

ENTERPRISE RISK MANAGEMENT IMPLEMENTATION AND OPERATIONAL PERFORMANCE IN THE PETROLEUM INDUSTRY: A GOVERNANCE PERSPECTIVE

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Abstract

The Nigerian Government's preoccupation for good governance in the oil and gas sector has been pronounced since the return of civil democratic dispensation in 1999. This initiative has driven the implementation of reforms in the petroleum downstream sector for improved service delivery. However, there has been little transformation in the area of risk management as one of the critical areas of reforms on good governance for enhanced service delivery. This paper presents an exploratory study on risk management implementation based on the COSO 2017 Enterprise Risk Management-Integrating with Strategy and Performance as a workable framework for risk-based governance in the Petroleum Equalisation Fund (Management) Board (PEFMB) and its successor agency, Nigeria Midstream Downstream Petroleum Regulatory Authority (NPRA). The research methodology employed was the literature survey approach anchored on a case study research design. The major findings of the study indicated that the PEFMB lacks a befitting integrated risk management framework for executing a seamlessly coherent, risk-based strategy to achieve its corporate mission and vision. This outcome suggests that entrenching and implementing corporate-wide risk management initiative would help minimise the organisation's operational and non-operational risk elements and also to optimise on new frontiers of opportunities in the liberalised downstream sector of the petroleum industry in Nigeria in the post Petroleum Industry Act 2021 era. This would invariably lay a solid foundation for improved risk-based governance for enhanced operational performance of the Board and its Successor, the NPRA and for excellent service delivery in the Nigerian oil and gas sector.

Keywords: Enterprise Risk Management, Performance, Governance, Petroleum Management, Regulatory

1. Introduction

The landscape of the Nigerian downstream sector of the petroleum industry has recorded significant changes in structure, complexity and uncertainty since the commencement of the partial deregulation of the sector which began in 1998. The increasing complexity and materialisation of risks is of serious concern for management of all businesses and institutions both in the private and public sector organisations (Hardy, 2010; Management Solutions, 2014). According to McPhee (2005), risk management is a crucial function for sound management and in furtherance of good governance framework in all organisations. In the Nigerian Public Service, some significant legislative, regulatory and institutional changes have been implemented as spearheaded by the Federal Government to improve good governance and public accountability through the Bureau of Public Service Reforms (BPSR). Consequently, the Federal Government has, in the spirit of New Public Management, entrenched managerial discretion in the entire gamut of public administration with emphasis on the use of private sector initiatives in public management, for enhanced accountability, good governance and service delivery (BPSR, 2015A) and owing to institutional pressure for change management and new managerialism for enhanced performance and effective service delivery (Bowrey, 2008).

Organisations must adapt to changes with thoughtful leadership and govern strategically for managing the increasing complexity, volatility and ambiguity of the global environment (COSO, 2017). Owing to the prime significance of the downstream sector to the nation's economy, the government agencies responsible for the regulatory activities have been concerned with improving governance against the backdrop of recent fuel subsidy scandals especially the colossal fuel subsidy scam of 2012-2019, the risks of inadequate oil supply chain management, recurrent fuel scarcity, over-reliance on import of refined products, the vagaries and volatility in the prices of oil and refined imported products, foreign exchange crises, low capacity utilisation of the local refineries and pipelines vandalism and products diversion and sabotage. The experience of the negative impact of the 2008 global financial crises on the economy was monumental arising from exposure to toxic assets in the capital market linked primarily to the downstream oil and gas sector has triggered the need to consider risk-based decisions in government business for regulatory governance and risk-based systems.

Majority of OECD Countries especially in Canada, USA, Australia, many public sector institutions have implemented or have declared their intentions to implement ERM as an integrated risk management strategy for superior performance and service delivery (McPhee, 2005; Hardy, 2010; IRGC, 2013; Martens & Perraglia,

2017). In Sub-Saharan Countries, the South African Government has adopted the implementation of the ERM initiative in a number of public sector organisations (Pillay, 2015). In the Nigerian public sector, the Central Bank of Nigeria (CBN) and the Debt Management Office have both recognised the significance of risk management and each has established Risk Management Departments to enhance risk-based strategy formulation and implementation to ensure macro-economic stability, good debt structure, risk evaluation, debt sustainability and for sustained economic growth and development of the economy (Oniha, 2016). In 2018, the BPSR has released a Corporate Governance Manual for Governing Boards/Councils of Federal Parastatals, Agencies and Commissions which highlighted the imperatives for risk governance oversight duties of Public Sector Governing Boards and Council in ensuring conformance and performance in public service delivery. Consequently, the Nigerian public service in general and the PEFMB and the Successor- the NPRA in particular can hope to sustain its survival and relevance in the midstream/downstream sector by considering risk-based decisions, beneficial innovation and crafting strategy informed by risk consciousness for improved service delivery and superior performance.

Risk has had grievous consequences on good governance and organisational performances of both the public and private sector organisations. The petroleum industry is usually embedded with high risk factors and critical challenges in all spheres of the sector (Ghazali, Lefebvre & Lefebvre, 2013). The risk management practices and regulatory failure and inadequacies of the oil and gas industry in Nigeria have been documented by many scholars (Agbonifo, 2016). Risk-based regulation is seen as critical factor in the risk management performance of the oil and gas sector in Nigeria (Muazu & Tasmin, 2019). Until July 2018, the Nigerian public sector reforms have not considered risk management as an important governance issue in the public sector entities, particularly business-oriented institutions of government. At best, risk management was based on the traditional risk management model characterised by reactionary approach to the occurrence of risk based on risk insurance and hazards (Hardy, 2010), with the public sector generally being described as having less developed ERM systems (Paape & Spekle, 2012; Oniha, 2016). It is pertinent therefore, to buy into ERM practices in the entire oil and gas sector. Sherwood (2013) canvassed that due to uncertainty and risks of the oil and gas industry, it has become necessary to implement ERM for effective performance. Owing to the significance of the petroleum industry and the quest for effective service delivery, the PEFMB and its Successor- the NPRA must adopt and implement holistic and robust risk management strategy for effective performance.

The Nigerian public service has been experiencing serious challenges and uncertainties owing to ups and downs in both the domestic and international scenes with serious impact on service delivery and performance. The outcry of poor public service delivery experienced in the country were attributed to dysfunctionality and arbitrariness of the public service institutions (BPSR, 2015B), poor governance structure and monitoring (Tijjani, 2014) and lack of sound risk management system (Sanusi, 2011) with the public sector generally characterised by weak risk management capabilities (Nolan & Thurber, 2010). The growing complexity and risks of the downstream sector in general and the operational and non-operational risks associated with the mandate of PEFMB in particular and its Successor-NPRA) and the enactment of the PIA 2021 have questioned the adequacy of the incoherent and silo-based risk management and the controlled-based internal audit being used in the regulatory agencies for enhanced service delivery. Since the partial deregulation and the subsequent enactment of the Petroleum Industry Act (PIA) 2021, a number of emerging risks and complexity are being speculated that perhaps challenged the effectiveness of the governance of the regulatory agencies in general and PEFMB and the Successor- NPRA in particular. Rogers and Ethridge (2016) asserted that implementing and applying enterprise risk management practices is very crucial for today's unstable and risky economy and strengthening of good regulatory practices of the downstream government agencies for improved performances (Tijjani, 2014). McRae and Balthazor (2000) have canvassed that entities in the Oil and Gas Industry should conscientiously plan and implement Enterprise Risk Management Frameworks so as to serve as the building-blocs for corporate governance, internal audit and organisational control systems for the attainment of organisational goals and objectives. To the best of the knowledge of the researchers as found in the related literature, there are rarely research studies that attempted to explore the issue of risk management practices and implementation in relation to governance among the public sector agencies in the downstream sector of the Nigerian petroleum industry. This study therefore, seeks to explore the adoption and implementation of the 2017 COSO Enterprise Risk Management-Integrating Strategy with performance - for good governance in PEFMB and its Successor- the NPRA. The main objective of this study is to identify the specific operational and non-operational risks confronting the Petroleum Equalisation Fund Management Board (PEFMB) and its Successor- the NPRA and then explore how the adoption and implementation of Enterprise Risk Management (ERM) would enhance performance of the agency and its Successor, the NPRA.

2. Review of related studies

2.1 Enterprise risk management implementation

It is important to stress from the onset that Enterprise Risk Management has emerged only recently as a new perspective on organisational risk management. Enterprise Risk Management is both a new concept in theory and in the global corporate governance practice which is yet to be fully implemented in most entities in the global corporate arena (Muralidhar (2010) and especially in the public sector (Cooper, 2010). McPhee (2005) asserted that in both private and public sectors, the ability to identify and manage risks is an important aspect of sound management and an indication of sound governance framework. Despite the development of abundant principles, guidelines and frameworks for the implementation of risk management the field is not mature but rather emerging (Kaplan & Mikes, 2012; Muralidhar, 2010). Consequently, there have been academic and professional research undertakings to examine the determinants and consequences of the implementation of risk management initiatives in organisations.

Prior research studies established that the adoption of enterprise risk management practices was motivated by requirements imposed by legal, regulatory, compliance and governance obligations (Palermo, 2014; Boniface, 2016; IRGC, 2013, Gates, Nicholas & Walker 2012; Liebenberg & Hoyt, 2003). A review of the literature on the implementation of enterprise risk management in both the private and public sector entities as an important corporate governance matter, specifically concerns issues of challenges and barriers to ERM implementation, the critical success factors in Enterprise Risk Management implementation and the benefits and corporate value derivable from the implementation of enterprise risk management practices in organisations. Empirical evidence indicates that understanding and appreciating the challenges and possible barriers to the implementation of the enterprise risk management perspective is crucial as they affect the extent and success of ERM implementation for organisational success which include lack of proper framework for the entity supported by IT System (Kerstin, Simone & Nicole 2014) inadequate resources for ERM implementation (KPMG, 2010; Gates, 2003) lack of robust organisational structure (Rao, 2007), improper system composition, imprecise metrics, the human factor and complex operating environment (Kerstin, et. al., 2014), lack of sufficient knowledge, competence and experience (Marcinkowski, 2016), lack of culture of risk avoidance, poor commitment of managers and political leaders, weak internal audit processes and inadequate regulations and limited integration of risk management metrics (Boniface, 2016).

Other empirical research studies examined the Critical Success Factors (CSFs) for the implementation of ERM which include multifarious factors but not exclusively

limited to the critical influence of organisational culture as the most significant success element in effective ERM implementation (Abdul Manab, Othman & Kassim, 2012; Muralidhar, 2010; Rao, 2007) regulatory influences (Paape & Spekle, 2012) influence of having senior management in charge of risk management (Onder & Ergin, 2012) having a clear ERM ownership, robust risk communication mechanism and risk awareness culture Xianbo, Bon-Giang & Pheng (2012), support of governing boards and top-level management for successful implementation of ERM (COSO, 2004; 2017; Xianbo et al., 2012) the influence of compliance, risk culture, robust risk management information system, risk knowledge sharing, adoption of organisational innovation, competent staff and appropriate leadership role have been reported to have positive influence on financial and non-financial performances of corporate organisations (Ahmed & Manab, 2016).

Other streams of empirical research studies on ERM implementation investigated the corporate benefits and value for adoption and implementation of enterprise risk management practices in organisations include the works of Gatzert and Martin (2013) which investigated the influence of organisational size and level of institutional ownership on significant positive effect on corporate value and performance, the influence of Board size and independence on positive market optimisation and Return of Equity of banks (Aebi, Sabato & Schmid; 2011); improving reporting quality, accountability, productivity improvements, enhanced decision-making, optimising shareholder value, improved organisational profitability and earnings and enhanced sustainable competitive advantage in the market place (PWC, 2015; Gates 2003; 2012; Hoyt & Liebenberg, 2011; Gates et. al. 2012; Halachmi, 2006). The review of related literature encapsulated salient areas for the implementation of Enterprise Risk management in qualitative and empirical research. The review indicates that successful implementation of the ERM practices must be seen not as a discrete endeavour but as a continuous process (Hardy, 2010) that must be nurtured to maturity (Muralidhar, 2010) which will crystallise into sustained organisational value and benefits towards the attainment of corporate goals and objectives (Mikes & Kaplan, 2015; Quon, Zeghal & Maingot, 2012; KPMG, 2010).

2.2 The COSO enterprise risk management frameworks

Since the era when organisational risk management has been brought to the spotlight, a new philosophy and paradigm shift towards strengthening risk management on the pedestal of enterprise risk management approach has emerged from both private and public sector organisations in order to navigate the growing

uncertainties of a risk system. Mike and Kaplan (2015) have observed that ERM has assumed a crucial component of contemporary corporate governance reforms with associated emergence of principles, guidelines and frameworks. Prominent Enterprise Risk Management frameworks in the field of risk governance include the 2004 COSO Enterprise Risk Management and the recent updated 2017 COSO Enterprise Risk Management- COSO Enterprise Risk Management- Integrating Strategy with Performance both issued by the Committee of Sponsoring Organisations of the Treadway Commission (COSO).

The Committee of Sponsoring Organisations of the Treadway Commission (COSO) is a voluntary, private sector organisation comprising five professional bodies in the USA namely, the American Accounting Association, American Institute of Certified Public Accountants, Financial Executives International, the Institute of Management Accountants and the Institute of Internal Auditors. COSO represents the global private initiative on corporate governance, internal control, risk management, business ethics, ERM, frauds detection, and financial reporting. The organisation was formed in 1985 to sponsor the National Commission on Fraudulent Financial Reporting which investigated the causal factors leading to fraudulent financial reporting by entities. It also developed recommendations for public companies and their independent auditors, for the Securities and Exchange Commission and other regulators and for educational institutions. COSO is irrevocably committed to and dedicated to providing guidance to executive management and governance entities towards establishing more efficient, effective and ethical business operations globally. To this end, it sponsors and disseminates frameworks and guidance based on in-depth analysis, research and best industry practices COSO (2004).

Against the background of opportunistic accounting, corporate failures and scandals, the Committee of Sponsoring Organisations of the Treadway Commission issued the 2004 COSO Enterprise Risk Management- Integrated Framework as a holistic, enterprise risk management standards, guidelines and recommendations for organisations. The COSO ERM Framework has been described as a watershed risk management standard in the annals of risk governance. The 2004 COSO ERM Framework provides a set of mutually reinforcing and integrated standards that elevated risk management practices to higher pedestals along three-dimensional levels namely Organisational Objectives, Management Operations and Entity's Units COSO (2004). The 2004 COSO ERM Framework has been widely applied to all organisations private, public and non-governmental organisations for integrated risk management initiatives. Hardy (2010) observed that the 2004 COSO ERM Framework had been used in the USA

by Federal institutions as a veritable standard for understanding risk management dynamics and the interrelated components for effective public sector risk management practices.

Owing to the wide acceptance and implementation of the 2004 COSO ERM standards, the Committee of Sponsoring Organisations of the Treadway Commission developed the 2017 COSO Enterprise Risk Management-Integrating Strategy with Performance. Under the new framework which was developed and released in June, 2017, the Committee of Sponsoring Organisations of the Treadway Commission is dedicated to providing thought leadership through the development of comprehensive framework and guidance on internal control, enterprise risk management, fraud deterrence designed to improve organisational performance and oversight and to mitigate the extent of fraud in entities COSO (2007). The new framework focuses on the imperative and significance of enterprise risk management initiative in strategic planning and implementation and integrating it throughout the entity because risk inherently affects and aligns with strategy and performance across the entire gamut of the departments, processes for optimal risk-based performance.

2.3. Review of empirical studies

The Oil and Gas Industry has been identified as a highly integrated characterised with embedded risks and constantly emerging uncertainties (Nolan & Thurber, 2010). A quite number of empirical studies have been conducted on risk governance and performance in the petroleum industry with a few of the research studies focusing on the risk management perspectives. Carneiro, Ribas & Hammacher (2010) analysed oil supply chain management using the value at risk approach to study the net present value optimisation yielding a significant finding that risk-based oil supply management is significant in the oil and gas industry. Tijjani (2014) investigated regulatory governance practices in the downstream sector of the Nigerian petroleum industry focusing on non-risk governance issues like lack of transparency, accountability, and independence and stakeholder consultations. While Muralidhar (2010) investigated the status of ERM in the oil companies of the Gulf Co-operation Council (GCC) with a view to finding out ERM maturity implementations and developing regional-based systematic plan for ERM implementation for a robust, result-oriented and holistic risk management framework in the industries of the GCC members.

Furthermore, Rogers and Ethridge (2016) studied the implementation of ERM in selected fortune 500 Oil & Gas Companies in the USA using the Integrated Enterprise Risk Management COSO Framework. Ambituuni (2016) studied

downstream product transportation and distribution risk management in the Nigerian Oil and Gas industry. Enyinda, Briggs, Obuah & Mbah (2011) conducted the analysis of petroleum supply chain risks in a multinational oil firm in Nigeria using a decision support system model by using sensitivity approach which identified supply chain disruption and escalating energy costs as the major supply chain issues in the supply value chain with recommendation for integrated risk management for mitigating the risks for improved performance. Using a stochastic modeling approach, the IFA (2016) investigated the diverse risks factors affecting the oil and gas industry as a risk management case study as a multi-disciplinary technique for risk modeling in the sector. The research findings indicated that five principal risks elements were inherent including economic, environmental operational, political resources risks with practical recommendations from actuarial professional to assist the oil and gas sector comply with the risk reporting council of the UK Financial Reporting Council regulations and guidelines.

From the onset, it is significant to differentiate between organisational risk management- concerned with an entity's strategic, operational, financial and compliance risks and social risk management which is concerned with public risks (Sarens, Visscher & Van Gils, 2010). A plethora of studies have been conducted on risk management practices in the public sector mostly with European public-sector institutions as the leading developers of risk management standards (Cooper, 2010) and the OECD countries (OECD, 2014; Hardy, 2010). Previous studies have canvassed that public sector organisations should try to evaluate and manage their risks in an innovative and rigorous ways PWC (2015), using proactive and integrated approach (Hardy, 2010), in compliance to government regulations (BPSR, 2018A&B; PWC, 2015), in order to improve public performance and responsiveness (Sarens et al., 2010) with strong recommendation for all public sector institutions to adopt risk-based methodology to strategy and the internal control mechanism to engender organisational effectiveness (McPhee, 2005). The quantitative empirical studies on public sector-based organisations implementing ERM include Halachmi (2006); Sarens et al. (2010); and Palermo (2014) while the qualitative studies of ERM implementation in the public sector include Cooper (2010); IRGC (2013); Boniface (2016) and Andreeva, Ansell & Harrison (2014). All these empirical studies underpinned the significance of embedding ERM systems in public sector institutions for enhanced performance and service delivery.

3. Methods and data

To achieve the research objectives, the literature survey approach was used to explore the current state of knowledge and application of ERM with a view to explore the implementation of 2017 COSO Enterprise Risk Management-

Integrating Strategy with Performance in the PEFMB and its Successor Agency-NPRA. An exploratory case study was adopted to assess how PEFMB, its Successor- the NPRA- can leverage its governance and IT transformation to establish strong risk management framework using the guidance of the 2017 COSO Enterprise Risk Management- Integrating Strategy with Performance. The exploratory approach has been used in public sector risk management research by previous studies (Woods, 2007, Cooper, 2010; PWC, 2015). The research approach was based on literature survey of secondary data sources and case study of the personal agency experiences of the researchers. A literature survey approach has been used in the field of strategic management research and risk management (Falkner & Hiebl, 2015; Verbano & Venturini, 2013; Ennouri, 2013; Vanany, Zailani & Pujawan, 2009). The research therefore, primarily used secondary data sources mainly from the literature, academic and professional journals and the internet which was augmented by the researchers' hands-on-experience and primary data from the Petroleum Equalisation Fund Management Board.

The justification of a case study design is that it has been found to be very useful in exploratory studies, where an inductive approach was also used to provide exposition of empirical observations based on a theory and also formed the basis for theory extensions, refinements and rejection (Otley & Berry, 1994). Both Academic and Professional researchers have vividly recognised the utility of case-based research in the field of management, public administration and corporate governance. The Case Study was deemed appropriate to the current study, as it facilitates deeper appreciation of the types of risk profiles and risk management frameworks and their impacts on performance (Woods, 2007). In this research, review of theoretical and empirical literature relevant to the topic were critical to understanding the current state of knowledge and the existing gaps with a view to serving as a springboard for empirical application and the novelty of the issues of investigation in the Petroleum Equalisation Fund (Management) Board in particular and in the Nigerian regulatory management in general.

4. The Petroleum Equalisation Fund Management Board (PEFMB)

The Petroleum Equalisation Fund (Management) Board was established by a Military Decree No. 9 of 1975 as amended by Decree No. 32 of 1989 as incorporated as Cap P. 11 of the Laws of the Federation of Nigeria (2004). The PEFMB is statutorily charged with the responsibility of reimbursing petroleum marketing companies the losses incurred solely and exclusively for transporting refined petroleum products from the depots to their retail stations pursuant to the Uniform Price Mechanism under the Equalisation Scheme. Prior to the partial

deregulation of the downstream sector of the petroleum industry, the equalisation process covered three white products namely PMS, AGO and DPK. To deepen the mandate of the PEFMB, the Federal Government administratively transferred management of the Bridging Scheme from the NNPC to the Board commencing from December, 1998. The bridging scheme covers the transportation of petroleum products from the source depots to approved destinations beyond 450 kilometres across the country. In 2006, the PEFMB obtained executive fiat for the administration of a sister scheme, the Inter-District programme, aimed at encouraging inter-depot movements of petroleum products across the depots for distances less than bridging threshold of 450 kilometres. With the enactment of the Petroleum Industry Act 2021 on 16th August, 2021, the outstanding claims and liabilities of the PEFMB would be managed by The Successor Agency-the Nigeria Midstream Downstream Petroleum Regulatory Authority (NPRA).

The governance structure of the Board consists of the Ministry of Petroleum Resources as the supervising ministry, its Governing Board, its Top Executive Management and its Internal Audit Unit to ensure good internal control and risk management practices. The Bureau of Public Service Reforms (BPSR) has underscored the imperative for the role of good governance in improving service delivery of MDAs. To this end, it has given a positive guidance and appropriate non-linear framework for improving Management and Governance in the Parastatals. BPSR (2015A) observes that the challenges of management and governance should be tackled with managerial discretion for improvement in processes and systems to engender result-oriented reforms for enhanced service delivery. Strategic practical guidance by the BPSR to incorporate both primary and supporting factors that would provide the core essentials enabling and facilitating factors for the attainment of operational excellence and corporate goals of public sector institutions in Nigeria. The Internal Audit Unit also introduces safeguards for the prevention or the prompt detection of frauds and ensures that controls for loss of cash are adequate. The Internal Audit is also charged with ensuring compliance with the extant rules and regulations and the existence of internal checks. To ensure audit independence, the Head of the Internal Audit Unit is administratively responsible to the Executive Secretary who is the Chief Executive Officer as well as the Chief Accounting Officer of the agency as provided for by Chapter 17 of the Financial Regulations. It is also noteworthy that the Internal Audit Unit has role in ensuring risk management. As asserted by Hardy (2010), from historical perspectives, internal control mechanism in public sector financial management were understood to include attention on managing the risks associated with financial reporting and frauds, which constitute one of the many profiles in the risk universe of an agency. Hence internal audit is invariably intertwined with risk

management and control and serve as a supplementary to the risk management function. As observed by COSO (2004; 2017), although the COSO's Internal Control- Integrated Framework is distinct and has different orientation with the COSO's Integrated Risk Management Framework, neither supersedes the other but they inherently connect.

4.1 Overview of risk management in Petroleum Equalisation Fund Management Board

Despite the lack of integrated risk management framework, the risk management function is not new in the PEFMB. Risk management in PEFMB is fragmented and silo-based that lacks central coordination and oversight. It has been used within the context of insurable risks usually under the oversight of the Legal Unit of the organisation in furtherance to compliance with the insurance of government property and assets and the audit review for compliance with performance bond agreements for execution of procurements and contract obligations. Related to this, in isolated cases various Departments like the Operations, Corporate Services, Finance and Accounts and Information Technology Departments have been discretely managing operational, reputational, financial and information technology related risks toward goal-setting and tracking performance management and control. Hardy (2010) observed that all public institutions must manage risk elements relevant to their organisations so that they are fully aligned with their visions and missions or may be engaging the risk management function as a common management practice. The oil and gas industry has been inherently embedded with unique set of risks and this underscores the significance of effective risk management as a cornerstone of good corporate governance in organisations (McPhee, 2005).

4.1.1 Types of risks facing the Petroleum Equalisation Fund Management Board

A review of the literature and empirical studies conducted in the previous section has been considered in the determination of the risk elements the PEFMB may face in achieving its statutory mandate and strategic objectives.

i. **Strategic Risks:** The idea of strategic risk management may be new to Petroleum Equalisation Fund Management Board. The Board has however, of recent developed corporate strategy for the attainment of the mission and objectives of the organisation. In a turbulent and uncertain operating environment, the PEFMB must embark on deliberate and emergent risk-based strategy in order to manage the uncertainties facing it and enhance public service delivery pursuant to its statutory

and assigned mandates. Oil and gas industry operators must of necessity make strategic decisions and deliberate prioritisation about which projects to pursue and develop to ensure the optimisation of performance and sustainability (Bigliani, 2013).

ii. Operational Risks: For over four decades, the Petroleum Equalisation Fund Management Board has performed credibly well in reimbursing petroleum marketing companies pursuant to the Uniform Price Mechanism (UPM). With the original statutory responsibility for managing the equalisation scheme, its mandate has incorporated assigned responsibilities of the Bridging and Inter-District Schemes thereby experiencing the tremendous expansion of the volume and complexity of its operations. The volume of bridging and equalisation claims have grown manifold, the number of petroleum marketing companies grown to over 5,550. The PEFMB had staff strength of less than 75 by year 2000 to over 450 by 2016.

iii. Financial Risks: PEFMB is a Federal Government Parastatal under the Ministry of Petroleum Resources charged with providing sustainable means of distributing petroleum products at uniform price across the country. As a fund manager and a responsible government agency, it has over four decades, made financial risk management one of its core values according to the dictates of the Financial Regulations and extant treasury circulars. This is accomplished with a dedicated team of over 350 staff under strong and focused management team. For over four decades of unbroken records for financial sustainability, PEFM has a compelling vision for service delivery with a clear mission of ensuring equitable fuel distribution at uniform prices for sustainable development. The major financial risk profiles facing the Board include credit risks and liquidity risks.

iv. Legal, Regulatory and Compliance risks: Managing legal, regulatory and compliance risks is not new to the PEFMB. The primary mission of the PEFMB to the public is to ‘partner with relevant stakeholder’s for effective distribution of petroleum products nationwide for sustainable development’ and to the marketers is to ensure timely reimbursement of marketers’ transportation claim. From 2006, PEFMB have been confronted with regulatory and compliance events with significant risks that impacted on its operations. This included the full deregulation of the AGO in 2006 and by March 2017, the second white product, the DPK, was fully deregulated. At the level of the PEFMB, managing the equalisation scheme of the original white products holistically constitutes a significant step in ensuring equitable distribution of petroleum products at uniform prices nationwide. The agency has performed well in navigating these risks to ensure minimum disruption in the discharge of its mandates. As observed by Sherwood (2013), organisations

operating in the oil and gas industry invariably face an array of political, legal and regulatory risks which must be well managed to ensure sustainability and sound performance.

v. Information Technology related risks: The Petroleum Equalisation Fund (Management) Board invested in e-governance and deployment of state-of-the art ICT to achieve its strategic objectives. Efforts are on-going by the agency to deploy appropriate technologies to advance its corporate mission and objectives. The deployments of the Aquila Database Management System, the use of the SPSS as enterprise solution, the deployment of the RFID technology, IT security and cybercrime risks, and cloud computing risks; all these pose significant IT related risks that could impact on the strategic objectives of the organisation. Therefore, the current IT infrastructure and future IT developments in the Petroleum Equalisation Fund Management Board call for a robust IT governance and risk management. As the implementation of new technologies transform the PEFMB, effective service delivery, procurement and contract management, data management as well as emergency plans and business continuity management initiatives will become more significant risk issues to be optimally managed and controlled for enhanced performance.

vi. Oil supply chain management risks: The Petroleum Equalisation Fund (Management) Board came into existence arising from distortions in the supply of refined petroleum products throughout the country with disparity in pump prices of white products. The Federal Government embarked on expansive development of infrastructures, refineries and pipelines for the movement of petroleum products from the late 1960s. The challenge of the government and petroleum marketing companies was to preserve a good balance between the stock of available products and output in order to minimise costs and ensure lesser risk of security of supply in the value chain. The government has had isolated efforts at ensuring optimal supply system. The lack of adequate and reliable infrastructure has created recurring risks of inefficient supply to the economy and this has invariably affected the role of PEF in achieving its main mandate of ensuring effective distribution of petroleum products at approved prices on sustainable basis

vii. Reputational risks: The Petroleum Equalisation Fund (Management) board has recognised the importance of reputation management in its stakeholder relationships and its relations to its public. Consequently, organisational credibility is accorded high premium. The commitment of the agency to effective credibility management has made the PEFMB to create a corporate Communications Unit

under the Corporate Service Department for effective stakeholder and public relations management and effectively navigate and manage the risks of reputational damage. The perspectives of PEFMB, credibility and corporate reputation management is crucial to earn government's confidence and public trust and stakeholders' buy-in about the mission and vision of the organisation as failure will lead to adverse consequences and reputational risks. The Petroleum Equalisation Fund Management Board has been facing some reputational challenges as regards the recurring risks of fuel scarcity and diversion leading to increase in pump prices beyond the approved pump prices, the role of the agency in post-PIGB era and full deregulation and stakeholder skepticism arising from knowledge gap on the key operational dynamics and claims payment control procedures and system of the agency.

It is absolutely significant to stress that the identified risk profiles facing the Petroleum Equalisation Fund (Management) Board as set in the forgoing section are not exhaustive. Apart from the above risk elements, there are many other risks such as insurance risk, transportation infrastructure, foreign exchange risks and political risks, which could be considered. The risk elements reviewed in the case study are the significant risks confronting the PEFMB as a government agency in the downstream petroleum industry.

4.2. Applicability of the COSO 2017 ERM

Since the emergence of enterprise risk management in business and public spheres, there has been "plethora" of standards and established frameworks to provide "intelligent" guidelines and recommendations for integrated risk management initiatives (Kaplan & Mikes, 2012; Mikes & Kaplan, 2015). The main objective of this research is to explore the imperative for implementing Enterprise Risk Management practices in the Petroleum Equalisation Fund Management Board, its Successor-NPRA as a public sector regulator in the midstream/downstream oil and gas industry in furtherance of good governance in general and risk management in particular. The main stream corporate governance literature has considered risk management as part and parcel of entity's management control system (Gordon, Loeb & Tseng., 2009; Woods, 2007; Kaplan & Mikes, 2012; Mikes & Kaplan, 2013), and being a strategic initiative to mitigate adverse consequences of the risk elements and optimisation of opportunities (Hardy, 2010; Nolan & Thurber, 2010; Sherwood, 2013; Abu Bakar, Abdul Rashid & Rizal (2016). Enterprise Risk Management developed in the field of general and strategic management literature may aid the PEFMB and its Successor- the NPRA) to implement the revised 2017 COSO ERM framework meant to integrate and align strategy and performance to aid the entity attain its strategic objectives. As reported by Muralidhar (2010), the

COSO Enterprise Risk Management Framework has been widely used in diverse entities and has also been adjudged as the most commonly applied as the launching-pad for implementing enterprise risk management initiative in organisations. The new COSO (2017) posits that Management epitomises the role of risk management and must be irrevocably committed to enhancing conversation with the board and stakeholders about deploying ERM to gain competitive advantage and enhance organisational objectives by considering entity's ERM capabilities and the explicit regards of risk elements and their impacts on strategic postures and alternatives and more importantly how well strategy aligns with entity's mission and vision. It is necessary to emphasize that ERM can be optimised for value creation if the underlying strategy are well embedded with the entity's vision and mission to enhance organisational performance.

In this research, the researchers explored the agency-specific risks elements facing the PEFMB and the institutional barriers and critical success factors that would lead to the implementation of ERM practices. Kaplan and Mikes (2012), Mikes and Kaplan (2015) and COSO (2017) have assailed the implementation of ERM practices disregarding the significance of organisation-specific risk factors and aligning the risk management practices with entity's strategy and performances for enhanced performances. In another place, Liu, Low & He (2014), Dabari and Saidin (2015), and Dabari and Saidin (2016) have recognised the imperative of considering the institutional barriers and challenges of implementation of enterprise risk management and Ahmed and Abdul Manab (2016) and Abdul Manab et. al, (2012) examined the critical success factors contingent on successful and effective implementation of enterprise risk management practices in organisations.

To cap it all McPhee (2005) authoritatively and emphatically asserts that public sector entities should consider ERM as a strategic initiative to align strategic objectives, corporate governance arrangement and integrated with corporate planning and reporting cycles to achieve entity's goals and maximise performance. It has been recommended that oil and gas organisations should commence planning for and implementation of an effective ERM framework by integrating its building blocks of corporate governance, internal audit and risk management (Muralidhar, 2010). It is against this background that the governing Board and Management of the Petroleum Equalisation Fund Management Board, its Successor, the Nigeria Midstream Downstream Petroleum Regulatory Authority should consider as a strategic goal the adoption and implementation of the 2017 COSO Enterprise Risk Management Framework- Integrating Strategy with Performance- in order to

enhance organisational relevance, resilience, sustainable performance and value-added service delivery for Nigeria.

4.3 Research Findings

Despite the astronomical rise in the bridging claims over the years, the Board lacks an effective institutional structure for effective self-collection of the bridging fund built into the price template of the regulated product (PMS). Worst still, reliance on the NNPC, a third-party entity, for the collection of the bridging allowance due to the PEFMB had been characterised by collection and remittance inefficiencies, posing significant financial and liquidity risks to the Board for seamless bridging allowance collections and timely bridging claim reimbursement to the petroleum marketing companies. Gboyega, Sreide, Minh & Shukla (2011) observed the issue of risk elements in petroleum governance in Nigeria with specific relevance to the revenue-generating aspects had been an issue right from inception.

Based on the identification, analysis and categorisation of the significant risks confronting the Petroleum Equalisation Fund (Management) Board and its Successor- Nigerian Midstream Downstream Petroleum Regulatory Authority, as indicated in the preceding part of this work, the research has found seven (7) critical risks elements relevant to the operations and strategic performance of the PEFMB and its Successor Agency-NPRA to include: Strategic risk, operational risks, financial risks, oil supply chain management risks, legal and compliance risks, information technology risks and reputational risks. Also, a major finding of the study is that the Board lacks an integrated risk management framework for risk Management. In other words, risk management is fragmented, reactionary and treated as silos often done with treatment of organisational hazards and insurable risks being co-ordinated by the legal Unit of the entity. More closely related to this is that risk management and control is devoid of taken into cognizance the likely risk profiles in strategy formulation and implementation for effective organisational performance. The research has established that PEFMB, its Successor- the NPRA can adopt and adapt the 2017 COSO Enterprise Risk Management Framework- Integrating Strategy with Performance- as a major strategic governance initiative to engender and galvanise risk-based corporate strategy for enhanced organisational effectiveness and service delivery.

5. Conclusion and Recommendations

In line with the findings of the study, the traditional risk management function in corporate governance and strategic management as practiced in the PEFMB does not provide an appropriate foundation for analysis of risk elements and their implications for strategic planning and implementation. This conclusion is confirmed by the insurance-based risk management handled by the Legal Unit and

the controlled-based internal audit function under the jurisdiction of the Internal Audit Unit of the entity. The findings provide logical conclusions that risk management in the PEFMB are currently managed as silos and compartmentalised instead of being handled as an entity-wide integrated strategic initiative for alignment with organisational strategy for the attainment of corporate objectives. The research findings imply that the insurable risk approach of the Legal Unit and the Controlled-based internal audit system in the PEFMB are not adequate enough to manage the increasing risk profiles confronting the entity owing to the growing complexity and precarious nature of the operating environment particularly since the partial deregulation of the Oil and Gas Sector. It is also safe to conclude that fragmented risk-averse nature of risk management within the PEFMB are presently regarded as reactionary and not aligned into the corporate strategy of the entity for the attainment of organisational performance. Overall, the quest for sound governance in PEFMB could be considered as veritable governance and oversight innovation for the introduction of risk management practices to be predicated on implementing integrated risk management philosophy in conformity internationally recognised enterprise risk management architecture like the COSO 2017 ERM Framework.

In line with the findings and conclusions of the research, the following recommendations are being proffered:

i. To the Federal Government: The Federal Government of Nigeria should establish Inter-Ministerial Committee consisting of the Office of the Secretary to the Government of the Federation, Office of the Head of Service of the Federation, the Bureau of Public Service Reforms, the Financial Reporting Council of Nigeria, Office of the Accountant-General of the Federation, , Office of the Auditor-General of the Federation to develop, adopt and adapt enterprise risk management framework in line with internationally recognised standards for application in all public sector entities in the country.

ii. The Governing Board of the Petroleum Equalisation Fund (Management) Board and its Successor Agency, the NPRA should establish a standing Risk Management Committee and a full-fledged Risk Management Department to ensure effective risk oversight in compliance with the Corporate Governance Manual for all Agencies, Parastatals and Commissions as directed by the Bureau of Public Service Reforms and also commission an empirical research to competent and recognised consultants with demonstrated expertise on risk management to consider the applicability of the 2017 COSO Enterprise Risk Management Framework-Integrating Strategy with Performance for adoption in the PEFMB, its Successor-

the NPRA- in order to enhance risk-based strategy formulation and implementation for superior performance and enhanced service delivery.

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