THE PERFORMANCE EVALUATION OF NIGERIA NATIONAL PETROLEUM CORPORATION (NNPC)

(A CASE STUDY OF ADLAK INVESTMENT LIMITED)

BY

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Ok

DEDICATION

This report is dedicated to the Glory of God; it can only be God throughout my life and Academic pursuit. It has not been easy going through lots of time and financial constraints. His name is praised forever.

Also to my Parents (MR/MRS) MUHAMMAD I equally Dedicated this Research work to you all. You're all wonderful.

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ABSTRACTS

The oil industry which is the leading sector of the economy should have some spill over into the other sectors of the economy.

The Nigerian economy has become dependent oil revenues over the past decades. During the 1986-92 periods, oil export revenues increased at an average of 13 percent per annum which GDP measure in current US Dollars, decrease by an average while oil export revenues alongside the continuing decline of the non-oil economy implies higher dependency.

Over the years, the contributions of the oil industry to the growth of Nigeria economy are great. On this promise, the researchers want to evaluate the performance of the NNPC on the Economic development of Nigeria.

The aim of this study is to evaluate the contribution of NNPC in Nigeria economic development, and to know if there is a relationship between NNPC's performance and the economic development of Nigeria. This research work would be of importance to policy makers, researchers and the Nigerian government in improving the economy of the country.

In the methodology, the data used for this study is secondary data from Adlak investment limited. The data are been analyzed using regression analysis.

The findings from the survey revealed that:

-NNPC contributes massively towards the economic development of Nigeria.

-There is a significant relationship between the performance of NNPC and the economic development of Nigeria

CHAPTER ONE

1.0. BACKGROUND OF THE STUDY

The Nigerian national petroleum corporation (NNPC) was established on April 1, 1977 as a merger of the Nigerian National Oil Corporation and the Federal Ministry of Mines and Steel. NNPC by law manages the joint venture between the Nigerian federal government and a number of foreign multinational corporations, which include Royal Dutch Shell, Agip, ExxonMobil, Chevron, and Texaco (now merged with Chevron). Through collaboration with these companies, the Nigerian government conducts petroleum exploration and production. The NNPC Towers in Abuja is the headquarters of NNPC Consisting of four identical towers. NNPC also has zonal offices in Lagos, Kaduna, Port Harcourt and Warri. It has an international office located in London, United Kingdom. In addition to its exploration activities, the Corporation was given powers and operational interests in refining, petrochemicals and products transportation as well as marketing. Between 1978 and 1989, NNPC constructed refineries in Warri, Kaduna and Port Harcourt and took over the 35,000-barrel Shell Refinery established in Port Harcourt in 1965. In 1988, the NNPC was commercialized into 12 strategic business units, covering the entire spectrum of oil industry operations: exploration and production, gas development, refining, distribution, petrochemicals, engineering, and commercial investments. Currently, the subsidiary companies include:

- National Petroleum Investment Management Services (NAPIMS)
- Nigerian Petroleum Development Company (NPDC)
- The Nigerian Gas Company (NGC)
- The Products and Pipelines Marketing Company (PPMC)
- Integrated Data Services Limited (IDSL)
- Nigerian LNG limited (NLNG)
- National Engineering and Technical Company Limited (NETCO)

- Hydrocarbon Services Nigeria Limited(HYSON)
- Warri Refinery and Petrochemical Co. Limited (WRPC)
- Kaduna Refinery and Petrochemical Co. Limited(KRPC)
- Port Harcourt Refining Co. Limited (PHRC)

In addition to these subsidiaries, the industry is also regulated by the Department of Petroleum Resources (DPR), a department within the Ministry of Petroleum Resources. The DPR ensures compliance with industry regulations; processes applications for licenses, leases and permits, establishes and enforces environmental regulations. The DPR, and NAPIMS, play a very crucial role in the day to day activities throughout the industry. According to Onoh J.K (1995), when Nigeria gained independence in 1960, oil production had been established in the country and it was exporting over 170,000 barrels per day. It was Gluf oil company that struck off shore oil on the Okan structure of the then Bendel state (now, Edo state) in 1964. The licenses that were granted these companies were both offshore and onshore. With these commercial discoveries in petroleum products, the socio-economic and political development of Nigeria began to crystallize as well as its internal dynamics ethnicity. All crude oil produce before the mid-sixties was exported because of no-availability of local refineries, while domestic demand of petroleum products was met by imports. However the need to conserve foreign exchange creates job opportunities to some extent and other benefits derivable from setting up refineries locally prompted the government of Nigeria to establish and commission a refinery in Port-Harcourt in 1965. The refinery has processing capacity 35,000 barrels per day to meet the increasing domestic demand while excess fuel oil was exported. Michael Tanzer (1980) states that the demand for oil products continued to outstrip supply which made the government to officially open the Warri refinery in 1978 with a total capacity of 100,000 barrel per day, thereby giving the country its present day potential capacity of 260,000 barrels per day. These were designed to refine 50 percent Nigerian light crude and 50 percent medium crude. Expansion work is currently going on at both the Kaduna and Warri refineries, with a fourth refinery being constructed near port-Harcourt at a cost of about N750 million. It is hoped that when the fourth refinery is completed, it will increase domestic refinery capacity by 150,000 barrels per day, and render unnecessary our offshore processing arrangement by which Nigerian crude is taken abroad

for refining and the products are imported to meet the short fall in domestic requirements. As the output from all the refineries will then exceed demand, there will be a surplus available for export. The evaluating the performance of the Nigerian national petroleum corporation (NNPC) has become necessary since the over dependency of the Nigerian government on oil. The oil sector being the most important sector of the Nigerian economy has to be properly managed to avoid economic failure or recession.

1.1. STATEMENT OF THE GENERAL PROBLEM

As the leading sector of the economy, the oil industry should have some spill over into the other sectors of the economy. The Nigerian economy has become dependent oil revenues over the past decades. During the 1986-92 periods, oil export revenues increased at an average of 13 percent per annum which GDP measure in current US Dollars, decrease by an average while oil export revenues alongside the continuing decline of the non-oil economy implies higher dependency. Over the years, the contributions of the oil industry to the growth of Nigeria economy are great. On this promise, the researchers want to evaluate the performance of the NNPC on the Economic development of Nigeria.

1.2. AIM AND OBJECTIVES OF THE STUDY

The following are the aims and objectives of the study

Ø To evaluate the contribution of NNPC in Nigeria economic development.

Ø To determine the relationship between NNPC's performance and the economic development of Nigeria.

1.3. SIGNIFICANCE OF THE STUDY

This research work would be of importance to policy makers, researchers and the Nigerian government in improving the economy of the country. The findings from the survey would help the government in monitoring the performance of the NNPC and to overhaul the establishment if need be.

1.4. RESEARCH HYPOTHESIS

H0: There is no significant relationship between the performance of NNPC and economic development of Nigeria.

H1: There is a significant relationship between the performance of NNPC and economic development of Nigeria.

1.5. SCOPE AND LIMITATIONS OF THE STUDY

This study is restricted to the performance evaluation of the Nigerian national petroleum corporation (NNPC) in its contribution to the economic development of Nigeria. Also insufficient fund tends to impede the efficiency of the researcher in sourcing for the relevant materials, literature or information and in the process of data collection, likewise the researcher simultaneously engages in this study with other academic work. This consequently will cut down on the time devoted for the research work.

1.6 HISTORICAL BACKGROUND OF THE STUDY

Adlak Investment limited was chosen as a case study in which research will be conducted for my thesis. Adlak Investment limited was formerly known as Exxon Mobil Corporation before it changed its name to Adlak Investment limited in 2015. The company was founded in 1951 and is based in Lagos then Established here in Iseyin in 2000. Exxon Mobil Corporation, an oil company engages in the offshore production of crude, condensate and natural gas liquid. Adlak took over the assignment since owning the corporation in 2015. Adlak Investment limited is also an operator of the NNPC/MPN joint venture plans to carry out Hydro Cyclone sand checks on flowing wells located in their joint venture. The company operates in the integrated oil and gas industry; they are also engaged in marketing Petrochemicals (Gasoline), motor oil and lubricants. Through its wholly owned subsidiaries Adlak Investment limited operates currently in Iseyin town. Its Administrative headquarter located along Iseyin to Oyo Express way beside St. Paul Anglican church.

Adlak Investment limited has six outlets working staff, a lube bay and an oil shore to its credit.

To the Glory of God all of these credits were brought in place by a sole proprietor in person of Mr. A. Yusuf pending the time the corporation was sold to him by Exxon Mobil Corporation. The company has been running since 2015 and still in existence till this present time as the oil sector being the most important sector of the Nigerian economy has to be properly managed to avoid economic failure or recession.

1.7. DEFINITION OF TERMS

Ø CRUDE OIL: Crude oil, commonly known as petroleum, is a liquid found within the Earth comprised of hydrocarbons, organic compounds and small amounts of metal.

Ø DEVELOPMENT: A gradual growth of something so that it becomes more advanced, stronger, etc.

Ø REFINERY: A factory where a substance such as oil is refined.

Ø NNPC: Nigerian national petroleum corporation.

Ø GDP: Gross domestic product.

Ø REVENUE: The total income that accurse to the government of a country from various sources, i.e. the money that is received by government from taxes paid by oil companies, organization or firms.

Ø OPM: Organizational performance management

CHAPTER TWO

2.0 LITERATURE REVIEW

This chapter describes a detailed review of the various methods used for establishing regression models. The performance characteristics and usefulness of the various models are critically examined.

In statistical modeling, **regression analysis** is a set of statistical processes for estimating the relationships between a dependent variable (often called the 'outcome' or 'response' variable, or a 'label' in machine learning parlance) and one or more independent variables (often called 'predictors', 'covariates', 'explanatory variables' or 'features'). The most common form of regression analysis is linear regression, in which one finds the line (or a more complex linear combination) that most closely fits the data according to a specific mathematical criterion. For example, the method of ordinary least squares computes the unique line (or hyper plane) that minimizes the sum of squared differences between the true data and that line (or hyper plane). For specific mathematical reasons (see linear regression), this allows the researcher to estimate the conditional expectation (or population average value) of the dependent variable when the independent variables take on a given set of values. Less common forms of

regression use slightly different procedures to estimate alternative location parameters (e.g., quartile or Necessary Condition Analysis[1]) or estimate the conditional expectation across a broader collection of non-linear models (e.g., nonparametric regression).

Regression analysis is primarily used for two conceptually distinct purposes.

First, regression analysis is widely used for prediction and forecasting, where its use has substantial overlap with the field of machine learning.

Second, in some situations regression analysis can be used to infer causal relationships between the independent and dependent variables. Importantly, regressions by themselves only reveal relationships between a dependent variable and a collection of independent variables in a fixed dataset. To use regressions for prediction or to infer causal relationships, respectively, a researcher must carefully justify why existing relationships have predictive power for a new context or why a relationship between two variables has a causal interpretation. The latter is especially important when researchers hope to estimate causal relationships using observational data.

2.1 CONCEPT AND MEANING OF EVALUATION

Evaluation is a systematic determination and assessment of a subject's merit, worth and significance, using criteria governed by a set of standards. It can assist an organization, program, design, project or any other intervention or initiative to assess any aim, realizable concept/proposal, or any alternative, to help in decision-making; or to ascertain the degree of achievement or value in regard to the aim and objectives and results of any such action that has been completed.

The primary purpose of evaluation, in addition to gaining insight into prior or existing initiatives, is to enable reflection and assist in the identification of future change. Evaluation is often used to characterize and appraise subjects of interest in a wide range of human

enterprises, including the arts, criminal justice, foundations, non-profit organizations, government, health care, and other human services. It is long term and done at the end of a period of time. **Tyler** defined evaluation as "a systematic process of determining the extent to which educational objectives are achieved by pupils". This definition indicates that evaluation is a systematic process, and it omits tile casual, informal or uncontrolled observation of the pupils. The definition also implies that an objective of education has to be identified in advance. Without predetermined objectives, it is not possible to judge the progress, growth and development of students. Also, according to **Crombach** evaluation is "the collection and use of information to make decisions about an educational programme" while **Wheeler** defined evaluation as a more general judgment of the outcome of a programme, which involves the use of observations, various tests, questionnaires, interviews, etc. His emphasis was on the processes of educational evaluation.

2.1.2 PERFORMANCE EVALUATION

Performance Evaluation is defined as a formal and productive procedure to measure an organization work and results based on their annual returns. It is used to gauge the amount of value added by an organization in terms of increased business revenue, in comparison to industry standards and overall employee return on investment (ROI).

All organizations that have learned the art of "winning from within" by focusing inward towards their employees rely on a systematic performance evaluation process to measure and evaluate employee performance regularly. Ideally, employees are graded annually on their work anniversaries based on which they are either promoted or are given suitable distribution of salary raises. Performance evaluation also plays a direct role in providing periodic feedback to employees, such that they are more self-aware in terms of their performance metrics.

2.1.3 APPROACHES TO ORGANISATION PERFORMANCE MANAGEMENT

Organizational performance management is so much more than the end of the year appraisal...it's about translating goals into results. It is a comprehensive evaluation of not just are you doing things right, but whether you are doing the right things. Organizational performance management focuses on individual employees, as well as on teams, programs, processes, and the organization as a whole.

Federal agencies have different challenges when defining and measuring results than private sector organizations, whose results are usually tied exclusively to financial goals. Federal agencies are also required to comply with complex statutes, regulations, executive actions, and/or case law that not only govern their programs, but define Federal employment law.

OPM offers comprehensive consulting to determine the best organizational strategies, analyze current efforts against those benchmarks, and update workforce strategies to improve organizational performance and drive mission accomplishment in a manner consistent with applicable law.

2.1.4 REASONS FOR PERFORMANCE EVALUATION

Here are some of the key reasons why performance evaluation is important for every company.

- **IT LETS THE REAL PERFORMERS STAND OUT**: Sharing frequent feedback is vital. Often, after the employees spend their time in an organization for a while and get promoted higher up the ladder, they tend to stop contributing to the overall productivity. Regular performance evaluation brings out this fact and keeps them motivated to continue contributing towards the growth of their company. This can be used as an alarm for the old employees if, after a point, they have stopped performing but still occupy higher positions, blocking the way for the newcomers.
- **IT SETS LEARNING EXAMPLES**: At times, startups need to notify the pain points of the employee, where they are lacking. Regular evaluation helps startups

formulate their own performance matrix that will help them in the long run. A fool-proof performance analysis helps identify employees who are performing and those who are lagging.

- **IT KEEPS YOUR EMPLOYEES HAPPY**: Often, it is seen that the best performers speak less about their achievements unless someone points them out. At the same time, older employees with minimal contributions try to overshadow others, thus creating contempt among co-workers. Performance evaluation is an impartial way that brings out the best performers out of the shadows. It keeps the employees happy and satisfied with the work they are doing. They get a chance to speak about their contributions to the company in front of an impartial panel and hence stay assured that their growth in the organization will be worth the contribution.
- **IT MAINTAINS EQUALITY BETWEEN ALL THE EMPLOYEES**: Performance evaluation brings a manager and an executive on the same table. At times, it happens that managers take all the credit from the juniors who have done all the work. This happens because a certain employee has set their credibility in the organization after spending some time while others still need that time to prove their worth. Performance evaluation is also a time of leadership assessment and understanding the leaders' capability of dealing with tough situations. This practiced impartially and brings a lot more to the table than which employee is worth the appraisal and who is not.
- **IT BRINGS OUT THE START PERFORMERS OF THE ORGANIZATION IN OPEN**: Star performers share a few certain traits. According to Kets de Vries, professor of leadership development, "Star performers of the organizations are super heroes as well as paradoxes. They can think long-term and execute well short-term, they take calculated risks and take responsibility for their actions, combine optimism

with realism, have great tenacity and high energy. The list seems endless." At times, in the daily rush of the office, these performers are often lost in the shadows doing their work. Performance evaluation brings out this bunch from the shadows and gives them exposure in front of the senior management, who later work towards grooming such employees.

- **IT MOTIVATES THE UNDERPERFORMING EMPLOYEES**: It is often noticed that certain employees start underperforming after working for a while. The reason may not necessarily be that having spent a lot of time in the organization they don't need to prove their worth. Performance evaluation helps segregate these employees and find out the pain points that stop them from performing. It might be a capacity mismatch where an employee good at something else is working on something they don't know about. By performance evaluation you can place the right talent required for the right job. This way, you can keep your employees happy and improve the productivity of the company.

2.1.5 HOW OFTEN SHOULD EVALUATION TAKE PLACE

Many companies do performance reviews as frequently as once per quarter or as far out as once every 18 months. However, most experts recommend you conduct performance reviews every 6-12 months. The exact frequency should vary from company to company based on how often they can afford to raise wages, how long it takes managers to conduct performance reviews and how long it takes employees to implement change and that to be evident in their results. Considering all of these factors will help your company decide how often it needs to do performance reviews.

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

In this chapter the various ways in which data or information can be collected will be considered. This is a very important aspect of the research because the whole project will be based on the data or information collected and kept by the study area. It is secondary data collected from Adlak investment limited, Iseyin. The analysis technique used and data presentation is given below.

3.1 METHOD OF DATA COLLECTION

Data collection refers to the method of obtaining relevant quantitative information regarding the major ideas of hypothesis of the study for the process of demonstrating whether or not they are timely for the research.

The first step in every statistical investigation is the collection of data which forms the foundation of statistical analysis. There are two sources of data namely, primary and secondary sources. It is a primary source when the data are originally collected by the investigator, while it is a secondary source when data are obtained from published or un published record. Therefore, in this research secondary method of Data collection was adopted. In order to

retrieve the necessary Data needed for the research work, the researcher paid personal visit to Adlak Investment limited, Okutapemo Barracks Area Iseyin.

3.2 STATISTICAL TECHNIQUE

This is the systematic procedure for carrying out research; whereby, a research is the systematic collection, analysis and interpretation of data to answer some certain questions or solve some problem(s).

3.3 REGRESSION ANALYSIS

Regression analysis is a set of statistical methods used for the estimation of relationship between a dependent variable (Y) and one or more independent variables Xi = 1, 2, …

It can be used to access the relationship between strength of the relationship between variables and for modeling the future relationship between them. It includes; linear, multiple linear and non – linear.

ASSUMPTIONS FOR LINEAR MODELS

- The dependent and independent variable show a linear relationship between the slope and intercept.
- The independent variable is not random.
- The value of the residual (error) is Zero.
- The value of residual (error) is constant across all observations.
- The value of the residual (error) is not correlated across all observations.
- The residual (error) follows Normal distribution i.e. ę ɲ N(μ, δ²)

SIMPLE REGRESSION MODEL

The simple Linear Model is expressed using the following model.

$$QP = \alpha + \beta PP + ę$$

Where;

QP = Dependent Variable (Quantity of petroleum)

X = Independent or explanatory Variable (Price of petroleum)

α = Intercept

β = Slope

ę = Residual / Error

CORRELATION COEFFICIENT

A correlation coefficient is a number between -1 and 1 that tells us the direction and strength of relationship between variables.

1 ⟹ Perfect positive correlation

0 ⟹ No correlation / relationship

-1 ⟹ Perfect negative correlation

Correlation coefficient is a descriptive statistics. It does not make inference about the population when it summarizes two variables, it is bivariate otherwise it is multi-variate.

TYPES OF CORRELATION COEFFICIENT

The most widely used correlation coefficient is Pearson's "r", because it allows for strong inferences. It is parametric and measures linear relationship. If your data do not meet all assumptions for this test use a Non-parametric test. The Spearman's rho "r_s" and Kendall's tau "τ" have the same condition for use but Kendall's tau is generally preferred for smaller sample while Spearman's rho is used when the samples are large. The Pearson's "r" is a

parametric test with high power but it's not a good measure of correlation if the variables have a non linear relationship.

The formula for "r" is given by; $r_{xy} = \frac{n\sum xy - \left(\sum x\right)\left(\sum y\right)}{\sqrt{\left[n\sum x^2 - \left(\sum x\right)^2\right]\left[n\sum y^2 - \left(\sum y\right)^2\right]}} \equiv \frac{COV(x,y)}{S_x S_Y}$

Where; r_{xy} = Strength of correlation between price and quantity of petroleum

n = Sample size

$\sum$ = Sum

x = Price of petroleum

y = Quantity of petroleum

TEST OF SIGNIFICANCE OF POPULATION PARAMETERS

In testing the significance or reliability of β, we will use student t test or t distribution. The t test is used in a sample size of less than 30, with (n-k) as degree of freedom. Where: k is the number of parameter and n is the sample size or number of observations. The calculated t is compared with the theoretical value of t obtained from t distribution table at a given level of significance. Level of significance is denoted by α, we want to test at α = 5%.

HYPOTHESIS

H_0: β = 0

H_1: β ≠ 0

This is called two tail test implies testing at both ends, for α = 5% and critical region (rejection region): says reject H_0 if $t_{cal} > t_{tab}$ or if p – value less than 5% level of significance, otherwise accept the null hypothesis.

TEST STATISTIC

$$t_{cal} = \frac{\hat{\beta}_1}{S.E(\hat{\beta}_1)}$$

Where $S.E(\hat{\beta}_1)$ is the Standard error of the estimator given as; $S.E(\hat{\beta}_1) = \sqrt{V(\hat{\beta}_1)}$

t_{cal} is the calculated value and t_{tab} is theoretical value of t obtained from t - distribution table,

$t_{\alpha_{(n-k)}}$ or using p – value which is the smallest value of level of significance that lead to the rejection of null hypothesis.

ESTIMATION OF PARAMETERS OF REGRESSION

The principle of least square requires as to decide a and b is minimize to L

Y= aX + b

$L = E[(Y - aX - b)^2]$

$L = E[(Y - aX - b)(Y - aX - b)]$

$E(Y^2) + a^2E(X^2) - 2aE(XY) - 2bE(Y) + 2abE(X) + b^2$

Assume

$E(x^2) < \infty \; and \; E(Y^2) < \infty \; Exist$

$\frac{dL}{da} = 0 \; and \frac{dL}{db} = 0$

$\frac{dL}{da} = 2a\,E(x^2) - 2E(XY) + 2bE(X)$..... (1)

$\frac{dL}{db} = 2b + 2a\,E(X) - 2E(Y) = 0$..... (2)

$divide\ eqn\ 1\ by\ 2$ By 2

$aE(x^2) - E(xy) + bE(x) = o$.....(1)

$aE(x) - E(y) + b = 0$..... (2)

$multiply\ eqn\ 2\ by\ EX$

$aE(x^2) - E(XY) + bE(X) = 0$

$a[(Ex)]^2 - E(X)E(Y) + bE(x) = 0$

$= \gg \quad aE\left(x^2\right) - bE(x) = E\,(XY)$ ..... (1)

$a\left((Ex)^2\right) + bE(X) = E\,(x)\,E(Y)$ .....(2)

$subtract\ eqn\ 2\ from\ eqn\ 1$

$aE\left(x^2\right) - a\left((Ex)^2\right) = E(xy) - E(x)\,EX$

$a\left(E(x^2)\right) - \left(Ex^2\right) = E(XY) - E(x)\,E(y)$

$\hat{a} = \frac{E(XY) - E(X)E(Y)}{E\left(X^2\right) - (EX)^2} \quad OR\ \hat{a} = \frac{\sum X_i Y_i}{\sum X_i^2}$

$From\ the\ equation\ (2)\ above$

$aE\,(x) - E\,(y) + b = 0$

$\hat{b} = E(y) - \hat{a}E\,(x)$

$=> \hat{b} = E(Y) - \left[\frac{cov(XY)}{var(X)}\right] EX$

$Y - E(Y) = \left[\frac{cov(XY)}{var(X)}\right][X - E(X)]$

3.4 DATA PRESENTATION

This is an important aspect of this research work. The presented data helps the researcher to study and explain the research work thoroughly. Below is the data of price and quantity of petroleum in Adlak investment limited between the years 2010 to 2021.

YEARS	AVG. PRICE/LIT. (₦)	QUANTITY IN LITRES (Y)	ADLAK PRICE(₦) (X)
2010	111.90	1260	140994.00
2011	129.90	1080	140292.00
2012	134.10	1080	144828.00
2013	138.90	900	125010.00
2014	130.90	1080	141372.00

2015	109.90	1440	158256.00
2016	103.90	1620	168318.00
2017	117.90	1260	148554.00
2018	115.90	1440	166896.00
2019	119.90	1260	151074.00
2020	119.90	1260	151074.00
2021	123.90	1080	133812.00

Source: Adlak investment limited.

CHAPTER FOUR

4.0 DATA ANALYSIS

This chapter is basically about analysis of data and the interpretation in order to draw valid conclusions. Regression analysis is use as the statistical tool for the analysis which was carried out using spreadsheet sees in Table 1 to Table 3 of 4.1, following stages in analysis as below:

HYPOTHESIS

H_0: $\beta = 0$

H_1: $\beta \neq 0$

Level of significant (α) = 5%

Critical region: reject H_0 if p-value is less than 5% level otherwise accept the null hypothesis.

Test statistic:

$$t_i = \frac{\hat{\beta}_i}{S_{\hat{\beta}_i}}, \qquad \text{for } i = 1,$$

4.1 REGRESSION ANALYSIS OUTPUT

Table 1
Model Summary

Regression Statistics	
Multiple R	0.940
R Square	0.883
Adjusted R Square	0.871
Standard Error	0.058
Observations	12

Table 2
ANOVA

ANOVA					
	df	SS	MS	F	Significance F
Regression	1	0.257	0.257	75.442	5.69E-06
Residual	10	0.0341	0.0034		
Total	11	0.291			

Table 3
Coefficients

	Coefficients	Standard Error	t Stat	P-value
Intercept	-13.938	2.423	-5.754	0.00018

Price	1.768	0.204	8.686	5.69E-06

4.2 INTERPRETATION OF REGRESSION ANALYSIS OUTPUT

This output begins with the model summary (Table 1), which shows that the multiple correlation coefficient (R), using the predictor simultaneously is 0**.940** and Adjusted R Square is 0.871, meaning that 87.1% of the variance in quantity demand can be predicted from cost price. It also shows that Adjusted R square is lower than the unadjusted R square 0.883.

The ANOVA table (Table 2), which is used to test for significant of regression Coefficients, show that F = 75.442. This indicates the cost price is significantly predicting the quantity demand. Hence, since p-value (0.0001) less than 0.05, we reject the null hypothesis at α = 0.05 level of significance that there is no enough evidence to conclude that the regression line of the cost price variable has no effect on quantity demand.

Another table of interest is the coefficients table (Table 3). It shows the standardized beta coefficients, which are interpreted much like correlation coefficients. The t-value and significance (p-value) opposite independent variable indicates whether that variable is significantly contributing to the equation for predicting quantity demand, (i.e. testing for individual parameters). Thus, cost price is significantly contributing to the equation. Recall from chapter three that regression equation is given as:

$$Y = \beta_0 + \beta_1 X_1$$

Where Y is quantity demand, X_1 is cost price.

β_0 is the constant and β_1 is correlation coefficient associate with the factors X_1. Hence the output of the analysis in table 3 shows that

$\beta_0 = -13.938 \beta_1 = 1.768$ Hence,

$$Y = -13.938 + 1.768X_1$$

In this model, cost price is1.768 associated with increase in quantity demand.$\beta_0 = 13.938$ Is the quantity demand record of Adlak PLC in Iseyin with no risk factors (that is independent variable is zeros). The calculated values from the test statistic (t_i) for i = (0,1) with their respective p-value is as follows:

t_0 = -5.754, p-value = 0.0002

t_1 = 8.686, p-value = 0.0001

CHAPTER FIVE

5.0 SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 SUMMARY

This research work is being carried out to find the relationship that exists between quantity and the cost price of petroleum demanded by Adlak investment limited.

In other to satisfactorily carry out the research we employed the use of a simple regression analysis, and coefficient correlation in order to arrive at an acceptable conclusion.

The result of the analysis have showed significant relationship in the parameter, where the p – value is less than the 5% level of significance which indicate that the quantity of petroleum

contributes significantly to the price of petroleum in Adlak investment limited at 5% level of significant.

5.2 CONCLUSION

Having analyzed the data collected from Adlak investment limited using a simple regression analysis, and coefficient correlation.

It was observed that quantity of petroleum demanded is significant at 5% level, since the p – value is less than the level of significant we accept alternate hypothesis (H_1) and conclude that the quantity of petroleum demanded play a significant role in the cost price of petroleum.

5.3 RECOMMENDATIONS

Based on the above findings and result the following recommendations was made to both government, managers and researchers in an effort to help in the quantity of petroleum to be received in Adlak investment limited in Iseyin.

i. Based on the research, price of petroleum products is a major factor for the subsidy of petroleum products. Therefore it is advisable that privatize existing public refineries for enhanced domestic refining of petroleum products should be adopted. This will help reduce the supposed subsidy which is mainly higher on imported products.

ii. The development in (i) would facilitate relating marginal cost of production within the country to price in a generally acceptable (economic) manner.

iii. If government wishes to subsidize some cost of petroleum products consumption, it needs to formally determine sustainable amount of subsidy say; from excess crude revenue and provide for the amount in annual budgets.

iv. Managers and Directors are advisable to always keep proper records of goods received or demanded by company for reference purpose and future use to analyze amount of petroleum cost on annual basis.

REFERENCES

Acha. J "The Role of oil in Nigerian Economy". http://Ezine Articles. Com/? Expert= AchaJoy. Adedipe.B. (2004), "The Impact of Oil on Nigeria's Economic Policy Formulation".

Akanni, O.P (2004) "Oil Wealth and Economic Growth in Oil Exporting African countries". AERC Research paper 170. Answer .S.M, R.K. Sampath (1997)

"Exports and Economic Growth" Presented at Western Agricultural Economics Association Annual meeting. July. Bullion publication of CBN, vol.32, No.2, April-June, 2008.

Central Bank of Nigeria Statistical Bulletin, vol. 18, December 2007. Chukwu and etal (2010)

"Oil Price Distortions and their short and Long-Run impacts on the Nigerian Economy". MPRA paper No. 24434, August. Debel .G. (2002), "Exports and Economic Growth in Ethiopia". An Empirical Investigation. Ehanmo .J. N. (2002), "Is sustainable Development Compatible with Economic Growth in An Oil Dominated developing economy?" A case study of Nigeria.