generating the required data. These questions were numbers 6, 22 and 25 on the questionnaire. The summing of attached values for these questions gave an expected population mean value of 9.0. The mean for samples, represented by respondents was 10.48 and had a standard deviation of 2.64. The level of ssignificance remained at 0.05.

H	H_o:	X	=	U_o		H_o:	X	=	9.00
	H_a:	X		U_o		H_a:	X		9.00

The calculated Z-score was 10.5 while the table gave a reading of 1.645. The calculated value was greater than the one in the table, hence the rejection of the null hypothesis and therefore acceptance of the alternative hypothesis. The evidence tended to imply that the oil subsidy removal has got no adverse effects on the industrial sectors of the economy.

The link between industrial sector and the subsidy removal was connected through the effects of increased production cost. The implication of this could either be a reduction in profits or increase in price, each of these results would adversely affect the producer. Increased prices of products would render the products incapable of competing with unaffected products, most especially in the international market. A reduction in profit could bring embarrassments from shareholders because of fall in profits. The share-prices of such companies may fall and as such high turnover of stocks. The finance of the company could be affected through high leverage to take care of withdrawing shareholders.

HYPOTHESIS FOUR

H_o: Oil subsidy removal has not generated unemployment within the economy

H_a: Oil subsidy removal has generated unemployment within the economy

The number of questions treated for this exercise were two. The questions were 3 and 23 in the questionnaire. With only two questions, the expected mean value for the population was 6.00 from the assumption of normal distribution. The mean value for samples was 6.15 while the standard deviation was computed to be 1.615.

The calculated *Z*-score was 1.603 which was found to be less than 1.645 in the table. The null hypothesis was, therefore, accepted. Implying that there was no evidence to support the claim of unemployment resulting from the policy of subsidy removal. The present rate of unemployment cannot be attributed to the policy. Although some industries have sacked workers because of economic problems, many other factors could be held responsible.

HYPOTHESIS FIVE

H_o: Oil subsidy removal has no negative impacts on agriculture and living condition of the rural dwellers

H_a: Oil subsidy removal has negative impacts on agriculture and living condition of the rural dwellers

The questions used were three in number and these were 14, 16 and 21 in the questionnaire. The expected population mean was 9.00 while that of the sample was 10.56 and the standard deviation was 2.17. The calculated Z-score was 12.00 which was greater than 1.645. The null hypothesis was, therefore, rejected while alternative was accepted. It could be inferred that the policy of subsidy removal had brought negative repercussions on the agricultural sectors as well as the living condition of the rural dwellers.

For now the cost of production of farm produce using mechanical methods have increased and furthermore most farmers find it difficult to hit the urban markers because of the high transport cost.

HYPOTHESIS SIX

H_o: There was significant positive relationship between income and the feeling of impacts of petroleum subsidy removal

H_a: There was no significant positive relationship between income and the feeling of impacts of petroleum subsidy removal

The formula employed was: $t = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}}$

r was given as 0.1544 in the computer print-out. The value of t was 2.70. As a result 2.70 being greater than 1.645, the null hypothesis was rejected. This implies that there was no significant positive relationship between income level and the feeling of the impacts of petroleum subsidy removal.

This result was contrary to the claim that prices increase in petroleum products were meant to hit the rich few and urban elites. The effect of removal was being felt by the poor as well as the rich.

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CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATION

5.1 SUMMARISATION AND DISCUSSION OF FINDINGS

The issue of oil subsidy removal on locally consumed petroleum products arose from the need to bail out the economy from the woods. It was among the package of Structural Adjustment Programme introduced on 1st January, 1986. the rationale behind the introduction was to curb and curtail smuggling of these products across the boarders as well as to reduce the opportunity cost of consuming them locally rather than selling them abroad. The policy had existed for a little over a year and requires an evaluation. This is more so when a further increase in the prices of the products is being contemplated, to reflect the present value of Naira that had depreciated.

The study was carried out within a period of five months (August to December 1995). It has the objective of investigating the impacts of subsidy removal on the Nigerian economy. Considering the large scope and multifarious aspect of the economy, it was rather impossible to touch all areas affected. For this

reason, the attention of the study was focussed on effects on transport fares, inflation, smuggling, unemployment, agriculture, industry, products consumption and standard of living.

This chapter, which is the last, gives a summary of finding in course of study. Recommendations were also made, to serve as useful tools for the government in preparedness for the proposed further increase.

The revelations and findings in this study, to a large extent, have bearings with some of the reviewed literatures despite opposing opinions among the writers.

It was found that the policy of subsidy removal has led to increase in transport fares. The fares paid per trip, by passengers, have risen in different proportions. With the subsidy removal leading to increased prices of oil products, the burden of the price increase is shifted on to the passengers.

The policy, within the one year of existence has been inflationary. The increase in prices of petroleum products has increased the prices of commodities in the markets. This is so because transportation and production costs have gone up.

This is however enhanced by scarcity of commodities due to below capacity operations of manufacturing companies and Autonomous Foreign Exchange Market (AFEM), reducing the Naira value.

The Industrial sector of the economy also has a taste of the effects. The profitability of companies reduced. Increased transport and production costs, leading to commodity price increase, apart from reducing demand for such products, makes the products comparatively uncompetitive with the imported ones. This causes stock piling, further increasing costs which could generate unemployment if companies had to cut staff strength to reduce costs.

During the course of study, it was discovered that subsidy removal, per se, did not lead to unemployment. It could, however, be used as a means of generating employment, especially in the rural areas. This could be so if rural infrastructures introduced served as incentives to farmers for increased food production that would require extra hands. However, the most dreaded monster, unemployment, could result from the policy if increased oil products prices result in increased cost that forces output downwards.

As planned and expected by government, there has been a fall in the quantity of locally consumed petroleum products. This follows the law of demand and negative relationship between price and quantity demanded. Uneconomic uses of these products have been curtailed. The sales figures of petrol stations and oil marketing companies confirm this.

Smuggling, the cankerworm of the Nigerian economy has not been curbed to any reasonable extent. Many cases of petroleum product smuggling across the borders have been reported in the media of recent. The cause of this still remains the relatively low prices of the products in this country as compared with neighbouring ones. This had deprived the country of sources of badly needed foreign exchange for development at the expense of a greedy few.

The impact in the sphere of infrastructural development is minimal. The much expected increased productivity from the agricultural sector in the form of increased food production, curbing inflationary tendencies, have not resulted. It could be concluded that benefits of the policy on agriculture ad rural dwellers for now are minimal and unglaring. It is too soon for such impacts to be noticed.

It was also discussed that the standard of living of Nigerians has fallen as a result of the considered policy. The income and wage levels are stagnant in the face of continuously rising commodities prices and transport fares. The real income has fallen alongside the Naira value, as dictated by Autonomous Foreign Exchange Market (AFEM).

5.2 CONCLUSIONS

In line with the objective of this study, it has been found that a part of the rationale for the introduction of the scheme has been achieved while the other part has not. There has been a reduction in the locally consumed petroleum products within the country whereas smuggling of these products still continues because the Customs and Excise Department and other security agents at the border towns seems to be unable to cope.

The policy has caused inflation, increased transport fares, low profitability for manufacturing companies and falling standard of living which are negatively related to the economic development. It has also resulted in gradual

development of rural areas, economic uses of petroleum products and generation of savings for government through unpaid subventions.

It is the considered opinion of the researcher that time elements have to do with the findings as regards this one year scheme, and so further findings in the area or topic may not reveal the present results. The scheme would have been firmly established. It is on this basis that suggestions are given.

5.3 RECOMMENDATIONS AND SUGGESTIONS FOR FUTURE

The need for this section arose from the yearnings of research endeavours of this nature to evolve certain suggestions to guide in future implementation of such policies or correcting anomalies in the present approach to the policy.

It is the suggestion of this research that the Federal Government should go ahead with the introduction of further increases to reflect the present Naira value. However, the increases should be spread over a long period of time. Since smuggling activities continue unabated, price increase would reduce margin

between pries in this country and those of neighbouring countries. This would render smuggling unprofitable, thereby curbing it.

The increases in price in phases would allow the effects of each segmental increase to be absorbed into the economy, otherwise the effects would erode whatever confidence the public has had in the structural adjustment exercises.

Furthermore, the government has been able to save several billions of Naira. This would however require good management of these resources for effectiveness. The sum, used to develop rural infrastructures, would benefit all and sundry. The Petroleum Trust Fund (PTF) should see that the quality of rural roads constructed reflects durability and maintainability to reduce cost. From this, prices of food products will be lowered and the imported product pries would be stabilized, this stemming inflationary tendencies. The present increases in prices and fares are mere reflections of the present economic realities.

The saved subvention should be strictly used for the development of rural areas. This would widen the agricultural base of the economy and so increase the

utilization of industries capacities of agro-allied industries, since local sourcing of raw materials would have increased. By this action, employment would be generated as well as accruing revenue to the government.

Lastly, the consumers should economies the use of the products to conserve energy or the government can develop other sources of energy like coal and solar to reduce dependence on oil.

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APPENDIX I

POST GRADUATE SCHOOL
DEPARTMENT OF BUSINESS ADMINISTRATION
AHMADU BELLO UNIVERSITY
ZARIA

Dear Sir/Madam,

QUESTIONNAIRE

As part of the requirement for the award of the Masters Degree in business Administration (MBA), students of this Department are required to undertake an investigation of an organizational or economic phenomenon. Without meeting this requirement, no student can graduate.

To meet this requirement, I am therefore looking at the impact of fuel price increase on the Nigerian economy. I would be most grateful if you could help me by completing the attached questionnaire. Your answers will be treated with the strictest confidence and as you can see that your name is not required. furthermore, no answer is right or wrong.

Thank you.

Yours faithfully,

OLASUPO A. J. (MR)

PART ONE

INSTRUCTIONS

Please mark 'X' where appropriate in the box(es) provided.

PERSONAL QUESTIONS

1. Your Sex: ☐ Male ☐ Female

2. Age:
   - ☐ Below 20 years
   - ☐ 21 - 40 years
   - ☐ 41 - 60 years
   - ☐ Above 60 years

3. Occupation/Profession:
   - ☐ Production/Purchasing Manager
   - ☐ Driver
   - ☐ Transporter
   - ☐ Housewife/Unemployed/Student
   - ☐ Others

4. Do you use Petroleum products like Petrol, Oil, Gas, Diesel and Kerosene?

   ☐ Yes ☐ No

5. To what use do you put these products?
   - ☐ Cooking
   - ☐ Operating Machines
   - ☐ Vehicles
   - ☐ Others

6. Income level
   - ☐ Below N5,000 per annum
   - ☐ N5,001 - N10,000
   - ☐ N10,001 - 15,000
   - ☐ Above N15,000

7. For how long have you been using the products mentioned in question 4 above?
   - ☐ Below 5 years
   - ☐ Above 5 years

8 Do you know that the prices have changed recently?

☐ Yes ☐ No

PART TWO

INSTRUCTIONS

Please mark 'X' for your appropriate response to the question below.

KEY:
"SA" **Stands for STRONGLY AGREE**
"A" **Stands for AGREE**
"N" **Stands for DISAGREE**
"D" **Stands for DISAGREE**
"SD" ***Stands for STRONGLY DISAGREE***

		SA	A	N	D	SD
1.	The government is not justified in removing petroleum subsidies.	5	4	3	2	1
2.	Consumption patterns of petroleum products fell due to increase in their prices.	5	4	3	2	1
3.	The subsidy removal has not resulted into unemployment in rural areas.	5	4	3	2	1
4.	Par value of Naira cannot be attained through subsidy removal.	5	4	3	2	1
5.	Increased transport fare is a consequence of oil price increase.	5	4	3	2	1
6.	Profitability of companies using oil products as inputs have been adversely affected by the price increase of petroleum products.	5	4	3	2	1
7.	Increased oil prices can bring about undesirable behaviours like theft and robbery.	5	4	3	2	1
8.	Subsidy removal could not result in effective countrywide distribution of petroleum products.	5	4	3	2	1
9.	Increases in commodity prices can be accounted for by changes in oil price.	5	4	3	2	1
10.	Subsidy removal was a sacrifice to the fatherland.	5	4	3	2	1
11.	Government is in a better position to deal with economic problems without oil subsidy	5	4	3	2	1

		SA	A	N	D	SD
12.	New prices of petroleum products are unrealistic	5	4	3	2	1
13.	Smuggling of petroleum products across the border has not reduced since subsidy removal.	5	4	3	2	1
14.	Rural dwellers are now worse off because of subsidy removal.	5	4	3	2	1
15.	Removal of oil subsidy has to a reasonable extent influenced the inflationary tendency in the country.	5	4	3	2	1
16.	Oil price increase has not led to increase in food production.	5	4	3	2	1
17.	Economy can be improved with subsidy still being granted to the consumers.	5	4	3	2	1
18.	It does not pay the citizens if oil price is increased to gain more foreign exchange.	5	4	3	2	1
19.	Changes in oil prices is much more responsible for increase in transport fare than spare part costs.	5	4	3	2	1
20.	Uneconomic use of petroleum products have been curtailed through price increase of oil products.	5	4	3	2	1
21.	Rural infrastructures are not enough compensation for oil subsidy removal.	5	4	3	2	1
22.	Production costs have gone up in companies using oil product as inputs.	5	4	3	2	1
23.	Employment problems can be solved through increased oil prices.	5	4	3	2	1
24.	Increased local oil prices will not increase Nigerian quota with OPEC.	5	4	3	2	1
25.	Industrial production capacity has fallen due to increased prices of petroleum products.	5	4	3	2	1

APPENDIX II

SUMMARY OF RESPONSES TO QUESTIONS

(ALL RESPONDENTS)

QUESTION	5 SA	4 A	3 NS	2 D	1 SD	MEAN	STANDARD DEVIATION
1	136	58	44	36	26	3.77	1.34
2	148	84	32	21	15	4.06	1.20
3	15	45	157	50	33	2.84	0.99
4	153	74	33	30	8	4.09	1.17
5	204	74	5	14	3	4.51	0.91
6	84	88	67	38	23	3.54	1.26
7	27	40	135	70	28	2.86	1.06
8	26	82	78	89	25	2.95	1.13
9	114	100	42	25	19	3.85	1.23
10	183	54	17	27	19	4.15	1.30
11	212	52	18	11	7	4.49	0.98
12	42	78	94	47	39	3.09	1.24
13	192	62	33	7	6	4.40	0.99
14	77	103	74	25	21	3.00	1.19
15	145	84	13	24	24	3.91	1.40
16	42	174	32	32	20	3.59	1.10
17	179	57	27	23	14	4.18	1.22
18	198	48	23	16	15	4.32	1.17
19	59	94	62	63	22	3.32	1.24
20	39	138	28	72	23	3.31	1.22
21	111	42	55	38	54	3.37	1.55
22	166	73	41	13	7	4.24	1.06
23	61	52	140	34	13	1.35	1.10
24	84	55	130	22	9	3.58	1.10
25	34	39	69	127	31	2.71	1.17

SOURCE: FIELD SURVEY (AUGUST -- DECEMBER 1995)

APPENDIX III

SUMMARY OF RESPONSES FOR CAR OWNERS

QUESTION	5 SA	4 A	3 NS	2 D	1 SD	MEAN	STANDARD DEVIATION
1	48	21	8	9	4	4.11	1.19
2	42	31	3	5	9	4.02	1.28
3	5	17	37	16	15	2.79	1.11
4	45	25	13	5	2	4.18	1.02
5	53	27	2	8	0	4.39	0.91
6	23	33	19	10	5	3.66	1.14
7	11	13	33	21	12	2.89	1.19
8	7	30	21	18	14	2.98	1.22
9	35	30	10	11	4	3.90	1.18
10	46	23	7	7	7	4.04	1.27
11	62	21	4	0	3	4.54	0.86
12	22	17	32	7	12	3.33	1.30
13	46	25	13	3	3	4.20	1.03
14	25	26	24	6	9	3.57	1.25
15	42	26	4	9	9	3.92	1.35
16	12	39	16	10	13	3.30	1.26
17	47	21	9	7	6	4.07	1.24
18	54	14	12	5	5	4.19	1.20
19	30	23	14	15	8	3.58	1.34
20	16	47	7	11	9	3.56	1.21
21	25	22	15	13	15	3.32	1.44
22	54	24	10	1	1	4.43	0.82
23	31	21	25	11	2	3.76	1.13
24	31	20	34	4	1	3.84	0.99
25	16	17	20	29	8	3.04	1.26

SOURCE: FIELD SURVEY (AUGUST -- DECEMBER 1995)

APPENDIX IV

SUMMARY OF RESPONSES FOR COMMUTERS AND PUBLIC TRANSPORTERS

QUESTION	5 SA	4 A	3 NS	2 D	1 SD	MEAN	STANDARD DEVIATION
1	31	17	21	16	12	3.44	3.47
2	29	30	18	8	3	3.84	1.09
3	3	12	60	12	1	3.05	0.68
4	51	26	5	6	0	4.39	0.87
5	64	18	1	3	2	4.58	0.87
6	18	22	35	7	6	3.44	1.11
7	7	14	35	19	13	2.81	1.12
8	11	24	24	23	6	3.13	1.14
9	31	34	10	8	5	3.89	1.16
10	53	17	5	8	5	4.19	1.23
11	61	17	6	4	0	4.53	0.82
12	12	32	25	14	5	3.36	1.09
13	58	14	13	2	1	4.43	0.91
14	19	33	20	9	7	3.55	1.17
15	40	30	4	7	7	4.01	1.25
16	8	60	5	9	6	3.63	1.02
17	57	15	6	7	3	4.32	1.12
18	58	16	7	4	3	4.39	1.04
19	8	27	21	31	1	3.11	1.03
20	11	26	7	37	7	2.97	1.25
21	35	8	17	12	16	3.39	1.56
22	41	33	11	1	2	4.25	0.88
23	17	13	51	6	1	3.44	0.92
24	26	18	38	2	4	3.68	1.07
25	7	11	18	41	11	2.57	1.11

SOURCE: FIELD SURVEY (AUGUST -- DECEMBER 1995)

APPENDIX V

SUMMARY OF RESPONSES FOR DOMESTIC USERS

QUESTION	5 SA	4 A	3 NS	2 D	1 SD	MEAN	STANDARD DEVIATION
1	25	15	10	6	54	3.85	1.26
2	32	13	8	5	2	4.13	1.14
3	4	12	25	8	11	2.83	1.15
4	27	12	12	8	1	1.93	1.16
5	39	19	1	1	0	4.60	0.62
6	18	21	6	13	2	3.67	1.22
7	4	9	31	14	2	2.98	0.89
8	5	18	16	19	2	3.08	1.05
9	21	22	10	3	4	3.88	1.15
10	36	7	4	9	4	4.03	1.38
11	43	8	4	2	3	4.43	1.10
12	4	12	20	12	12	2.73	1.19
13	38	12	6	2	2	4.37	1.03
14	10	20	19	7	4	3.42	1.11
15	32	14	2	2	10	3.93	1.49
16	17	36	1	5	1	4.05	0.89
17	30	14	8	3	5	4.02	1.27
18	40	6	3	5	6	4.15	1.40
19	10	23	13	9	5	3.40	1.18
20	7	29	8	14	2	3.42	1.08
21	25	8	10	9	8	3.55	1.49
22	40	7	4	6	3	4.25	1.24
23	9	13	24	6	8	3.15	1.21
24	13	11	25	8	3	3.38	1.12
25	7	4	14	30	5	2.63	1.19

SOURCE: FIELD SURVEY (AUGUST -- DECEMBER 1995)

APPENDIX VI

SUMMARY OF RESPONSES FOR INDUSTRIAL USERS

QUESTION	5 SA	4 A	3 NS	2 D	1 SD	MEAN	STANDARD DEVIATION
1	30	5	14	5	6	3.80	1.40
2	43	10	3	3	1	4.52	0.93
3	3	4	33	14	6	2.73	0.92
4	30	11	3	11	5	3.83	1.43
5	46	10	1	2	1	4.63	0.82
6	23	12	7	8	10	3.50	1.54
7	3	4	36	16	1	2.86	0.77
8	1	10	17	29	3	2.62	0.89
9	25	14	12	3	6	3.82	1.31
10	46	7	1	3	3	4.50	1.10
11	46	6	4	3	1	4.55	0.96
12	2	17	17	14	10	2.78	1.14
13	50	9	1	0	0	4.82	0.43
14	21	24	11	3	1	4.02	0.95
15	29	14	3	6	8	3.83	1.46
16	4	38	10	8	0	3.63	0.80
17	43	7	4	6	0	4.45	1.00
18	46	12	1	1	0	4.77	0.59
19	6	21	14	8	8	3.25	1.26
20	5	36	5	10	4	3.47	1.08
21	26	4	11	4	15	3.37	1.67
22	31	8	15	5	1	4.05	1.13
23	3	4	40	11	2	2.92	0.76
24	14	4	33	8	1	3.37	1.04
25	3	7	17	27	6	2.57	1.00

SOURCE: FIELD SURVEY (AUGUST -- DECEMBER 1995)

APPENDIX VII

WORKOUTS ON HYPOTHESES

Formula $\frac{X - U}{}$

Hypotheses One: $\frac{7.82 - 6.00}{1.75 \quad 300}$

$= 1.82$

$\frac{1.75}{17.32} = \frac{1.82}{0.101}$

$= \underline{18.01}$

Hypotheses Two $\frac{7.76 - 6.00}{2.28 \quad 300}$

$= 1.76$

$\frac{2.28}{17.32} = \frac{1.76}{0.132}$

$= \underline{13.3}$

Hypotheses Three: $\frac{10.5 - 9.000}{2.44 \quad 300}$

$= 1.5$

$\frac{2.64}{17.32} = \frac{1.5}{0.15}$

$= \underline{10.00}$

Hypotheses Four: $\frac{6.15 - 6.00}{1.62 \quad 300}$

$= \frac{0.19}{1.62}$

$17.32 = \frac{0.15}{0.094}$

$= \underline{1.61}$

Hypotheses Five: $\frac{10.56 - 9.00}{2.2 \quad 300}$

$= \frac{1.56}{2.2}$

$300 = \frac{1.56}{0.13}$

$= \underline{12.0}$

Hypotheses Six: $t = \frac{r \quad n - 2}{1 - r^2}$

$r = 0.1544$

$t = \frac{0.1544 \quad (300 - 2)}{1 - 1544^2}$

$= \frac{0.1544 \quad 298}{1 - 0.024}$

$= \frac{0.1544 \quad (17.3)}{0.98}$

$= \frac{2.67}{0.99}$

$= \underline{2.70}$