
REGULATORY MANAGEMENT PRACTICES AND ORGANISATIONAL PERFORMANCE IN NIGERIA'S DOWNSTREAM PETROLEUM SECTOR

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Abstract: *This study examined the impact of the regulatory process on organisational performance in Nigeria's Downstream Petroleum sector. The aims are to investigate the effects of the legislative framework, the monitoring process, and the price-fixing mechanism on organizational performance in Nigeria's downstream petroleum sector. The Nigeria downstream sector is the portion of the oil and natural gas industry responsible for refining, distributing, and retailing. This portion of the industry includes oil refineries, petrochemical plants, petroleum products distributors, and natural gas distribution companies. The descriptive survey research design methodology was used. The study's population includes key oil and gas servicing companies operating in downstream activities in Nigeria's South-South and South-East regions, such as Con Oil, Rain Oil, Oando Oil and Gas, Ascon Oil and Gas, Dozzy Oil and Gas, Geo Links, and Forte Oil, as well as their workers. Krejcie and Morgan's table was used to acquire the 362 samples. A stratified sampling strategy was utilized. Both primary and secondary data drove the study. The data were examined utilizing correlation and regression analysis as analytical techniques. The study found that the legal framework ($\beta=.136$, $P =.001 <.05$), monitoring process ($\beta=.259$, $P =.000 <.05$), and price fixing process ($\beta=.075$, $P =.002 <.05$) all had a substantial impact on organisational performance. The study revealed that price fixing has an impact on organizational performance in the oil and gas sector. The research concluded along the road of policy implementation and proposed that legislative framework, monitoring and price fixing should be reasonably applied, consistent and improved, upon systematically to avoid any mismanagement and its antecedent issues.*

Keywords: Management strategies, oil and gas, price fixing, legal framework, monitoring

Introduction

Every country has its regulatory system for enacting laws, regulations, and rules, as well as a set of review procedures. Countries are increasingly implementing regulatory management policies and improving their institutions to ensure that their **Regulatory Management Strategies (RMS)** in the oil

and gas sector are very successful. Regulatory management ('controlling the regulation makers') is a type of meta-regulation that encompasses both regulatory policymaking ('governing regulation developers') and regulatory administration and enforcement ('regulating the wielders of regulatory authority') (McMahon 2015). According to Olujobi, Olujobi, and Efua (2021), each country has its method for enacting and reviewing laws, regulations, and guidelines. These RMS are then integrated into a larger public management system, which functions under the overarching constitutional framework. It is difficult to define exactly what an RMS is and how it differs from other systems. There is no formal definition of an RMS that sufficiently separates it from the larger public management, public policy, and public law systems within which regulatory management occurs. Gill (2011), in his assessment of Regulatory Management in New Zealand, highlighted that structuring will comprise the distribution of authorities, responsibilities, and tasks among the many players. It will consist of both centrally defined and general rules and processes, as well as decentralized and personalized rules and processes."

Nigeria is ranked ninth in the world regarding oil and gas production capabilities, below Iran, and second to none in Africa, ahead of Angola, Libya, and Algeria (OPEC, 2018). The Department of Petroleum Resources (DPR) reports that it imports around 75 million litres of refined petroleum each day. There appears to be an unwritten conspiracy involving only a few individuals from the ruling and running of the state-owned Nigerian National Petroleum Company (NNPC), which has historically grounded Nigerian refineries and served as a cog in the petroleum sector's development.

The excitement and intensity that normally characterize petroleum debate in Nigeria stem from unexplainable deprivations and sufferings of Nigerians during plenty and prosperity. Nigeria has large petroleum reserves and is a major oil exporter in the Organization of Petroleum Exporting Countries (OPEC). Since oil was found in large amounts in Nigeria, it has generated billions of dollars in cash, but this has not resulted in any significant economic progress. To solve the challenges plaguing many countries' petroleum sectors, structural reforms have become required, leading to the adoption of deregulation. Markets are deregulated, and the government's role in the sector is redefined (state interventions such as preferential treatment of state-owned oil corporations, price restrictions, and monopolies are eliminated). As originally conceived in 2003, deregulation of the Nigerian petroleum industry's downstream sector entailed removing government control over petroleum product prices, as well as restrictions on the establishment and operation of refineries, jetties, and depots, while allowing private sector players to participate in petroleum product importation and exportation and leveraging market forces to prevail. The downstream industry operates by converting crude oil into refined and petrochemical goods, as well as treating gas, transporting petroleum products, and selling them.

Effective leadership and governance are necessary for rapid and sustainable economic growth and development. A country afflicted by inadequate leadership and management, such as Nigeria, is certain to face widespread poverty and other socioeconomic ills. Bad leadership has afflicted Nigeria's downstream industry, with people whose responsibilities and actions have hampered the sector's

expansion. One of the key reasons Nigerians oppose full deregulation is because those in positions of power, who are supposed to properly manage the country's natural resources for socioeconomic growth and development, deliberately undermine the sector. Leadership responsibilities are critical in all organizations, whether private or public because how well or poorly they are carried out directly affects the company's performance. The notion of leadership is difficult to grasp. As a result, leadership roles are critical to the organization's survival, growth, and achievement of objectives. A leader's responsibilities include decision-making, communication, motivation, selection, and development of others to fulfil objectives or policies. Because of the foregoing, the study will investigate the impact of regulatory management practices on organizational performance in Nigeria's oil and gas industry.

The Problem

Nigeria's oil and gas industry, which accounts for a large portion of the country's foreign income and more than half of its government revenues, is in horrible health. Although Nigeria's National Statistics Bureau reported \$45.6 billion in income last year, a 46% increase over 2021 levels, those figures conceal a sad truth: Nigeria's oil output has been progressively declining in recent years. In April, the nation produced less than 1 million barrels of oil per day, significantly below its OPEC quota of 1.8 million bpd. So, even though oil prices rose in 2022 because Russia invaded Ukraine, Nigeria's energy business has had a lengthy history of missed opportunities. According to former finance minister Zainab Ahmed, the entire impact of high pricing has been “nil or negative”.

The country's oil output has been hampered by widespread theft and vandalism, as well as decades of underinvestment in infrastructure. As a result, the state-owned oil corporation NNPC cannot reach its output objectives. Mele Kyari, the chairman of the NNPC, has claimed that government and security officers, as well as religious members, steal up to 600,000 barrels of oil every day. The security situation is so dire that ex-militants oversee the affairs and protect pipelines. Similarly, official figures suggest that Nigerians now consume about 68mn litres of petrol daily, compared with about 49mn in 2015. Yet there has not been a commensurate increase in population or economic activity. Some believe that the numbers have been fiddled and that oil distributors sell subsidized oil in neighbouring countries at a huge profit.

President Bola Tinubu, the new president, removed subsidies on his first day in office. Nigeria's operational environment no longer supports efficient oil production. "Vandalism and theft have severely constrained production, causing production shutdowns for months on end," she said, citing disruptions at major export terminals. Fractious government agencies and the resulting regulatory ambiguity have also harmed investor trust, and "there's no clarity on who regulates what. "The gas industry is not doing much better. Analysts believe that a price ceiling on the domestic market has constrained investment. However, the export market is stronger, particularly since the Russia-Ukraine crisis has forced the EU to shop for gas all over the world.

Study Objectives

1. Examine the effects of legal framework on organisational performance in the oil and gas sector
2. Examine the effects of monitoring process on organisational performance in the oil and gas sector
3. Ascertain the effects of price fixing process on organisational performance in the oil and gas sector

Research questions.

1. What are the effects of the legal framework process on organizational performance in the oil and gas sector?
2. How does the monitoring process affect organizational performance in the oil and gas sector?
3. What are the effects of price-fixing on organizational performance in the oil and gas sector?

Hypotheses

Ho₁: Legal framework process has no significant effect on organizational performance in the oil and gas sector

Ho₂: There is no significant effect of the monitoring process on organizational performance in the oil and gas sector.

Ho₃: Price fixing process has no significant effects on organizational performance in the oil and gas sector

Literature Underpinning the Studies.

Conceptual Review

Concept of Regulation Process

The government exerts significant influence on the market economy through regulation. The extent of government rules is immense, affecting all sectors of the economy and every facet of our everyday life. Merriam-Webster defines regulation as: "an official rule or legislation that specifies how something should be done." Dudley and Brito (2012) extend on the concept and describe regulations, often known as administrative laws or rules, as the major vehicles through which the federal government implements laws and agency objectives. They are precise rules or instructions that specify what people, businesses, and other organizations may and may not do. To function correctly, market economies need clear rules. Without a legislative framework establishing and enforcing what and what not, as well as the "rules of the game," a free business system or mixed economy, such as Nigeria's, could not exist. The executive branch of government produces rules that affect many facets of our lives. Regulations influence everything you do, from the moment you get up to the time you go to bed. However, most people are uninformed of the consequences of regulations or the process by which they are developed. (Dudley & Brito, 2012).

Regulation Process

The regulatory process is the process of developing rules to govern actors in a certain business. It is also commonly referred to as the "rulemaking" process (Ekhatior, 2016). Nigeria's regulatory procedure is complicated since the country has a bicameral legislature at the national level but a unicameral legislature in the states and local governments. Nigeria has a federal legislative structure; therefore, laws can be passed at the national, state, and local government levels. However, we will focus on the national level, which is relevant to our study. As previously indicated, Nigeria has a bicameral legislature **on** the national level. This implies that the national legislative actions are divided between

two independent assemblies: the Senate and the House of Representatives. The National Assembly, which includes both houses, is Nigeria's principal legislative body. The Nigerian economy is heavily regulated in various sectors. The oil and gas business is one of them. While certain regulatory requirements are only applicable once, others must be renewed after a given period to continue functioning in that business. Under the existing Petroleum Act of 1969, the Minister of Petroleum Resources has extensive authority to set rules and grant and cancel oil licenses and leases (Resolution Law Firm, 2021). President Muhammadu Buhari altered the Petroleum (Drilling and Production) Regulations, 1969 ("the 1969 Regulations") while serving as Minister of Petroleum Resources. The 1969 Regulations, among other things, advise on the execution of Petroleum Act provisions governing applications for oil exploration and prospecting permits, as well as rules for oil drilling and extraction activities.

The President is currently the de-facto Petroleum Minister, acting under advice from the Minister for State, Petroleum. The National Assembly as the Legislative arm of government is empowered to pass legislation on Petroleum matters – which is on the Exclusive Legislative List.

Legal Framework Process

A legal framework, also known as a regulatory framework, can be defined as a combination of constitutional, legislative, regulatory, jurisprudential, and managerial norms that collectively constitute the laws that regulate the functioning of a certain business or activity (Olujobi 2012). Nigeria has a variety of laws governing oil and gas. The Petroleum Act, which granted the Federal Government ownership and control of any oil discovered in Nigeria, and the 1999 Nigerian Constitution (as amended) are two of the most important of these laws. This comprises oil discovered on Nigerian territory, in the country's territorial waters, on the continental shelf, and inside its exclusive economic zone. According to the 1969 Petroleum Act, the Nigerian government currently owns and controls all petroleum on, beneath, and inside Nigerian territory. Nigeria joined OPEC in 1971. OPEC was established to assist oil-producing countries by adopting a "group" approach (all resolutions passed are binding).

Monitoring Process

Monitoring is the systematic gathering, analysis, and use of data to follow a program's progress toward its objectives and assist management in making decisions. Monitoring often focuses on processes, such as when and where activities take place, who delivers them, and how many people or organizations they contact (Cage and Dunn 2009). Acting on the advice of the Minister of State Petroleum, the President is now the de facto Petroleum Minister. The National Assembly, as the government's legislative arm, has the jurisdiction to pass legislation on petroleum-related topics that are contained on the Exclusive Legislative List.

Price Fixing Process

The word "price fixing" comes from economics and is commonly defined as an agreement (written, verbal, or implied by action) among rivals to raise, reduce, or stabilize prices or competitive terms. Price

fixing regulation, on the other hand, is when the government or its agency sets the price of a product or service rather than allowing it to be established spontaneously by free-market forces. In other words, it occurs when the government establishes the price at which something should be sold by its policy. Although there is law that prohibits firms from fixing their prices in some instances, there is no legal protection against government price fixing (Hayes, 2018). Price fixing regulation refers to regulatory strategies for determining and applying limitations on businesses or sectors (Dunne, 2017). The term "regulatory" refers to the degree to which the public is involved in the price formulation process. The immediate goal of most price fixing legislation is obvious: to limit independent price-setting; in other words, to prohibit regulated enterprises from charging higher or, more unusually, lower prices for goods or services. This might include a fixed price or rate of return, a maximum price ceiling or minimum price floor, or more ambiguous types of control.

Conceptual Framework

Independent Variables

Dependent Variable

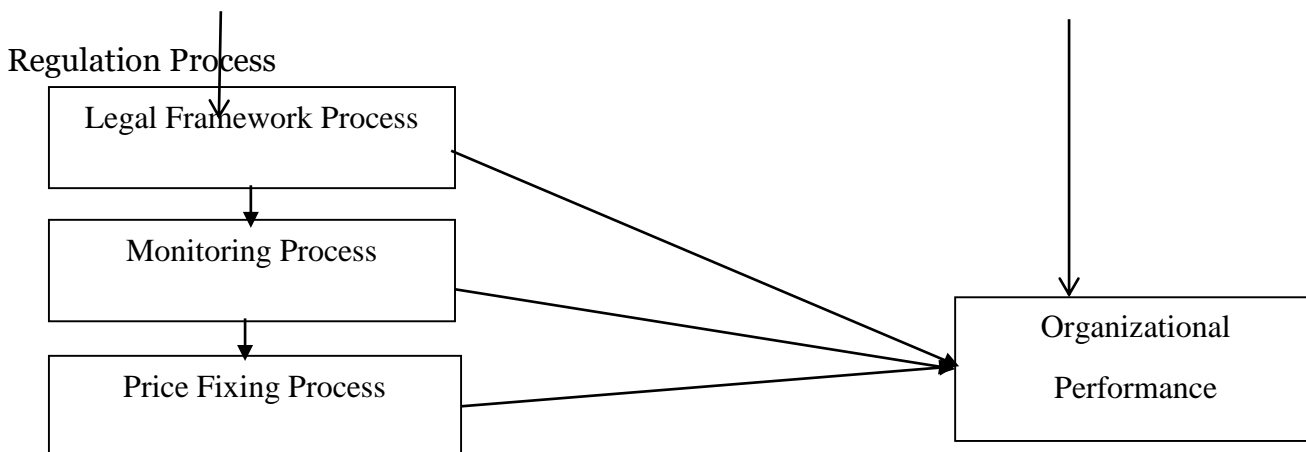


Fig 2.1: Conceptual Model

Source: Researcher’s field survey (2024)

Legal Framework Process and organizational performance of the oil and gas Sector

Before 1965, local petroleum product requirements were met by importation in a controlled system, with the private sector solely responsible. However, the Organisation of Petroleum Exporting Countries (OPEC) Resolutions of 1960 and 1971 ushered in a substantial shift in Nigeria's petroleum industry ownership structure. Resolutions pushing member states to engage in oil operations by acquiring concessions owned by foreign businesses prompted the Nigerian government to develop a more uniform downstream approach. In 1971, the government established the Nigerian National Oil Corporation (NNOC), now the Nigerian National Petroleum Corporation (NNPC), under Decree Number 33. The Nigerian government authorized the NNOC to purchase any asset or liability in existing oil organizations, as well as to operate in all phases of the petroleum business. The first Nigerian government-owned refinery was established in 1978 in response to the need to participate in

downstream sectors. Following it, there were three further refineries, twenty-one (21) depots, and around 5001 kilometres of strategically essential pipeline.

Monitoring Process and Organizational Performance of the Oil and Gas Sector

The Federal Ministry of Petroleum oversees the establishment and executing of government policies. The Nigerian Midstream and Downstream Petroleum Regulatory Authority (NMDPRA) is the regulatory body for the oil and gas industry. The power to supervise activity in the petroleum downstream industry has puzzled the NMDPRA. The lack of adequate control in the petroleum downstream sector has caused significant damage to the industry (Ogunjubi, 2011).

The Midstream and Downstream Petroleum Regulatory Authority (NMDPRA) oversees day-to-day petroleum industry monitoring and supervision, including monitoring oil company operations, setting and enforcing environmental standards, collecting royalty and rents, supervising and ensuring compliance with oil industry regulations, issuing licenses and permits, and protecting all oil and gas investments. Governments take involvement in oil and gas operations through the Nigerian National Petroleum Corporations employ a range of contractual forms to develop oil and gas resources.

Price Fixing Process and Organisational Performance of the Oil and Gas Sector

The government subsidy system had the direct consequence of boosting consumption, resulting in Nigeria's unreliable refineries seldom producing enough to meet local demand. Furthermore, large volumes of petroleum goods made their way into adjacent markets, where petroleum product prices were up to fifteen times higher. The subsidy plan imposed a substantial strain on the Nigerian economy. A Petroleum Argus assessment from 1993 estimated that the damage to the Nigerian economy was USD 1,606 million. This accounted for around 17% of the country's oil export revenues (Wapner, 2017). Price fixing, also known as price ceiling, is a type of price control/regulation that "sets a level above which prices are not allowed to rise," according to Taylor (2005). This type of law can prevent prices from achieving equilibrium, resulting in a situation in which the amount offered does not equal the quantity requested. Price limits are frequently employed to protect clients from circumstances in which they may be unable to get necessities. (Bobai, 2012).

Theoretical Framework

Resource Curse Theory

This study was based on the Resource Curse Theory, also known as the Paradox of Plenty or the Poverty Paradox, which was developed by Richard Auty in 1993. It refers to the paradox that countries with an abundance of natural resources, particularly oil and gas, have lower economic growth and worse development outcomes. The resource curse concept, often known as the paradox of plenty, refers to many resource-rich countries' failure to fully capitalize on their natural resource abundance, as well as their governments' inability to appropriately respond to public welfare needs (NRGI, 2015). According to the Resource Curse Theory, the presence of minerals and fuels in Less Developed Countries (LDCs) results in negative development consequences such as poor economic performance, growth collapses, high levels of corruption, ineffective governance, and increasing political violence. This simply means

that natural resources are viewed as a "burden" rather than a "gift" in most poor countries. While the discovery of natural resources may lead to better development outcomes, resource-rich nations have higher rates of conflict and authoritarianism, as well as worse rates of economic stability and growth, than their non-resource-rich neighbours (NRGI, 2015). This explanation also suited the research since the petroleum industry, which should be the driving force behind the long-term development of other sectors of the economy, has an albatross around its neck despite the government's numerous laws

Empirical Review

Ekeinde, Adewale, Diepiriye, and Dumbili (2022) investigated the deregulation of the downstream sector of the Nigerian oil industry and its influence on pump prices of petroleum products. The oil sector is certainly the cornerstone of the Nigerian economy, accounting for more than 80% of the country's foreign exchange and GDP. The significance of the petroleum sector to Nigeria's growth and economic strength cannot be overstated. This article covers the deregulation of the downstream sector of the Nigerian petroleum industry, with a focus on petroleum products' pump prices. Over the years, it has been noticed that, despite the massive quantities of income generated by the petroleum sector, the price of petroleum products in Nigeria continues to climb, despite large sums of money being spent on subsidizing product prices to make them affordable to Nigerians. The study examines the notion of deregulation and how a well-planned deregulation strategy may be implemented to accomplish the desired objectives of product availability and low pump costs. It posits that a totally and completely deregulated downstream will not always result in product pump prices that are cheaper than the existing ones both in the short and long periods, but in a competitive market with many firms competing, it will result in product availability and competitiveness. It proposes that the government implement steps to combat corruption and collusion, which might undermine the subsector's successful deregulation. It proposes that if downstream deregulation is to produce the best results, particularly in terms of product pump prices, then having an effective domestic refining capacity is critical, which would include revamping state-owned refineries, issuing licenses for the construction of new refineries, and operating them efficiently. It advises that the deregulation of the downstream be gradual to accomplish the intended aims.

Olujobi (2021) carried out a study on Deregulation of the downstream petroleum industry: An overview of the legal quandaries and proposal for improvement in Nigeria. The study investigates the necessity for deregulation of the downstream petroleum sector to tackle shortfalls and to enhance quantities of petroleum commodities in Nigeria. The goal is to improve industry competency through governance, legislative changes, and fierce commercial rivalry by benefiting from the expertise of other advanced nations in transforming and strengthening downstream oil sector rules. The study takes a conceptual legal approach, drawing on existing materials to support a doctrinal legal research method. The study also draws on primary and secondary sources of law, such as the Constitution and case law. The research discovered that the government's absolute authority in the industry, as well as incongruent valuing of oil commodities, made the industry unappealing to financiers seeking to establish private

refineries that would ensure adequate supply of petroleum and reasonable profits on their investments, due to the government's excessive regulation of the industry. The research devised a methodology to limit the constant rise in petroleum prices while still ensuring the proper operation of the downstream petroleum industry. The study concludes with recommendations, such as the need for a high-tech fusion of policies and incentives for downstream investment to help speed up the enactment of the pending Petroleum Industry Governance Bill 2017 and complete deregulation of the industry to encourage private investment and stop subsidy disbursements from becoming a new source of corruption.

Abdurrahman, and Shuaibu, (2021), the long-run and short-run dynamics of petroleum downstream deregulation: An ARDL Approach. This paper investigates the application of ARDL Technique to determine “The long-run and short-run dynamics of petroleum downstream deregulation Spanning the period 1991-2014: Secondary data were used, and econometrics models were analyzed through the application of Augmented Dickey-Fuller in testing the stationarity of the time series. Based on the findings of the study, the results of the unit root indicate that the variables have mixed degree of integration $I(0)$, $I(1)$; The bound test cointegration procedure revealed the presence of long-run relationship among the variables. The study revealed that importation of refined premium motor spirit (PMS) grossly affects the GDP of the economy negatively both in short and long run; the study therefore recommends total deregulation of the downstream sector must be gradually and consistently pursued to deliver maximum result to all stakeholders and the nation. While that is being pursued, adequate infrastructure, especially refineries, should be put in place.

Tools and Materials

The research design method that was adopted for this study was the survey research design method. The population was drawn from registered major petroleum marketers and tank farm owners in southern part of Nigeria as listed below. From informal interviews on the company's website sources and with key personnel who are privy to the employees' registers in their respective companies, the population figure is estimated at six thousand eight hundred (6,800).

Table 1: Distribution of the Population

S/N	Names of Firms	Population	Per Firm
1	Con Oil and Gas	840	
2	Rain Oil and Gas	720	
3	Oando Oil and Gas	1220	
4	Ascon Oil and Gas	860	
5	Dozy Oil	1410	
6	Geo Links	760	
7	Forte Oil and Gas	990	
	Total	6800	

Source: Researcher's Field Survey (2024)

The research's sample size is a fraction of persons recruited from the population to investigate the impact of the regulation management approach on the organisational performance of the enterprises chosen for the study. Krejcie and Morgan's (2017) statistical table for estimating sample size from a given population, where N is the population and S is the sample size, was used. In the Krejcie and Morgan table, each population figure corresponds to a sample size figure. For a population of 6,800, the sample size (S) is 362. As a result, this study's population-based sample size is 362 workers.

To allocate the sample size of 362 to the firms and their location, the study adopts the stratified sampling method to give a fair representation to the selected firms. The Bowley's proportional allocation formula was used

The formula is as stated below

$$n_h = \frac{nN_h}{N}$$

Where:

n_h = Number of units allocated to each firm

N_h = Number of employees in each firm stratum in the population

n = Total sample

N = The total population size under study

Con Oil and Gas

$$n_h = \frac{362 * 840}{6800} = 45$$

Rain oil

$$n_h = \frac{362 * 720}{6800} = 38$$

Oando Oil and Gas

$$n_h = \frac{362 * 1220}{6800} = 65$$

Ascon Oil and Gas

$$n_h = \frac{362 * 860}{6800} = 46$$

Dizzy Oil

$$n_h = \frac{362 * 1410}{6800} = 75$$

Geo Oil and Gas

$$n_h = \frac{362 * 760}{6800} = 40$$

Fort Oil and Gas

$$n_h = \frac{362 * 990}{6800} = 53$$

Table.2 Sample Size Distribution

S/N	Names of Firms	Sample Size Per Firm
1	Con Oil and Gas	45
2	Rail Oil	38
3	Oando Oil and Gas	65
4	Ascon Oil and Gas	46
5	Dozzy Oil	75
6	Geo Links Oil and Gas	40
7	Fort Oil and Gas	53
	Total	362

Source: Researcher’s Field Survey (2024)

The respondents to the research were selected using probability sampling procedures. Specifically, stratified sampling was used in the study. A five (5) point Likert scale was used to measure the respondents' opinions, as supplied.

Internal consistency analysis (Cronbach's alpha) and item-to-total correlation were used to determine the reliability of the research instrument's constructs. CA offers an estimate of the indicator intercorrelations; an appropriate score for CA is 0.7 or greater, whereas less than 0.7 indicates poor dependability (Seckaran, 2003). According to the data below, the reliability coefficients are above the 0.7 threshold. Overall, all items received favourable and dependable assessments. The estimate showed adequate internal consistency.

Table 3 Reliability coefficients of study constructs

Dimension of study constructs	Number of items	Cronbach’s Alpha coefficient
Legal Framework Process	4	0.751
Monitoring Process	4	0.811
Price Fixing	4	0.822
Firm Performance	4	0.842

Source: Output of pilot survey data, 2024.

Descriptive statistics, Pearson correlation, and multiple regression analytical methods were utilized to determine the nature of the link between the regulating process and company performance of the downstream sector in Nigeria's petroleum industry. Multiple regressions were employed to predict outcomes; they not only reveal a positive, negative, or no association, but also the strength of the link (Jonson and Kuby, 2007). This statistical method is considered acceptable since it provides a link between the independent and dependent variables. The hypotheses provided in this study were examined using multiple regression analysis. The statistical analysis was chosen because it helps the researcher make sense of the data and reach reliable findings that lead to smart decisions.

Model Specification

The following model specification was developed;

$$FPer = F(LFP, MP, PF, EV)$$

$$FPer = \alpha + \beta_1LFP + \beta_2MP + \beta_3PF + \beta_4EV + \varepsilon$$

Where:

FPer: Firm Performance

LFP Legal Framework Process

MP Monitoring Process

PF Price Fixing

ε : error term.

Results and Discussions

Table 4: Legal Framework Process and Organisational Performance

S/N	Statements	Scale					Mean (X)	Standard Deviation
		SA 5	A 4	U 3	D 2	SD 1		
1	Government policies do not affect performance of firms in the petroleum downstream sector.	67 (23.5)	69 (24.2)	47 (16.5)	47 (16.5)	55 (19.3)	4.415	.6855
2	Subsidy has no significant effect on firm performance in the Nigeria petroleum downstream sector	117 (41.1)	67 (23.5)	22 (7.7)	42 (14.7)	37 (13)	4.586	.6531
3	Product importation by NNPC has no impact on firm performance.	82 (28.8)	92 (32.3)	42 (14.7)	37 (13)	32 11.2	4.540	.5654
4	Partial deregulation of the petroleum downstream sector has no effect on firm performance	111 (38)	101 (35.4)	46 (16.1)	27 (9.5)	-	4.347	.7705

Source: Analysis of Field Survey, 2024.

Table 4, depicts the extent to which the legal framework process affects corporate performance. Statement 1 found that 135 respondents (47.7%) agreed that government policies had little effect on the performance of enterprises in the petroleum downstream industry. 47 (16.5%) were indecisive, while 102 (35.8%) disagreed. In statement 2, 184 (64.6%) of respondents agreed that subsidies had no substantial impact on business performance in Nigeria's petroleum downstream industry. 22 (7.7%) were unsure, while 79 (27.7%) disagreed. In statement 3, 174 respondents (61.1%) agreed that NNPC's product importation had little influence on business performance. 42 (14.7%) were indecisive, while 69 (24.2%) disagreed. In statement 4, 212 (74.4% of respondents) agreed that partial deregulation of the petroleum downstream sector had little impact on organizational effectiveness. 46 (16.1%) remained unsure, whereas 27 (9.5%).

Table 5: Monitoring Process and Organisational Performance

S/N	Statements	Scale					Mean (X)	Standard Deviation
		SA 5	A 4	U 3	D 2	SD 1		
5	Monitoring in the petroleum downstream sector has no impact on organization's performance in the petroleum downstream sector	107 (37.5)	77 (27)	42 (14.7)	27 (9.5)	32 (11.3)	4.396	.7272
6	Price disparity due to lack of monitoring does not affect the performance of organizations in the petroleum downstream sector	67 (23.5)	101 (35.4)	50 (17.5)	36 (12.6)	31 (11)	4.468	.6791
7	Observation and checking do not affect organizational performance	112 (39.3)	97 (34)	22 (7.7)	27 (9.5)	27 (9.5)	4.477	.5538
8	Control of petroleum products does not affect the organization's performance	127 (44.5)	82 (28.7)	28 (10)	27 (9.5)	21 (7.3)	4.235	.7674

Source: Analysis of Field Survey, 2024.

Table 5, demonstrates the extent to which the monitoring process influences organizational performance. According to statement 5, 184 respondents (64.5%) agreed that monitoring in the petroleum downstream industry had little influence on business performance. 42 (14.7%) were

indecisive, while 59 (20.8%) disagreed. In statement 6, 168 respondents (58.9%) agreed that price disparities caused by a lack of monitoring had little influence on business performance in the petroleum downstream industry. 50 (17.5%) were unsure, while 67 (23.67%) disagreed.

In statement 7, 209 respondents (73.3%) agreed that observation and checking had little effect on organizational performance. 22 (7.7%) were unsure, while 54 (19%) disagreed. In statement 8, 209 respondents (73.3%) agreed that control of petroleum products had little effect on company performance. 28 (10%) were unsure, while 48 (16.8%) disagreed.

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Table 6, Price Fixing and Organisational Performance

S/N	Statements	Scale					Mean (X)	Standard Deviation
		SA 5	A 4	U 3	D 2	SD 1		
9	PPPRA price ceiling does not affect firm performance in the downstream sector	69 (23.5)	67 (24.2)	47 (16.5)	47 (16.5)	55 (19.3)	4.551	.5769
10	Incessant price hikes of petroleum products do not affect firm performance	100 (35.1)	97 (34.8)	43 (15.1)	14 (4.9)	29 (10.1)	4.435	.7828
11	Lack of uniform prices in depots does not affect firm performance	93 (33)	73 (25)	42 (15)	36 (12.6)	41 (14.4)	4.516	.6586
12	Price fixing does not have any effect on firm performance	88 (30.9)	83 (29.1)	48 (17)	28 (10)	38 (13)	4.540	.6561

Source: Analysis of Field Survey, 2024.

Table 7, depicted the extent to which price fixing influences business performance. Statement 9 found that 136 respondents (47.7%) agreed that the PPPRA price ceiling did not influence company performance in the downstream sector. 47 (16.5%) were indecisive, while 102 (35.8%) disagreed. In statement 10, 197 (69.9%) of respondents agreed that constant price increases for petroleum items had little influence on company performance. 43(15.1%) were unsure, while 43(15%) disagreed. In statement 11, 166 (58%) of respondents agreed that the lack of standardized pricing in storage depots has no impact on business performance. 42 (15%) were indecisive, and 77 (27%) disagreed. In statement 12, 171(60%) of the respondents agreed that Price fixing does not have any effect on firm performance. 48(17%) were undecided while 66(23%) disagreed.

Organisational Performance

S/N	Statements	Scale					Mean (X)	Standard Deviation
		SA 5	A 4	U 3	D 2	SD 1		
17	My company generates adequate returns on its assets	83 (29.1)	88 (30.9)	48 (17)	28 (10)	38 (13)	4.477	.5538
18	My company's shareholders' value has improved	98 (35.1)	97 (34.8)	41 (14.4)	22 (7.7)	27 (10.1)	4.235	.7674
19	My company delivers on its value proposition to customers	69 (23.5)	67 (24.2)	47 (16.5)	47 (16.5)	55 (19.3)	4.291	.7141
20	My company's customer retention rate has improved	73 (26)	93 (33)	42 (15)	36 (12.6)	41 (14.4)	4.392	.6754

Source: Analysis of Field Survey, 2024.

Table 7, . Statement 17 found that 171 respondents (60%) agreed that my organization delivers acceptable returns on assets. 48 (17%) were unsure, while 66 (23%) disagreed. In statement 18, 195 (69.9%) of respondents agreed that my company's shareholder value has increased. 41 (14.4%) were unsure, while 49 (17.8%) disagreed. In statement 19, 136 (47.7%) of respondents agreed that my organization meets its value offer to customers. 47 (16.7%) were indecisive, while 102 (35.8%) disagreed. In statement 20, 166 (59%) of respondents agreed that my company's client retention rate had increased. 42 (15%) were indecisive, and 77 (27%) disagreed.

Table 8, Correlation matrix studied variables

		firm performance	legal framework process	monitoring process	Price fixing process	Evaluation Process
firm performance	Pearson correlation Sig.(2-ailed) No.	1 285				
legal framework process	Pearson correlation Sig.(2-ailed) No.	.507** .000 285	1 285			
monitoring process	Pearson correlation Sig.(2-ailed) No	.222** .000 285	.450** .000 285	1 285		
price fixing process	Pearson correlation Sig.(2-ailed) No	.349** .000 285	.218** .000 285	.294** .000 285	1 285	

**Correlation is significant at the 0.01 level (2-tailed)

*Correlation is Significant at the 0.05 level (2-tailed)

The above table 8, showed positive correlation coefficients for the metrics of company performance, indicating that they are good measurements of the regulatory process. The results showed that the legal framework process linked favourably with company success ($r=.507^{**}$, 0.01).

The second component, the monitoring process, is linked favourably with business performance ($r=.222^{**}$, 0.01), followed by the legal framework process ($r=.450^{**}$, 0.01). The third variable, the price-fixing process, had a positive correlation with firm performance ($r=.349^{**}$, 0.01), the legal framework process ($r=.218^{**}$, 0.01), and the monitoring process ($r=.294^{**}$, 0.01). The fourth variable; evaluation process correlated positively with firm performance ($r=.479^{**}$, 0.01), with legal framework process ($r=.249^{**}$, 0.01), with monitoring process ($r=.359^{**}$, 0.01) and lastly with price fixing process ($r=.146^{**}$, 0.01).

Multicollinearity Test

Table 9: Collinearity statistics of independent variables

Independent variable	Tolerance	VIF
Legal Framework	.946	4.057
Monitoring Process	.773	3.294
Price Fixing	.930	2.076
Mean		3.429

Source: computed from SPSS analysis of field survey data, 2024

The result in Table 9: shows the variance test inflation factor test (VIF); the mean VIF value Reported is 3.429 which is less than the benchmark value of 10 points to the absence of multicollinearity.

Table 10: Multiple Regression Analysis of Coefficients ^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig
	B	Std. Error	Beta		
1 (constant)	6.678	1.875		3.562	.000
legal framework monitoring process	.143	.066	.136	2.155	.001
price fixing process	.266	.068	.259	3.892	.000
	.143	.071	.130	2.016	.001

a. Dependent Variable: firm performance

Table 10: Model Summary

Model	R	R Square	Adjusted Square	Std. Error of the Estimate
1	.978 ^a	.956	.914	1.8948

.a Predictor: (constant) legal framework, monitoring process, price fixing process, evaluation process

.b Dependent variable: organisational performance

The multiple regression analysis was adopted to test the relationship of the legal framework, monitoring process, price fixing process, evaluation process and firm performance. The results are shown in Table

10: From the data shown, the correlation $R=.978$ means that the four (4) factors have a high relationship with firm performance. In this regression, the independent variables at 91.4% (R square= 0.914), and ANOVA statistics ($F=10.702$, $p<.05$) indicated that the overall model is statistically significant and has Std. Error of the estimate at ± 1.8948 . When considering the regression data of independent variables, I found that legal framework ($B=.143$, $SE_{b1}=.066$, $\beta=.136$, $t=2.155$, $P=.001$), monitoring process ($B=.226$, $SE_{b1}=.068$, $\beta=.259$, $t=3.892$, $P=.000$), price fixing process ($B=.076$, $SE_{b1}=.065$, $\beta=.075$, $t=1.159$, $P=.002$) and evaluation process ($B=.143$, $SE_{b1}=.071$, $\beta=.130$, $t=2.016$, $P=.001$) predicted firm performance with a statistically significant at 0.05. Therefore, I accept H_{01} , H_{02} , H_{03} and H_{04} which means that the legal framework, monitoring process, price fixing process and evaluation process are positively related to firm performance.

The structural equation model reveals the following regression equations for analyzing the firm performance based on four (4) dimension regulation processes.

Unstandardized Score $Y = -6.678 + .143(LFP) + .266(MP) + .076(PF) + .143(EV)$

Standardized Score $Zr = .136(LFP) + .256(MP) + .075(PF) + .130(EV)$

Table 11: ANOVA ^a

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	176.330	4	38.423	10.702	.000 ^b
Residual	925.733	280	3.590		
Total	1102.063	284			

. a. Dependent variable: firm performance

. b. Predictors (constant), legal framework, monitoring process, price fixing process, evaluation process

Source: SPSS Version 23, 2024

The F-ratio in the ANOVA Table tested whether the overall regression model is a good fit for the data. The table showed that the independent variables (legal framework, monitoring process, price fixing process, evaluation process) significantly predict the dependent variable (firm performance), since $F(4, 280) = 10.702$, $p<.005$, the regression model is good for the data.

Test of Research Hypotheses

The multiple regression analysis was adopted as an analytical tool for testing the hypotheses. Hypotheses' testing is really a systematic way for testing claims or ideas about any given parameter in a population using data measured in a sample. The p-values reported in the regression coefficient table are used for testing the study hypotheses.

The Decision Rule

The null hypothesis is the central part of research and is the hypothesis that is usually tested. If the probability value calculated is greater than the critical level of significance, then the null hypothesis will be accepted while the alternate hypothesis is rejected and vice versa. If the probability value is .000 is

smaller than the critical value of 5% (ie $.000 < 0.05$), we conclude that the given parameter is statistically significant. In this situation, it is accepted that there is need to reject the null hypothesis and to accept the alternate.

Gujarati & Porter (2009) observed that when we reject null hypotheses, we say that our findings are statistically significant and vice versa. Gujarati & Porter (2009) also posited that it is preferable to leave it to the researcher to decide whether to reject the null hypotheses at the given value. Note, the p-value is also known as the observed or exact level of significance or the exact probability of committing a type 1 error. More technically, the p-value is the lowest significance level at which a null hypothesis can be rejected (Gujarati & Porter, 2009). Thus, the p-value is at 0.05 (5%).

Hypothesis one

H₀₁: Legal framework process has no significant effect on the organisational performance of the downstream sector in the Nigerian petroleum industry.

From the coefficient table 4.8 legal framework process exhibited positive with organisational performance given the Beta value ($\beta=136$, $p<.001$). The regression analysis for legal framework process and firm performance on the test of hypothesis one, table 4.8 indicated that the exact level of significance calculated (.001) is less than the probability of committing a type one error (.05). Giving the result, the null hypothesis is rejected to accept the alternate hypothesis thereby implying that there is significant positive relationship between legal framework process and firm performance.

Hypothesis two

H₀₂: There is no significant effect of the monitoring process on organizational performance of the downstream sector in the Nigerian petroleum industry.

The coefficient table 4.8 shows the extent to which the monitoring process positively affects firm performance. Given the Beta value ($\beta=259$, $p<.000$), the regression analysis for monitoring process and firm performance on the test of hypothesis one, table 4.11 indicated that the exact level of significance calculated (.000) is less than the probability of committing a type one error (.05). Giving the result, the null hypothesis was rejected to accept the alternate hypothesis thereby implying that there is a significant positive relationship between monitoring process and firm performance.

Hypothesis three

H₀₃: Price fixing process has no significant effects on the organisational performance of the downstream sector in the Nigerian petroleum industry.

The coefficient table 4.8 shows the extent to which the price fixing process positively affects firm performance. Given the Beta value ($\beta= .075$, $p<.002$), the regression analysis for price fixing process and firm performance on the test of hypothesis one, table 4.8 indicated that the exact level of significance calculated (.002) is less than the probability of committing a type one error (.05). Giving the result, the null hypothesis was rejected to accept the alternate hypothesis thereby implying that there is significant positive relationship between price fixing process and firm performance.

Discussion of Results

Legal Framework Process and Organisational Performance

From the results of data analyzed in Table 4.7 it was reported that the overall positive correlation coefficient values among variables of the legal framework process are indicative that they are appropriate indicators and dimensions of the legal framework process. It showed the extent to which

the legal framework process accounted for the change in firm performance ($\beta = .136$, $P < 0.01$). This shows that there is a significant positive relationship between the legal framework process and firm performance. Table 4.9 shows that the Adjusted R^2 reported 545 (54.5%) of the change in firm performance is explained by the legal framework process. This result agreed with the finding of the Petroleum Products Pricing Regulatory Agency (PPPRA) Act, 2003 which established the Petroleum Products Pricing Regulatory Agency to determine the pricing policy of petroleum products and to regulate supply and distribution by setting benchmark prices through modulation mechanisms to promote stability in the oil sector. The inefficiency in the product transportation system has impeded the efficiency of the agency through ageing petroleum pipelines, pipeline vandalization activities, poor road networks and poor remuneration of most petroleum truck drivers which have occasioned sharp practices, inefficiency and corruption in the sector.

Monitoring Process and Organizational Performance

The result obtained from table 4.7 portrayed overall positive correlation coefficient values among variables that measure the monitoring process, and this points out the fact that they were all appropriate measures of the monitoring process. It showed that the ($\beta = .259$, $P < 0.00$) indicates that the monitoring process has a significant positive relationship and accounted for variance in firm performance. Also, table 4.9 showed that the Adjusted R^2 reported 545 (54.5%) of the change in firm performance is explained by the monitoring process. This supports the findings of Odigure, Abdulkareem and Adeniyi (2020) as their study finds that the slow development witnessed in the petroleum downstream sector was due to government regulation which does not give room for the forces of demand and supply to determine the prices of petroleum product. They also argue that the lack of proper monitoring has caused a lot of price differences in some parts of the country.

Price fixing process and organizational performance

The result from the regression on Table 4.8 revealed that the price fixing process has a significant positive effect on firm performance. The ($\beta = .075$, $P < 0.02$) shows the extent to which price fixing process accounted for the change in firm performance. In table 4.9, it showed that the Adjusted R^2 reported 545 (54.5%) of the change in firm performance is explained by price fixing process. More so, the result of the hypothesis tested showed that there is significant positive relationship between price fixing process and firm performance. The study is in support of Oyefusi (2002) who also asserts that price controls do impose cost on both agents and create inefficiencies of preventing market prices from rising to competitive equilibrium; quantity demanded exceeding quantity supplied by marring price from upward adjustment as well as market forces struggle expressed in other ways.

Summary

The main objective of the study was to assess the effects of the regulatory management process on organizational performance of the oil and gas sector in Nigeria. A cross-sectional research design was adopted and Krejcie and Morgan table was used to determine a sample size of 362 employees. Cronbach's alpha (α) coefficient was used for testing the reliability of the research instrument (questionnaire) and the findings from this test revealed that the items were reliable and valid at an

overall Cronbach's alpha value of 0.80. The values were above 0.70 exceeding the threshold of Cronbach's alpha value recommended by (Sekaran, 2003).

The analyses of the background profile of the respondents showed that 59.3% of the respondents were male and 40.7 were female. Regarding the age bracket, the age distribution of respondents which was spread across various age brackets shows that the highest concentration of respondents fell within the age bracket of Below 30 years with 111 (39.0%) of respondents. The categories of respondents between 31–40 years account for 87 (30.5%). 87 (30.5%) of the respondents fell under 40 years and above. Under educational qualification, OND/NCE holders account for 97(34%), of those respondents that possess HND/B.Sc were 113 (40%). 59(21%) of the respondents indicated that they were Masters Holders and those other educations accounted for 16(5%) of the respondents. It indicates the marital status of the respondents; it was observed that 182 (63.9%) of the respondents were married while 103 (36.1%) were single. The result revealed that legal framework, monitoring process and price fixing process has a significant positive effect on organisational performance in the oil and gas sector.

The results of the regression analyses of the variables revealed that regulation process dimensions have positive effects on organisational performance and the strength of the positive effect is as follows, from the highest; monitoring process ($\beta = .259, P < 0.00$), legal framework process ($\beta = .136, P < 0.01$), and lastly price fixing process ($\beta = .075, P < 0.02$). The result of the hypotheses testing revealed that indeed, a general view of the regulation process accounted for organisational performance. Therefore, the Adjusted R² reported 545 (54.5%) of the change in firm performance is explained by the regulation process.

Conclusion

The legal framework process and its reform will turn NNPC into a fully commercial, viable legal entity that is profit-driven with opportunities to raise cash from the capital markets through the provision of the Petroleum Industry Governance Act. The monitoring process through the lack of working refineries and heavy pressure on infrastructure from resultant importation has been a key cause of supply shortages. When the Price fixing process if the sector is fully deregulated, it will enable market forces to determine petroleum products prices, rather than the Federal Government fixing them.

Recommendations

1. The deregulation policy of the federal government is not associated with challenges, rather it is a policy option available for improved performance meant to remove the bottlenecks that have characterised the sub-sector, such as the sorry state of the four refineries, inefficiencies in distribution and pricing of petroleum products and the negative effects of monopolistic structure of the downstream sub-sector.
2. The government should also increase the quantity of crude for domestic refining to target some refineries as exporting refineries. This way, the country could meet the refined products needs of neighbouring Economic Community of West Africa States officially, this is important, given the need to mitigate the smuggling of petroleum products across the nation's borders

3. That government should in effect provide broad guidelines for the operation of refineries and allow private initiative in their running with good tax reliefs.

Author Information

Kingsley Akeni is a researcher specializing in industrial management and regulatory frameworks in the oil and gas sector. His work focuses on the intersection of regulation and employee performance, aiming to provide insights that can help improve operational efficiency and workforce productivity in heavily regulated industries.

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