



## Research article

## Deregulation of the downstream petroleum industry: An overview of the legal quandaries and proposal for improvement in Nigeria



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## ABSTRACT

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 objective is to boost proficiency in the industry via governance, statutory transformations and vigorous business competition by learning from other advanced countries' skills to transform and fortify the downstream oil industry laws. The study embraces a conceptual legal approach utilising existing literature to aid a doctrinal legal study technique. The research also utilizes primary and secondary founts of legislations, such as, constitutional and case laws. The finding of the research is the absolute authority of the government in the industry and incongruous valuing of oil commodities which made the industry unappealing to financiers to found private refineries that will ensure adequate supply of petroleum and reasonable profits on their investments owing to excessive regulation of the industry by the government. The study designed a model to halt continuous increment in the fuel price and to ensure efficient downstream petroleum industry. The study concludes with the recommendations, for instance, the necessity of high-tech fusion of policies and encouragements for investment in the downstream to boost swift enactment of the awaiting Petroleum Industry Governance Bill 2017 and absolute deregulation of the industry to foster private investments and to halt subsidy disbursements being a new fountain of corruption.

## 1. Introduction

Nigeria is categorised as Africa's continent leading crude oil producer, but the nation relies on importing refined petroleum commodities for its citizens' consumption as its four petroleum refineries have not been functioning optimally for years. Though diesel and kerosene values had been deregulated, a subsidy that was intended makes the price of fuel cheap and accessible in all fuel stations to her citizens have created avenues for corruption, thus impeded the country's economic growth and development (Olujobi 2020).

The nation is ranked sixth primary oil nation in the Organisation of Petroleum Exporting Countries since it is blessed with enormous crude oil that engenders her billions of dollars in oil revenues. However, the government, like other developing countries, has not put in place any significant growths that commensurate with the vast oil revenues generated by the country but only recorded prevalence of corruption, misappropriation, trafficking of refined products to other countries, vandalisation of pipelines despite the unnecessary subsidy expenditures for refined products in the industry (Adegbite, 2015).

The downstream petroleum sector is classified into three sections: the upstream encompasses exploration, production and the downstream sector consist of trades on refined petroleum products, retailing, and haulage, while the midstream transacts business on natural gas. The research centred on the downstream oil industry, which has extreme effects on all populace's lives. Besides, deregulation is the broadening of the oil trade through de-monopolisation of government-held petroleum firms, which are ineffective to encourage constructive profitable development and firmness in the industry. It is also a model for freeing the government involvement in the industry by easing the numerous rules regulating the industry for a free oil market where petroleum commodities prices are determined by the interaction of the forces of supplies and demands in the oil market. This will attract more transcontinental investors to the oil industry (Baghebo and Beauty, 2015).

The downstream oil industry is presently partly liberalised, making it arduous for fuel prices to be oil market regulated. The Federal Government controls the industry through its statutory agencies that assert domination of distribution or provision of refined petroleum products. The control of these regulatory agencies in the oil market has made the industry an oligopolistic sector. As a result of the oil market regulation

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with rigid structure, the foremost dealers influence the oil market developments, thereby leaving the independent marketers to make a great effort to satisfy consumers' fuel demands due to oil firms' competitions in the sector.

Refined petroleum products' price regulation procedures have weakened the evolution of the downstream oil sector. Allowing private oil investors to supplement the Federal Government efforts to transform the sector will promote fuel availability, increase oil revenues accruing to the government, promote transparency, efficiency, employment opportunities, and diminish the price of refined petroleum products in Nigeria (Olawore, 2012).

Conversely, liberalisation is the abolition of control and involvement of numerous investors in the downstream oil sector to promote vigorous competition, accessibility of oil products; reasonable and rational oil prices via the sustenance of private sector possession and growth of downstream oil industry substructure, for instance, oil refineries, lubricant plants and pipelines provisions. However, Privatisation is the total transfer of government-held oil assets or firms to investors on a shareholding ratio. Simultaneously, a subsidy scheme is when fuel customers pay less than the market price of fuel per litre with the aid of the government via subsidisation of oil prices to ensure fuel user-friendliness for the residents (Babayomi, 2014).

Deregulation is the method of changing an economic system or industry from intensive government regulation to a system that is accessible to all interested oil investors, which is control by forces of demands and supplies. Deregulation is common to the downstream oil.

Industry (Baghebo and Beauty, 2015).

Furthermore, the government initiated an additional mechanism called harmonised pricing of petroleum commodities to promote uniform apportionment of oil products. Equally, the Petroleum Equalization Fund was inaugurated in 1975 to tackle price inequalities occasioned by haulage of petroleum products to all part of the country at the uniform estimating policy initiated by the government to boost the supply of distilled petroleum commodities through practical know-how in refining, trade and allocation of oil commodities to boosting local oil firms involved in the downstream oil industry. Equally, to boost the adequate nationwide supply of fuel products at reasonable values via suitable storage stipulations for fuel commodities and haulage of purified oil products to eliminate the shortage of fuel and other oil commodities to improve private investments via removal of NNPC's branches oil market domination and control of the industry (Loretta, 2004).

Consequently, numerous nations have industrialised their downstream oil industry via liberalisation and deregulation models, which have boosted private sectors investments in their downstream oil industry—the challenge of an ongoing shortage of fuel products in Nigeria and primary concern for this research. The downstream oil industry is examined due to the government's numerous efforts to develop the industry via policies but with insignificant results even though the nation is rated ten positions among the primary oil reserves countries in the world with Ninety per cent of the Federal Government's income emanating from the industry (Richard, 2012).

Thirty-five percent of her Gross Domestic Products also originated from the industry, and One per cent of its national Gross Domestic Products also come from the downstream oil industry (Wapner, 2017). This study's motivation is to combat the artificial scarcity of refined petroleum products, improve Nigerians' welfare, and guarantee a virile economy by putting an end to the importation of refined petroleum products at exorbitant costs to satisfy domestic utilisation (Olujobi 2021).

The objective of the paper is to address the legal quandaries against deregulation and to propose how to improve the downstream oil industry with policy option to salvage the country's economy through total deregulation of the downstream oil sector by building more oil refineries, revamping the existing ones to exterminate market deficiency that is apparent in the controlled economy to foster development and socio-economic growth of Nigeria's economy. Deregulation of the

downstream oil industry will attract more foreign investors, eliminate the shortage of refined petroleum products, and combat refined petroleum commodities' smuggling around the country's boundaries.

Shabby refineries and ineptitude in the petroleum networks, due to dominant arrangement of the downstream industry, among other things, have necessitated full deregulation of the industry to halt the habit of hoarding and to store of fuel to stop protracted line up in fuel stations and other hitches connected to downstream industry being one of the contributions of this study to the existing literature in this study.

The study is structured as follows: The introduction, literature review, methodology statement of problems, was examined in section one. The subsequent section provides a succinct synopsis of the legal framework and regulatory organisations controlling the industry. This is preceded by the skills of other nations that could be learnt; theoretical framework on deregulation in Nigeria with the findings and discussion of results. The study concludes with a model for the downstream petroleum industry's total deregulation to eliminate impediment against the nation's economic growth and development. The study concludes with recommendations.

## 2. Literature review

The oil industry is the primary basis of the country's revenue is encumbered by the inherent and pervasive challenge of corruption. This has hindered the developmental and economic progress of Nigeria. Despite the contemporary trend on utilising alternative energy sources and the underplay of fossil fuel, the government is taken various measures to efficiently tackle these challenges via the deregulation model (Olujobi et al., 2020). It is anticipated that the government will utilise her oil revenues for substantial growth of the nation by eliminating subsidies expenditures which gives room for corruption in the industry (Olujobi 2020). To combat fuel scarcity in Nigeria, the Federal Government initiated Modular oil refinery projects and other private partnership projects, for instance, the evolving private refineries schemes such as the Dangote Refinery and Petrochemical firm, Lekki Free Zone, Lagos State and Azikel Refinery in Bayelsa State to boost indigenous refining of crude oil with the capacity of 445,000 barrels per day to tackle fuel shortage in the country but these undertakings have not yielded the desired results yet (KPMG, 2019).

In conformity with (Gberevbie et al., 2015) view, deregulation is the remedy to corruption in the industry; it will enhance regulatory and good governance (Kadiri and Lawal, 2016). Their study highlighted the benefits of full deregulation and solutions to the continued upsurge in fuel price, scarcity of the products and others. Similarly, Monday and Ekperiware (2016), in his work, he contended that the increase in the costs of fuel is not based on the absence of total deregulation but the escalation in global oil values. As the increase in fuel costs inspires financial development as oil commodities are rigid, the work neglected the merits of total deregulation, but the current authors submit that total deregulation is the solution to the country's fuel shortage.

Similarly, Ezu-Like Maximus (2012) argued that fuel subsidy regime was initiated to lessening adverse effects of escalation in prices of fuel but, the price perseveres notwithstanding over ₦1.7 billion expended as a subsidy payment, the problem persists owing to corruption, but the studied neglect to explain the *rationale* for total deregulation. Also, Sobowole (2012) opined that the industry's deregulation would inspire healthy rivalry in the industry, thereby removing the NNPC's control in the industry. Agreeing with Fidelis and Egber (2013), submission deregulation will financially waste and social problems occasioned by excessive government control in the industry. The drawback of the study is that challenges of the downstream petroleum activities were excluded.

Richard (2012) emphasises that deregulation of the downstream petroleum industry is the tool for economic evolution and viable downstream oil industry. Barkido (2010) stresses that deregulation gains are huge as it aims to exterminate enormous income expended as subsidisation. In 2006–2009, approximately ₦25 trillion (USD 65,616,797, 500.00) was disbursed this necessitate abolition of subsidy.

However, Olujobi et al. (2020) considers the flaws in legislation regulating the marketing of petroleum products, but the study is constrained by the implicit evaluation of laws regulating the marketing of petroleum products in the country. The study fails to discuss the pertinent issues on total deregulation of the industry were not considered adequately but offered information on deregulation policy. Scholars who have interrogated deregulation in the downstream industry neglected to highlight the *modus operandi* of total deregulation. In the literature, it is a lacuna that this research aims to plug by proposing the complete application of deregulation policy to combat the persistent scarcity of fuel in the country to guarantee transformation via execution of transparency legislations in the industry (see Figures 1 and 2).

### 3. Methodology

The research uses a doctrinal legal approach by depending on existing literature on deregulation with primary and secondary bases of legislations, for instance, legislative stipulations and case laws references on downstream industry undertakings, which constitute sources of information for this research. The study also uses a comparative approach by comparing deregulation experiences of other countries such as the Philippines, India, Canada, Malaysia, Jordan and Ghana to gain useful insights to recommend the reform of Nigeria's downstream petroleum sector. This research's bases of information were mainly from secondary sources and unstructured interview with some downstream petroleum sector regulatory authorities and some downstream petroleum independent marketers to enhance efficiency and abundant petroleum products in the downstream petroleum sector through private sector involvement in the ownership of modular crude oil refineries in Nigeria. It evaluated the problems and extracted inferences that concluded in the findings of this study.

### 4. Legislations and regulatory authorities controlling the downstream oil industry

Deregulation of the downstream oil industry is being advocated as a strategy without adequate legislative supports in the sector. A plethora of legislation regulating the petroleum industry have been enacted, namely: Section 44(3) of the 1999 Constitution, which is the bedrock of the country's legislation, offers the Federal Government of Nigeria exclusive control over extractive resources and section 1 of the petroleum (amended) Act, 2004 which bestows full proprietorship and management of energy resources on the Federal Government. The Oil Pipeline Act Cap 07, Laws of the Federation of Nigeria, 2004 makes provision for licences to be given to form and preserve oil fields pipelines. The law empowers the Minister for petroleum and energy to award a permit to any person to transport mineral through oil pipelines. Also, section 8 provides for revocation of oil licence by the Minister for non-adherence to the Act's requirements. Powers of the Petroleum Minister under sections 6(1) and 9(1) (d) (iii) of the Petroleum Act on petroleum commodities price-fixing are equally conferred on the Petroleum Products Pricing and Regulatory

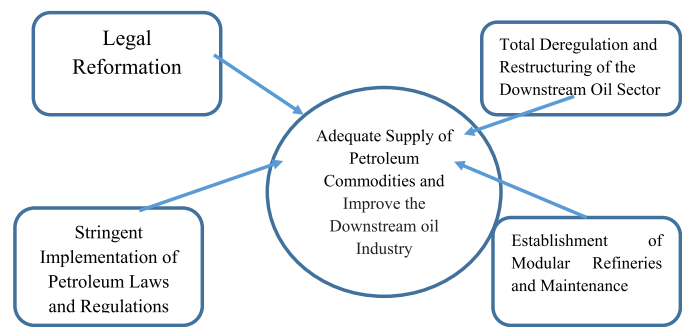


Figure 2. Model for the transformation of Nigeria's downstream petroleum industry. Sources: The Author created the Figure.

Agency's Board under section 7(a) of the Petroleum Products Pricing and Regulatory Agency Act. The Acts should be streamlined to avoid conflict of interest and comply with the industry's present economic realities.

The Petroleum Equalization Fund Management Board Act, Cap P11, Laws of the Federation of Nigeria (LFN). 2004, section 6(1) provides for the reimbursement of oil marketing firms for any loss suffered due to retailing of petroleum commodities at homogeneous prices by the Minister of Petroleum. Non-compliance or the making of a fictitious entry in any register require to be made under the Act to defraud shall be legally responsible upon sentenced to a penalty of Fifty Thousand Naira Only (USD131.23) or incarceration for Five years. This fine appears unrealistic, considering the current economic reality in the sector. The Act aims to promote the availability and affordability of petroleum commodities in Nigeria. However, this law's aim has been defeated due to corruption and weak implementation of the Act by regulatory authorities in the sector.

The Oil Pipelines Act Cap 07, LFN, 2004 regulates petroleum pipelines being the medium of transporting petroleum products. The Minister grant licences for the formation and preservation of oil pipelines. Non-compliance with the Act attracts a fine of ₦1,000:00 (USD 2.62) or two years' incarceration or both, but weak enforcement has been the challenge. The Petroleum Production and Distribution (Anti-Sabotage) Act, Cap P12, LFN, 2004 law criminalises disruption and vandalism of crude oil pipes in the downstream sector. The penalty for violation of the Act is the death penalty or imprisonment for 21 years, but weak enforcement and corruption in the sector have resulted in non-compliance with the Act.

The Pre-shipment Inspection of Exports Act, Cap P. 25, LFN, 2004 regulates the inspection of oil before shipment to any place outside Nigeria to prevent adulteration of petroleum products and to combat dishonest practices in the industry. However, the law desires more human resources, governing, and legislative agencies' effectiveness to accomplish its industry objectives. The Companies Income Tax Act, Cap C.21, LFN 2004 regulates the downstream and midstream oil operations. The penalties imposed for non-compliance appears not to commensurate with the offence under the Act. The Education Tax Act, Cap.E4, LFN 2004

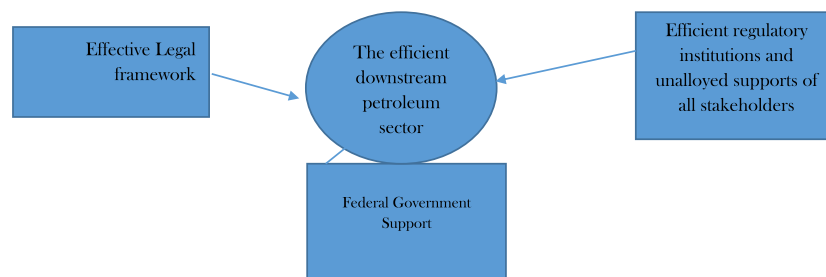


Figure 1. A suggested model for the transformation of Nigeria's downstream petroleum industry from the legal perspective. Sources: The Author created the Figure.

imposes a levy of 2% on the revenues of oil firms in Nigeria who engaged in the downstream oil activities to develop Nigeria's educational sector. Weak enforcement by the regulatory institution has been the problem in the sector. The Finance Act, 2020 imposes a 7.5% value-added tax (VAT) on consumable goods and services in the sector to generate incomes for the Federal Government. There is a need for palliative actions to cushion the impacts of sudden increased in VAT from 5% to 7.5% on the Nigerians and compliance with the Act. The Niger Delta Development Commission (Establishment) Act Cap N86, LFN 2004, demanding the Commission's payment by downstream petroleum companies 3% of their annual budgets for the growth of the Niger Delta Regions where crude oil exploration and production are exploited. Lack of accountability and corruption by the Commission's office has given room for weak enforcement of the law.

The significant challenges with listed laws are weak enforcement by the governing agencies in the industry. Lack of clear guidelines on the exercise of the Minister's discretionary powers such as consent on oil transactions or licence transfers and absence of time frame for the exercise of such powers have giving room for abuse of power. The Department of Petroleum Resources issued the various Environmental Rules and Guidelines for the Petroleum sector with the force of law to regulate environmental quality control and pollution abatement in the sector. Lacks adequate incentives for compliance with the laws by the downstream petroleum companies. This has discouraged compliance and efficiency in the sector. The court in the case of *Idoniboye-Obu v. NNPC (2002) FWLR (Part 84) 11* affirm that regulatory authorities are to ensure accessibility of petroleum commodities and reliable databank to guide policymakers in the enactment and compliance with the various policies decisions on petroleum products in Nigeria.

The Petroleum Product Pricing Regulatory Agency (PPPRA) controls the price and supply of petroleum commodities through the Code of Conduct issued to regulate petroleum operators in the sector and set the pricing template for the marketing of petroleum commodities instance: petrol and kerosene. The Act should be amended to expunge areas of conflicts on the roles of the NNPC and PPRA on pricing, supply and marketing of petroleum commodities which has hindered the efficiency of PPRA in the sector. There is a need to eliminate bureaucracy among the various institutions regulating the sector to combat corruption and inefficiency. There is also the need for strong political will to entrench openness and accountability in the sector via stringent enforcement of the downstream petroleum laws.

Also, the NNPC was created in 1977 as the state oil firm by the Nigerian National Petroleum Corporation (NNPC) Act, Cap 320, LFN, 2004 to participate in all stages of the upstream and downstream sector to enhance the petroleum industry efficiency and to commence other undertakings that are beneficial in actualising the aims of the Act. Failure to obey the law's provisions due to weak enforcement by the corporation is a player and regulator in the sector. This gives room for conflicts of interests and breach of law. Monopolies of the Corporation in terms of petroleum infrastructure and logistic facilities such as depots and jetties have impeded other petroleum products' activities and participation in petroleum products importation due to the limited private logistic facilities or infrastructure in the sector. There is the need to de-monopolise the downstream petroleum sector through total deregulation to boost importation of petroleum commodities by private marketers to enhance healthy competition that will boost Nigeria's economy.

Similarly, the Petroleum Products Pricing Regulatory Agency (PPPRA) Act, 2003 established the Petroleum Products Pricing Regulatory Agency to fix the pricing policy of petroleum commodities and standardise allocation and supply by setting benchmark prices through modulation mechanisms to promote stability in the oil sector. The inefficiency in the product transportation system has impeded the agency's efficiency through ageing petroleum pipelines, pipelines vandalisation activities, low road networks, and poor remuneration of most petroleum truck drivers that have occasioned sharp practices ineptness and corruption in the sector.

The Petroleum Equalization Fund Management Board is empowered to harmonise the pump prices of fuel commodities across Nigeria are unimpressive; its activities are plagued with bribery. They have occasioned in misuse of public funds and government participation in the petroleum undertakings implements the laws in the sector very frail and ineffectual. The agency is to oversee the reimbursement of petroleum marketing firms for costs incurred for selling petroleum commodities at homogeneous prices in the country. There appear to be discrepancies between this law and what indeed occurs due to massive corruption in the sector. As an agency of government, the Petroleum Equalization Fund should be repealed, and the laws regulating the sector should be reviewed for effective regulation. The Nigerian Content Monitoring Board (NCMB) supervises and manages the growth of Nigerian content in the oil sector through the board's approvals. In the case of *Bamidele Aturu v. Ministry of petroleum Resources* in Unreported Suit No: *FHC/ABJ/CS/591/2009*, the court held that the word "downstream" is alien to Nigeria's law. Therefore, this term must be strengthened with the force of law in Nigeria's legal framework.

#### 4.1. Deregulation of the downstream oil industry: what can Nigeria learn from other countries?

Deregulation of the Philippine's downstream petroleum industry in 1988 was done in two phases, partial where oil importation liberalised and automatic pricing mechanism introduced. Under the full deregulation, controls on oil price setting lifted, thereby enhanced petroleum products availability and healthy competition among petroleum marketers (Ogbeifun, 2009). The Department of Energy, Department of Justice Task Force set up to prevent excessive charges by oil companies and review the increase in petroleum commodities prices. The Republic Act, 8180 prohibits excessive price with 3years imprisonment with a fine ranging from P500.000 (USD10,301.66) to P1million (USD20,606.02) as a penalty for non-compliance. The strict enforcement of their laws promotes compliance, thereby enhancing the efficiency and availability of oil commodities in the industry.

In the Republic of India also, after the deregulation of its downstream oil industry in 1998, a regulatory body was set up to monitor activities of oil operators by calling the attention of the government to policy changes, but this does not interfere with the refinery operations, allocation and supply of petroleum commodities this reduces fuel supply shortages and overpricing. A similar agency also exists in Canada called the Petroleum Products Pricing Commission (PPPC); whose role is to ensure that consumers of petroleum products are treated fairly in the petroleum products market. The country adopts Automatic Pricing Mechanism (APM) with the maximum allowable prices monthly based on the global price of fuel and Canadian Dollars exchange rate and price changes calculated based on the published pricing of refined petroleum commodities by the statutory agencies in the industry. According to Tinubu (2009), Ghana deregulated its downstream petroleum sector with about 90% of its petroleum products in 2004 and had about 2.2% GDP subsidy, and it completed its deregulation in 2005. Likewise, Malaysia spent 7% GDP on subsidy in 2007 made a 41% price increase and a 61% diesel price increase in 2008 to deregulate its downstream petroleum sector. Similarly, Jordan spent 32% GDP on subsidy, and 32% on subsidising petroleum commodities in 2004 and a 25% price increase in 2005 left 3% on subsidy. The Lessons acquired from the designated case study nations are:

There is a necessity for more Nigerian National Petroleum Corporation's (NNPC) filling stations, reviving moribund oil refineries and building more modular crude oil refineries with adequate social infrastructures to cushion the adverse impacts of total deregulation of the sector on Nigerians. The Federal Government of Nigeria should remove all administrative bottlenecks at the Sea Ports, which has given room for excessive demurrage charges on petroleum products and other fraudulent practices in the sector. There is the need for speedy legislative enactment of the pendent Petroleum Industry Governance Bill, 2017 and



total deregulation of the sector to inspire private financiers' initiatives and terminate subsidy payments regime as another source of fraud country. The downstream oil industry laws reform is long overdue to end inefficiency, ineffectiveness and corruption for sustainable national development in the sector (Olujobi 2020).

#### 4.2. The benefits of deregulation of Nigeria's downstream oil industry

The world is evolving from fossil energies to replenishable power sources, and there is repeated clamour among the public for the divergence of the country's sources of wealth owing to the international oil value decline, little request for the country's crude oil on the international marketplace and the prevalent corruption in the industry. Crude oil values had plummeted extensively from \$110 (₦41,910.00) a barrel in 2010 to \$48 (₦18,288.00) per barrel in 2014 improved comparatively to \$54.15 (₦20,631.15) per barrel in 2017, \$72.8 (₦29,823.25) in 2018 and \$65.06 (₦26,652.48) in 2019 but plunged to \$30 (₦12,289.80) due to oil market demands. This has declined the incomes of the government from crude oil. Also, there is an absence of openness in the Nigerian oil industry and the manner oil contracts awarded. The case of Halliburton revealed series of corruption ongoing in the sector (Udibe et al., 2018).

Total deregulation of downstream petroleum has the potential to shape the price increases of petroleum commodities. It will end huge revenues spent on fuel subsidy. It will enhance petroleum commodities availability in Nigeria and eradicate endless queues at filling stations for non-existent petroleum products in some part of the country. Full price deregulation is the bedrock of any long-term reform within the downstream petroleum for transparency in the sector.

It will put an end to the practice of hoarding fuel in the regulated economy. Foreign and local investors and marketers may invest in petroleum facilities or infrastructures such as storage tanks, pipelines, retail filling stations, petroleum pipelines, or trucks. It will lead to a healthy petroleum market, competition among petroleum marketing companies operating in Nigeria as against depending on NNPC for petroleum products and this will encourage the establishment of private modular refineries by investors. There is a need for the Federal Government to end subsidies payments in the downstream petroleum sector to lessen the burdens on the nation's treasury for subsidies payments. This revenue could have been spent on social infrastructural such as good road networks, schools, and essential social amenities to enhance the nation's economic development and growth through free petroleum commodities market interplay, guaranteeing healthy competition, efficiency, and petroleum products available throughout the country at reasonable market prices.

Besides, there is a severe decline in crude oil price owing to the outbreak of the COVID 19 (Coronavirus disease) that has ravaged the Republic of China, being Nigeria's major customer after the United States. This has affected her national budget due to her mono-economy status and over-reliance on crude oil for national income. Therefore, the need for diversification of our economy from crude oil to another mineral as crude appears not to be sustainable due to its price volatilities. Subsidies payment also promotes ineptitude in the downstream petroleum as it discourages private investors in Nigeria's refineries due to extreme control by the Federal Government without considering the changes in prices at the international oil market. This has undermined the incentive for private investors to invest in private refineries in the country's downstream oil industry.

The various Committees' reports on fuel subsidies in Nigeria's downstream petroleum have also revealed that the sector has not been transparent but characterised with corruption and lack of transparency and accountability. Increased competition among marketers will result in lower prices. Adequate supply would eventually cause marketers to compete on services rendered. Prices need to be allowed to be primarily dictated by the market forces. Therefore, there is a need for the sector's total deregulation to encourage private investors to build infrastructures

such as new depots and modular crude oil refineries to end fuel scarcity in Nigeria.

#### 4.3. Hurdles to full deregulation of Nigeria's downstream oil industry

The country's downstream oil industry is strictly regulated with many regulatory authorities such as the Ministry of Petroleum Resources, Nigeria National Petroleum Corporation, Department of Petroleum Resources, and their efficiency in refining petroleum products. The deferments in the passage of the Petroleum Industry Governance Bill, 2017, hinders complete deregulation of the downstream oil sector. It has dampened investor's confidence in the sector. Crude oil theft, illicit refining undertakings, and pipeline destruction are impediments to complete deregulation of downstream petroleum, among others. The downstream oil industry is also bedevilled by the inefficiency of the nation's refineries due to poor maintenance, which has necessitated the importation of petroleum products to satisfied national demands gaps in local utilisation of fuel, scarcity of refined petroleum products, lack of transparency in July 2013 Nigeria lost approximately \$10.9billion (₦4,465,294,000,000.00) worth of oil revenues to oil theft.

There are significant challenges in the industry, such as damaged pipelines and the absence of an effective logistics infrastructure which hampered growth within the downstream petroleum sector. NNPC and its sub-business units' function as government parastatals and suffer from low maintenance of assets or oil infrastructural such as refineries, frequent breakdowns of pipelines and depots, inadequate funding, inadequate commercial incentives for investment in the sector. Significant red-tapism and lengthy administrative processes for securing necessary regulatory approvals in the sector with the slow pace of infrastructural expansion, limiting the growth of the oil industry, under-investment and decayed oil infrastructure, has affected development in the sector. Other impediments to complete deregulation of Nigeria's downstream petroleum are corruption, poor fuel subsidy management, and inefficient downstream petroleum regulatory authorities to enforce the legal framework regulating Nigeria's downstream petroleum. Also, the differences in cost of fuel importation to Nigeria by the various independent oil marketers, the inefficiencies of petrol price control mechanisms or modules in the sector and bad government and bad leadership are the current factors militating against the deregulation of the Nigerian downstream petroleum with the challenges of pricing template are problems facing the industry.

There are multiple regulatory authorities in the sector, such as the Ministry of Petroleum Resources, Nigeria National Petroleum Corporation and the Department of Petroleum Resources. These have affected their efficiency in the sector due to over-regulation. Procrastination in the Petroleum Industry Bill's enactment and full deregulation of the sector has diminished financier's confidence in the sector (PWC 2017).

#### 4.4. The need for functioning refineries in Nigeria

The current refineries in Nigeria are functioning poorly due to age, poor maintenance, weak governance and vandalism of the pipelines supplying crude oil to the refineries, which have affected their production capacities (Udonne and Akinyemi, 2018).

The establishment of modular crude oil refineries with 30,000 barrels per day capacities by the Federal Government in partnership with private investors with strict enforcement of the sector's deregulation policy and other reforms will encourage investments in the sector. The incidences of crude oil theft, illegal oil refining activities, and piracy are reasons for the country's fuel shortage. Therefore, there is a need for function refineries with advanced security intelligence measures to forestall pipeline vandalism. Also, there is a problem of inadequate infrastructure, which has made refining crude oil difficult. Therefore, there is a need to establish modular refineries that are cost-effective for investors (PWC, 2017).

In June 2020, the Financial and Operational Report of NNPC's revealed that the corporation incurred the sum of ₦5.348 billion (USD14,036,745.32) as a subsidy on imported petrol's primary importer of petrol. This is unsustainable. Therefore, there is a need for functioning refineries and total deregulation of the downstream oil industry for transparency and efficiency in the sector (NNPC 2020).

## 5. Statement of research problem

The government paid about ₦1.7billion (USD 4,461,942.23) on fuel subsidy yearly, a colossal financial waste of the country's capital. The subsidy programme initial aim was to ensure the prices of fuel in Nigeria are cheap for everyone to buying as the nation's four's refineries with full capability of 445,000 barrels per day are the total cumulative production capacity of the four (4) refineries which have not been functioning correctly due to many years of neglect, annihilation by vandals due to endless agitations for resources management by the militants in the Niger Delta areas owing to environmental degradation occasioned by oil exploration undertakings and the dearth of substructure that is proportionate with the worth of oil revenues made from the region.

Also, over-reliance on imported petrol and failure to renovate the existing refineries to forestall disruption in fuel supply. Moreover, the difference in prices of refined petroleum commodities in the country inspires the transfer of fuel commodities to other nations, thus boosting corruption in the industry.

It is undeniable that the government cannot persist in funding petroleum commodities, which is unjustifiable due to bribery and ineptness in the magnitude, distribution, and estimation and trading of fuel products in the country. The yearly financial plan for a subsidy of fuel should be utilised to improve another critical area, for instance, the power industry, to enhance the country's economy. Upgrading the current refineries could have ensured vigorous competition and enhanced the country's availability and cost-effectiveness. However, these have occasioned corruption in the industry.

## 6. Theoretical framework on concept of deregulation

The knowledge of deregulation theories can assist with insights for fighting corruption and ineptness predominant in the industry. Two theories are fundamental for this study: Resource Curse Theory and Sustainable Development theory.

### 6.1. Resource Curse Theory

Resource Curse Theory was formed around 1970–1990. The theory buttress that countries rich in natural resources often encounter gloomy economic progress compared to economies with meagre natural resources (Antonakakis et al., 2017). This occurs due to the decline in competitiveness of other economic sectors and the mismanagement of oil revenues. The model supports the research by imploring emerging nations to culminate predicaments connected with resources rich States, for instance, extreme poverty, scarcity and expensive petroleum products even though the countries are blessed with abundant crude oil, poor social and oil infrastructures are the significant challenges in the countries. Symptoms are weak regulatory institutions, internal unrest and official corruption (Babalola 2014). Deregulation is to guarantee the promotion and development of the downstream petroleum sector through functioning refineries and a coherent legal framework that will protect and prioritise the social, economic, and environmental interests of Nigerian to satisfy the present needs as conserving the same for upcoming generation's necessities. Emerging States must ensure that their downstream petroleum sectors encourage efficiency through sound institutional and regulatory transformations to boost advantageous competition, development and the theories support the research's analysis by highlighting the necessity to conserves and protect the State's downstream petroleum sector for future generation's needs. It also highlights the need to enhance Nigeria's social and economic development through her abundant petroleum resources for sustainability and her citizens' benefits.

The theory helps the study by emphasising the need for consistent enforcement of the extant legal framework on the downstream petroleum sector in all developing petroleum exporting countries. The

**Table 1.** Nigeria's refineries, years of creation and petroleum production volumes.

S/N	Refineries	Years of Creation	Installed Volumes and Current Volumes	Comments
1.	The first Port Harcourt Refinery	1965	Originally 35,000 per barrels daily (Bpd) but later expanded to 60,000 per barrels daily (bpd).	Despite having a nameplate refining the capacity that exceeds demands, Nigeria is categorised as the 3 <sup>rd</sup> position in importation of petroleum commodities in Africa, importing more than 80% of its petroleum products consumed.
2.	Warri Refinery	1978	Originally it was 100,000 per barrels daily (bpd) but progressed to 125,000 per barrels daily (bpd) in 1986.	A total shifting from a "Net Imports" to "Net Exports."
3.	Kaduna Refinery	1980	It was initiated with 100,000 per barrels daily (Bpd) capacity but later upgraded to 110,000 per barrels daily (bpd) in 1986.	The refinery has not been working optimally.
4.	The second Port Harcourt Refinery	1989	It was commissioned with 150,000 per barrels daily (bpd).	The focus on the refining of petroleum products is imperative in Nigeria (PWC 2017).

Sources: The Author Created the Table, but the contents were sourced from different sources duly referenced.

**Table 2.** Pump price (₦) per litre of fuel in some crude oil exporting countries.

S/N	Countries	Pump Price Per Litre (₦) (\$) 2020	Minimum Wage (₦) in the year 2020	Population (2020)	Production "000" BPD in 2020
1.	Saudi Arabia	205 (USD 0.54)	293, 159.63(USD769.45)	21,607,000	9,683
2.	Russia	217 (USD0.57)	69,730.00(USD183.02)	145,917,921Million	10,800
3.	Kuwait	126 (USD0.33)	79,272.00 (USD208.06)	4.7 Million	2,662
4.	Qatar	170 (USD0.45)	73,400.00 (USD192.65)	2.88 Million	810
5.	Canada	257 (USD0.67)	2,978.02 (USD7.82)	37,653,690	1,276
6.	United States	248 (USD0.65)	2,660.75 (USD 6.98)	330,488,351	10,961
7.	Venezuela	0.23 (USD0.00060)	1,277.65 (USD3.35)	28,435,940	760
8.	Iran	36 (USD0.094)	78,905.00 (USD207.10)	83,992,949	2,080
9.	Libya	38.18 (USD0.10)	115,489.51 (USD 303.12)	6,871,292	146
10.	Algeria	128 (USD 0.34)	53,713.04 (USD 140.98)	43,851,044	1,007
11.	Iraq	239 (USD0.63)	77,036.10 (USD 202.19)	40,222,493	4,594
12.	Nigeria	₦145.00 (USD0.38) but reduced by the Federal Government on March 18, 2020, to ₦125.00 (USD 0.33) but further reduced to ₦123.5 (USD 0.32) on April 1, 2020. As of March 4, 2021, the pump price per litre in Nigeria is between ₦162 (USD 0.43) - ₦170 (USD 0.45)		204,76,614	1,789
13.	United Arab Emirate	209 (USD 0.51)	206,825.30 (USD 542.85)	9,890,402	3,040
14.	Angola	116 (USD 0.28)	1,518,193.62 (USD 3,984.76)	32.87 Million	1,390
15.	Norway	512 (USD 1.25)	5,621.86 (USD 14.76)	5,405,345	1,485
16.	Brazil	328 (USD 0.80)	75,120.83 (USD 197.17)	212,150,100	2,586
17.	China	314 (USD 0.77)	128,133.78 (USD 336.31)	1,408,526,449	3,781
18.	Germany	515 (USD 1.25)	3,707.37 (USD 9.73)	83,712,702	40.652
19.	Sudan	52 (USD 0.13)	2,999.71 (USD7.87)	43,849,260	215.800
20.	United Kingdom	524 (USD 1.28)	689,188.22 (USD1,808.89)	67,886,011	984.879

Sources: The Author created the table, but the content was sourced from other sources were duly referenced.

theory further highlights that petroleum resources endowed nations are the dearth of economic growths that is equivalent with their rich energy resources owing to predominant bribery and unwillingness to expand and deregulate their thrifths and extractive resources to agronomy, reliable raw materials and others to prevent mono-economy syndromes and to boost their manufacturing growths to end the various challenges associated with subsidy payments such as corruption and inefficiency. There is, therefore, the need for stringent enforcement of its extant laws on transparency in the extractive industries and other cogent ecological laws to safeguard societal, commercial and ecosystem wellbeing in the industry (Olujobi and Oyewunmi, 2017).

## 6.2. Sustainable Development theory

Sustainable Development theory propounded in 1980 at Stockholm Seminar on Humanoid Ecosystem which argues that governments should utilise their downstream petroleum possessions in ecological modus for the growth that assuages the present necessities devoid of conceding the capacity and the necessities of the future breeding. The theory helps the study comprehend the need for efficient utilisation of the downstream petroleum sector, the strategy of funding, the thrust of high-tech innovations and regulatory legal regime in compliance with the best global practice for the sustainability of humanities nature. The theory emphasises the need to deregulate the downstream petroleum resources, among

**Table 3.** Comparison of modular refineries and conventional refineries.

S/N	Modular Refineries	Conventional Refineries	Remarks
1.	Flexible to meet demand	Multiple configuration options topping, coking, cracking	High initial capital outlay/long payout
2.	Lower capital requirement	Fewer staff per Effective Distillation Capacity	One location for different markets
3.	Minimal space	Production of higher value product	significant space/land requirements
4.	Quick and easy installation	High production capacity	Less expensive and simple to set up.
5.	Greater control over the environment and work process during construction	Economies of scale leading to higher margins on products	Significant turnaround time for construction
6.	Thirty thousand capacity barrels per day. Twenty thousand diesel barrels per day.	Two hundred thousand capacity barrels per day.	Capital outlay/long payout
7.	Investment (United States' Dollars) on Premium Motor Spirit (PMS) 187 million Investment (United States' Dollars) 92 million diesel	Investment (United States' Dollars) on Premium Motor Spirit (PMS) 7 billion (PWC 2017).	Capital outlay/long payout

Sources: The Author created the table, but the Content was Sought from PWC: Nigeria's Refining Revolution, available <https://www.pwc.com/ng/en/assets/pdf/nigeria-as-refining-revolution.pdf> (accessed August 31, 2020),10.

**Table 4.** The trajectory of Nigeria's petrol pump price from 1976 – 2020.

S/N	Government and Year(s)	Original Price Per Liter	Increment in Price Per Liter and Comments
1.	General Gowon in 1973	6 kobo (USD 0.00015)	8.45 kobo (USD 0.00021)
2.	General Murtala 1976	8.45 kobo (USD 0.00021)	9 kobo (USD 0.00022)
3.	Chief Olusegun Obasanjo October 1, 1978.	9 kobo (USD 0.00022)	15.37 kobo (USD 0.00038)
4.	Alhaji Shehu Shagari, again on April 20 1982, increased the pump price from 15.37 Kobo (USD 0.00038) to 20 Kobo (USD 0.00049).	15.37 kobo (USD 0.00038)	20 kobo (USD 0.00049)
5.	On March 31, 1986, Ibrahim Babangida increased the pump price from 20 Kobo (USD 0.00049) to 39.5 Kobo (USD 0.00096). (Olujobi et al. 2020)	20 kobo (USD 0.00049)	39.5 kobo (USD 0.00096)
6.	On April 10, 1988, General Ibrahim Babangida enhanced the pump price from 39.5 Kobo (USD 0.00096) to 42 Kobo (USD 0.0010)	39.5 kobo (USD 0.00096)	42 kobo (USD 0.0010)
7.	On January 1, 1989, the stated administration ordered non-commercial cars to pay 60 kobos (USD 0.0015) per litre for petrol while business-related cars paid 42 kobos (USD 0.0010) per litre.	42 kobo (USD 0.0010)	Non-commercial car was to pay 60 kobos (USD 0.0015) per litre while commercial vehicles paid 42 kobos. (USD 0.0010)
8.	Likewise, on March 6, 1991, the Babangida government high the pump price another time from 60 Kobo (USD 0.0015) to 70 kobos (USD 0.0018).	60 kobo (USD 0.0015)	70 kobo (USD 0.0018)
9.	In 1992 the same Babangida's administration also uplifted the pump price from 70 Kobo (USD 0.0018) to ₦3.25 (USD 0.0079)	70 kobo (USD 0.0018)	₦3.25(USD 0.0079)
10.	Abacha's regime also increased the price to ₦5.00, (USD 0.012) but after mass protests by Nigerians across the country, the price reduced to ₦3.25 (USD 0.0079) on November 22, 1993.	₦5.00 (USD 0.012)	₦3.25 (USD 0.0079)
11.	On November 8, 1993, the price was again increased by Abacha's regime from ₦3.25(USD 0.0079) to ₦11.00 (USD 0.027).	₦3.25 (USD 0.0079)	₦11.00 (USD0.029)
12.	Similarly, on October 2, 1994, it was again, increased to ₦15.00 (USD 0.037) only to be cut two days later to ₦11.00 (USD 0.027) by the Abacha's government after serious protests by Nigerians (Baghebo and Beauty, 2015).	₦15.00 (USD 0.39)	₦11.00 (USD 0.029)
13.	On December 20, 1998, Abdulsalami Abubakar increased the pump price to ₦25.00 (USD 0.066) but again cut the price to ₦20.00(USD 0.052) on January 6, 1999.	₦25.00(USD0.066)	₦20.00 (USD 0.052)
14.	On June 1, 2000, Olusegun Obasanjo increased the petrol price per litre to ₦30.00 (USD 0.079) but cut-price the to ₦25.00 (USD 0.066) on June 13, 2000, the pump price was further changed to ₦22.00 (USD 0.058) per litre.	₦30.00 (USD 0.079)	₦22.00. (USD 0.058) Subsidy reform partially Successful.
15.	On January 1, 2002, the Obasanjo administration uplifted petrol's pump price from ₦22.00 (USD 0.054) to ₦26.00 (USD 0.063) and ₦40.00 (USD 0.10) on June 23, 2003. Also, in 2004 the same government increased the pump price from ₦42.00 (USD 0.10) to ₦50.00 (USD0.12) and from ₦50.00 (USD0.12) to ₦65.00 (USD 0.16) in the same year.	₦22.00(USD0.054)	₦40.00 (USD0.10) Subsidy reform partially Successful.

(continued on next page)



Table 4 (continued)

S/N	Government and Year(s)	Original Price Per Liter	Increment in Price Per Liter and Comments
16.	In 2007 the government of Chief Olusegun Obasanjo escalated the price from ₦40.00 (USD0.10) to ₦70.00 (USD 0.18)	₦40.00 (USD0.10)	₦70.00 (USD 0.18) but later reduced to ₦65.00 (USD 0.17) in May 2007 by the Umaru Musa Yar'Adua.
17.	In 2009 Umaru Musa Yar'Adua	Reduction from ₦75.00 (USD 0.20) to ₦65.00 (USD 0.17)	He withdrew ₦10 (USD 0.026) subsidies from petrol no subsidy reform.
18.	In 2012 Jonathan escalated the petrol price from ₦65 (USD 0.17) to ₦141 (USD 0.37)	₦65 (USD 0.17)	Due to mass protest from Labour Unions, it reduced to ₦86. (USD 0.23) The subsidy reform partially successful.
19.	In 2016 Muhammadu Buhari increased the fuel price from ₦86 (USD 0.23) to ₦145 (USD 0.38).	₦86 (USD 0.23)	₦59.00 (USD0.15) subsidy withdrawn. Price adjusted from ₦97 (USD 0.25) to a maximum of ₦145, (USD 0.38) no pushback.
20.	2017–2020 Muhammadu Buhari still maintain the pump price of ₦145 (USD 0.38) per litre. On March 18, 2020, the government announced the reduction in the pump price of petrol from ₦145.00(USD 0.38) to ₦125.00 (USD 0.33) As of March 4, 2021, the pump price is between ₦162 (USD 0.43)- ₦170 (USD 0.45) per litre.	As of March 4, 2021, the pump price is between ₦145 (USD 0.38) - ₦148 (USD 0.39) per litre.	Payment of subsidy on petrol is still ongoing, thereby encouraging corruption in the sector.

Sources: The Author created the table, but the contents were sourced from different sources duly referenced.

others, for the benefits of current generations and future breeding without damaging the ecosystems. Therefore, there is the need to adopt a comprehensive deregulation policy to end subsidy payments, promote the adequate supply of petroleum commodities in Nigeria, and boost efficiency in its energy sector through regulatory reforms that will enhance healthy competition among petroleum marketers for the common good of all Nigerians (see Tables 1, 2, 3, 4).

## 7. Findings and discussion of results

The study observed that the laws on the management of Nigeria's downstream oil industry is not detailed enough, it creates an opportunity for conflict of statutory roles between the Petroleum Minister, the Nigerian National Petroleum Corporation (NNPC), the Department of Petroleum Resources (DPR), the Petroleum Products Marketing Company (PPMC), the Petroleum Products Pricing and Regulatory Agency on setting the prices of petroleum commodities due to overlapping of functions. This has occasioned instances where the agencies work at cross purposes. It has hindered the efficient valuing of oil commodities as it does not permit the marketplace dynamism to control the price of petroleum commodities. The roles of government institution should clearly be defined in the enabling laws in downstream petroleum. During the former President Goodluck Jonathan's administration, the Petroleum Product Pricing Regulatory Agency (PPPRA) on January 1, 2012, declared full elimination of petrol subsidy, but it revised after much protest by the Nigerian Labour Unions without considering the benefits of total deregulation and removal of fuel subsidy which has given room for corruption in Nigerian downstream petroleum. If correctly applied by the regulatory agencies, the downstream petroleum industry's deregulation will transform the sector into a competitive industry that is market-driven. The study further uncovers that if the sector wholly deregulated, it will enable market forces to control petroleum products prices; rather than the Federal Government fixing petroleum product prices.

According to Adebolu and Vhritherhire (2002), the wrong turn around maintenance of the refineries regularly occasioned the refineries' breakdown and fuel scarcity and the upsurge in fuel, corruption, and fraudulent practices the product scarce. This affected the economy badly. The causes of artificial scarcity of refined petroleum products in the country are poor turnaround maintenance of the existing refineries, reduction in crude oil allocation, militancy, corruption, mismanagement, smuggling, vandalism of pipelines, poor road network, and strike National Union of Petroleum and Natural Gas (NUPENG), Petroleum and Gas Association of Nigeria and National Association of Road Transport Owners (NARTO) among others.

The paper's main innovation is the need for stringent and comprehensive law to combat sabotage and unethical activities in the sector. Overhauling, restructure of the oil sector, and diversification of other sectors' prolific base has been brought to light. The study has examined the need to address oil infrastructure decay to facilitate the easy distribution of petroleum products in Nigeria. The study has provided valuable policy options to salvage the sector.

## 8. Conclusion and policy implications

This research investigated the deregulation downstream of the Nigerian oil sector and advocated the industry's need for full deregulation. The research relied on extant literature to have a conceptual view of the topic. The reform will turn NNPC into full commercial, a viable legal entity that is profit-driven with opportunities to raise cash from the capital markets through the provision of the Petroleum Industry Governance Bill, 2017. Nigeria has large petroleum product supply gaps. Lack of working refineries and heavy pressure on infrastructure from resultant importation has been a critical cause of supply shortages. Total deregulation of downstream petroleum will end petroleum commodities scarcity in Nigeria and promote effectiveness in the sector. There is room

for further research to gain additional insights into different dimensions to address deregulation.

## 9. Recommendations

The following policy recommendations are proffer:

- Award of oil licences to more investors to establish functioning private modular crude oil refineries, an off-the-shelf panacea, is a cost-efficient investment alternative for investors. It can be located within the existing refineries or marginal onshore fields. The refineries should work at full capacity to meet up with our daily fuel consumption capacity through turnaround maintenance. To end the subsidy regime requires strong political will, sensitisation of all stakeholder and Nigerians on the benefits of total deregulation in the industry.
- There is a need to diversify the country's economy into Agriculture, solid mineral or renewable energy, which is abundant in Nigeria, to reduce over-reliance on petroleum commodities. More petroleum marketing companies should be supported through tax incentives to participate in petroleum products importation and allocation. The Federal Government-owned Refineries should also denationalise to function correctly to dissuade petroleum commodities importation. These measures, if adopted, will open enabling environment for deregulation policy to thrive in Nigeria's downstream petroleum through strict application of palliative actions that would cushion the adverse impacts of total deregulation of the downstream petroleum industry on Nigerians.
- Adopting Norway's model is one of the countries with the finest governance structure in the oil industry.

### 9.1. Study limitation and implications

Data on the downstream oil industry's operations and its effect on Nigeria's economic growth are not sufficiently available due to confidentiality clauses in most oil and gas agreements that prevent public disclosure of oil transactions. This has limited generalising the research findings, limiting access to some required information for the research. However, the study is suitable for adopting the sectors and dealing with some oil firms' operational clandestineness and regulatory agencies in the industry. Future researchers are commended for utilising the quantitative assessment method to appraise the effects of deregulation policy in the oil sector to supplement the current literature in the field.

## Declarations

### Author contribution statement

OLUJOBI, Olusola Joshua: Conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

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### Declaration of interests statement

The authors declare no conflict of interest.

### Additional information

No additional information is available for this paper.

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