

Impact of Cost Reduction Techniques on Business Stakeholders in the Nigerian Upstream Hydrocarbon Sector

¹Moses Baidu Suleiman & ²Joshua Benson Nadiyasu

¹Department of Accountancy, Federal Polytechnic, Mubi, Nigeria

²Department of Accounting, Adamawa State University, Mubi, Nigeria

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Abstract

In the recent past, the oil and gas upstream sector was faced with challenges of fall in revenue due to fall in crude oil prices and the continuous increase in costs of finding and lifting oil. The expectations of business stakeholders are high on the operators. The research was designed to examine Impact of cost reduction techniques on business stakeholders in the Nigerian upstream hydrocarbon sector. The objectives of the research were achieved using a quantitative method. A survey was conducted on 7 randomly sampled oil service companies in the Nigerian upstream sector: A total of 70 questionnaires were sent by mail to the responded and 60 responded representing 86% response rate. The responses elicited were analysed using Chi-Square test method of data analysis. The study revealed that there was no statistical evidence that cost reduction measures used by oil and gas companies operating in the Nigeria upstream sector has any significant impact on business stakeholders.

Keywords: *Cost Reduction, Business Stakeholders, Stakeholders engagement, Hydrocarbons; Upstream*

Corresponding Author: Moses Baidu Suleiman

Background to the Study

Oil and gas activities comprise of the upstream, midstream and downstream sectors; each sector has a unique role to play in the petroleum value chain. This research centered on the upstream sector. The upstream sector involves search for, exploration of and production of hydrocarbons. The sector is dominated by international oil companies (IOCs) because of its huge capital outlay. Recently, some indigenous companies operate in the sector.

Generally, oil and gas upstream sub-sector has been known to be one of the most expensive sectors in the world due to the amount of resources committed in the production of hydrocarbon. The Nigerian upstream oil and gas sector like any other oil producing nations face challenges of uncertainties and enormous capital outlay. Spending in the upstream sector has been on the increase over the years (Adegbite and Erhimona, 2008; Ariweriokuma, 2009, PWC, 2018). The increase in CAPEX was attributed to difficulty in finding reserves to replace the depleting ones and inadequate technology (PWC, 2018).

Furthermore, input costs were identified to have increased over time such as costs of constructing facilities, which was fingered to be caused by high price of steel and exchange rate. The demand for steel outpaced supply, hence the increase in price of the steel (PWC, 2014). However, Barron and Singer (2015) predicted a decline in CAPEX by 12% in 2015 due to the fall in crude oil price. This scenario plus fall in global crude oil price have put pressure on petroleum companies operating in the upstream to consider cost reduction techniques to survive and return profit to shareholders (Young, 2015). The plan to maximize profit may conflict with some stakeholder's objectives. A good cost reduction programme should involve the relevant stakeholders (Manetti, 2011).

The exploration and production activities value chain consists of several firms that provide wide range of services such as drilling, transportation, constructions, security, etc. These firms depend on the operations of the petroleum producing companies. A decision made by the producing firms has positive or negative impact on the stakeholders especially the business stakeholder.

Stakeholders are various group with interest in a firm's operation. There are majorly three different stakeholders namely, financial stakeholder, business stakeholder, internal stakeholder and community and society stakeholder. This paper focused on the business stakeholders. Business stakeholders in the hydrocarbon industry are key players that operators of oil facilities cannot do without. In this study, business stakeholders are considered as groups that are not formal members of the oil and gas operators, but that may affect or be affected by the project. Such groups are often referred to as business stakeholders or primary stakeholders (Cova and Salle, as cited in Mwangi, 2018).

Therefore, this study tends to examine the effect of the cost reduction techniques in the upstream petroleum companies on the business stakeholders and to ascertain whether cost reduction measures affect service providers in the upstream oil sector.

Null hypotheses were formulated for the study.

H01: Cost reduction measures used by upstream petroleum companies do not have any significant effect on business stakeholders.

H02: Cost reduction measures used by operators in the Nigerian upstream petroleum sector do not significantly affect the oil services firms.

Literature Review

An Overview of Cost Control and Management in the Petroleum Sector

Cost control is a management technique used by managers to achieve the business purpose (Haslam, Tsitsianis, Andersson, and Gleadle, 2015). Olalekan and Tajudeen (2015 p.2) define cost control as “*the practice of managing and/or reducing business expenses.*” Cost control, therefore, includes cost reduction and cost management. Effective cost control in business today has become imperative given the uncertainty in the enterprise world. For example, the global recession of 2008 affected some companies while business with robust cost control strategies survived the challenge (Milic, 2011; Michael, 2013).

The control of cost that involves cost reduction generates conflicts in most organizations today. For instance, within an organization a line manager or employees may reject cost cuts due to reasons affecting the unit. Similarly, external service providers and other stakeholders may discard the technique if it is detrimental to them (Milic, 2011). Businesses recently employed cost reduction strategies than other forms of cost control especially during economic downturn (Milic, 2011). Cost reduction is described by Himme (2012) to involve a deliberate measure undertaken to reduce costs of running business and increase or maintain a profit margin by management. Leinwand and Mainardi, (2013) argued that cost reduction measures have a negative impact on the long-term strategy of an organisation due to timing of the implementation.

Sometimes, the application of cost reduction techniques affects the policy of a business' operating environment especially in the petroleum sector. For example, Young (2015) advocated for cost cut using staff retrenchments in oil and gas companies. Meanwhile, governments' policy requires the operators to employ more workers (Balouga, 2012). In this case, there could be a conflict of interest, which may affect the realization of the aim of applying the control technique.

Recently, firms operating in the upstream Petroleum sector face challenge of dwindling crude oil price, a situation that has necessitated the implementation of cost reduction measures across the industry (Holter, 2015; Young, 2015). Wright and Gallun, (2011) noted that investment in the upstream petroleum sector is enormous and characterized by a significant risk compared to other areas in the oil and gas business (Midstream and downstream). Therefore, managers in this sector plan to maintain status quo or make more profits by adopting COST REDUCTION measures (Leinwand and Mainardi, 2013).

Effect of Cost Reduction Measures During Economic Crisis

Cutting cost during crisis time posed several challenges to the existence of a company that initiates it. Basically, research has it that 93% of cost reduction exercise initiated as a result of

economic downturn could not be sustained for a long term and that the costs of reinitiating projects eventually exceeds the costs saved during the programme (KPMG, 2010; Milic, 2011). Buntak, Drozdek and Sesar (2014) discovered that cost reduction measures implemented during crisis period are often aggressive hence affect the quality of management in an organisation.

Furthermore, a review of the literature revealed that cost reduction during a crisis is a reactive approach rather than proactive (Milic, 2011, 2013). The study also corroborated the fact that post-crisis cost increases and sometimes leaves firm worse than the pre-crisis time. However, a contrary opinion was given by another study that the best approach to economic recession remains cost reduction measures (Bardhan and Jaffee, 2005).

The effect of cost reduction programmes during economic downturn may look interesting in the short-term due to the drastic cut in several expenses such as IT costs, staff training, freezing compensations and employee retrenchment (American Agent & Broker 2009; Milic, 2011). However, in the long run, this strategy could lead to deficiency in technological skills due to lack of training; reduced productivity because of lack of incentives and ultimately, fear of layoff engulfs employees, which eventually affect the overall performance of the business (Appelbaum, Lavigne-Schmidt, Peytchev, and Shapiro, 1999; Milic, 2011). More so, other short-term measures like suspension/canceling of capital investment, if done without proper analysis, could result in a loss (Leinwand and Mainardi, 2013). Nevertheless, a good cost management with strategic focus may yield lasting results (Milic, 2013; Olalekan and Tajudeen, 2015).

The main challenge of rushing cost reduction programmes lies with post-crisis era. When the economic activities begin to revive, companies that implemented aggressive short-term strategies are prone to losses and high costs of readjustments (KPMG, 2013; Milic 2011, 2013). For example, the survey carried out by Leinwand and Mainard, (2013) and Milic (2013) claimed that the initial team split may be difficult to be formed and that companies may lose reputation in the sight of potential employees and other stakeholders.

Cost Reduction in the Petroleum Industry

The instability in crude oil prices has been traced to 1960s and 1970s where companies were confronted with a substantive challenge to cover costs and make profits. To confront the issue, firms operating in the petroleum sector established various cost reduction measures.

Implementing cost reduction measures in the upstream oil and gas sector becomes necessary as a result of dwindling oil prices and pressure from shareholders, the challenge in recent times shows that companies both operators and service companies have concluded plans to cut costs (Finweek, 2014; Young, 2015). Considering the sector's complexity, a dedicated and all-encompassing cost reduction programme will save companies (Finweek, 2014). Petrobras planned its cost reduction measures well ahead of the 2014 crude oil price fall for a term of four years spanning from 2013-2016 (Forrest, 2015). The company focused on Well Cost Reduction Programme and used 23 different cost-cutting techniques. As at December 2014, the company

had saved \$1 billion (Forrest, 2015). However, the National Oil Company of Liberia (NOCAL) approved a Sustainability Action Plan (SAP) to mitigate the challenge in the oil and gas sector. The plan includes cost control and cost reduction measures, such as staff cut, retirement of senior staff and reconstitution of the NOCAL Board (AllAfrica.com, 2015).

Costs Cutting Methods and Stakeholders Engagement

Stakeholders are referred to any individual or group who can impact or be influenced either positively or adversely through the actions of a company (Abuzeinab and Arif, 2014; Martin, 2006). Stakeholders' management is a critical issue in the Oil and Gas sector because of the increasing interest among parties. These parties include; the government, contractors, employees, regulatory agencies and communities (Martin, 2006). Implementation of costs cutting measures could affect both internal and business stakeholders. The Success of the technique depends on the extent that stakeholders are engaged because they contribute to the realisation of a corporation's objectives (Asel, Posch and Speckbacher, 2011). For instance, a survey conducted revealed that success in the implementation of costs cutting measures in German companies was due to practical engagements with the stakeholders (Himme, 2012). Therefore, the success of management's strategy of costs reduction hinge on the involvement of the stakeholders (Manetti, 2011).

The first step in the process of cost reduction in the oil and gas sector is adequate communication between the management and stakeholders (Leinwand and Mainardi, 2013; KPMG, 2010, 2011). Asel, Posch and Speckbacher, (2011) argued that the process of cost reduction in the petroleum industry should involve the stakeholders such as shareholders and the government. Scholars comment that by involving the stakeholders, (that is, shareholders, government, suppliers, etc) the company reduces the tensions that may arise in the event of loss of jobs, profit and tax income (Dang, Offurum and Morgan, 2015). Similarly, Fayard, et al. (2014) were critical about involving the supply chain management for a holistic cost reduction exercise. Communicating the cost reduction idea to the stakeholders is not a one-off event but needs a systematic engagement process. Above all, a successful cost reduction programme in an upstream petroleum sector requires a well-informed process to the stakeholders, which include the employees, shareholders, government, suppliers of materials and services, etc.

Another aspect of concern for a successful cost reduction in upstream petroleum business is the knowledge of costs to be reduced and how to reduce it. Schley (as cited in Himme, 2012) maintains that the first thing to be done is to review all cost drivers and operations before deciding what to do. The argument about what costs to be cut are proposed by Dang, Offurum and Morgan (2015). The researchers are with the view that during financial crises, spending cut, for example, capital expenditure be considered first by drilling less and slow down projects. They maintained that operating expenses and general and administrative expenses should be the next priority. However, this is contrary to the order proposed by Lunsford (2001). The study suggested that administrative costs are usually high so should be the first to cut. Nevertheless, most cost reduction exercise focus on capital investment and salary spending (Young, 2015). However, it was criticized that suspending investment arbitrarily and retrenching staff without adequate analysis could result in loss of profits and highly skilled staff (Appelbaum et al., 1999). Correcting the wrongs was assessed to be more expensive (KPMG, 2013).

Theoretical Framework

Stakeholders Theory

Stakeholder theory is the most popular theory used by researchers in the oil and gas industry. The Theory is a paradigm shift from the shareholder only company to company with interest in all social groups relating with the company. Stakeholders can be defined as any group or individual who can affect or are affected by the achievement of the organization's objectives (Freeman 1984). According to this definition stakeholder have the potential to both benefit and harm organizations (Gibson 2000). Presently, there is a process of giving more pressing power to social groups who can have a certain claim on the firm. Externalities, moral hazards and monopoly power abuse have been significant economic factors in those changes and encouraged society to take more control over private sector.

According to Zollinger (2009), engaging stakeholders in management and governance of an organization is the core of how power and authority and understood and disseminated in the organization. According to Andriof and Waddock (2017), stakeholder engagement can be defined as a trust-based collaboration between individuals and/or social institutions with different objectives that can only be achieved together. Advancing sustainable development is one such goal that needs the trust-based collaborative effort of both the organizations and their stakeholders to ensure its success. Moreover, while pursuing sustainable development objectives, organizations realize that they cannot act alone to develop a sustainability report (Isenmann and Kim, 2006), as organizations require the cooperation of their stakeholders to identify social and environmental issues perceived by stakeholders.

Study of stakeholder engagement theory identified different levels of engagement (Katsoulakos and Katsoulakos, 2007). 'Informative approaches' to stakeholder engagement include identifying and mapping the roles of key stakeholders to inform about the project. The next level is the 'instrumental approach' which is about understanding local concerns to foster social acceptance.

This involves increasing transparency, tailor make information to different stakeholder groups and integration of roles and interests of stakeholders into the project and process. Success arises from the next level of stakeholder engagement, the 'democratic approach'; true participation involves feedback loops from the interaction in the process. The first feedback loop is the integration of stakeholders' concerns, priorities, satisfaction, and suggestions into the process. This could involve consulting experts and instigating extra research to the impacts of project activities. The second is improving communication and transparency because of interaction. The third and final feedback loop is the willingness to make adaptations to the project implementation, in other words, the design.

In the context of oil and gas sector, the stakeholder theory enables the study to establish a team of experts in the process, who are key stakeholders in the industry. The theory is also an anchor in carrying out analysis on oil service firms aligning it to cost reduction techniques used by oil and gas operators. Finally, the theory enlightens the study on effective stakeholder engagement (Himme, 2012).

Legitimacy Theory

According to Guthrie and Parker, (1989) Legitimacy theory states that a social contract or agreement exists between an enterprise and its constituents, due to which “business agrees to perform various socially desired actions in return for approval of its objectives, other rewards and ultimate survival”(Guthrie and Parker, 1989). Under this perspective, organizations would employ a number of legitimating strategies, to extend, maintain or defend their legitimacy (Tilling, 2004).

Where deference exists between the values of the corporation, and the values of the community in which that corporation operates, corporate legitimacy is threatened (Lindblom, as cited in Mousa and Hassan 2015). This disparity between the entity's values and those of society is referred to as the 'legitimacy gap' and may affect the corporation's ability to continue its operations (Dowling and Pfeffer, 1975). To close the legitimacy gap, the entity must identify those activities that are within its control, and identify the relevant publics that have the power to provide the entity with legitimacy (Mousa and Hassan, 2015).

The petroleum industry attracts a wide range of stakeholders due to the effect of the industry's operation on the environment. Many legislation exist in the oil and gas upstream sector hence creating a legitimate contracts with governments, community, non-governmental agencies, suppliers, etc. This study will be anchored upon this theory to establish the relationship between cost reduction techniques and business stakeholders.

Methodology

In order to achieve the objective of the study, the researcher adopted a quantitative design. The design is used to reveal the relationship between variables cost reduction (independent variable) and business stakeholders (dependent variable). For the purpose of this study, a questionnaire was developed and administered to some selected service companies in Nigeria (Appendix I). A total of 70 questionnaires were sent by mail to the responded and 60 responded representing 86% response rate. The relationship between cost reduction measures and business stakeholders was tested using Chi-Square analysis of Statistical Package for the Social Sciences (SPSS) Version 20. *P*-value of less than 0.05 shows an evidence of relationship and a *p*-value of greater than 0.05 indicates that there is no effect on the null hypotheses.

Table 1: Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4.478 ^a	8	0.812
Likelihood Ratio	4.776	8	.781
Linear-by-Linear Association	.003	1	.958
N of Valid Cases	60		

a. 11 cells (73.3%) have expected count less than 5. The minimum expected count is .07.

Data Analysis

SPSS V20

From table 1, cost reduction measures used by upstream petroleum companies do not have any significant effect on the business stakeholders. The data analysed show that there is no statistical evidence of a relationship between cost reduction measure used by the upstream oil and gas companies operating in Nigeria and their business stakeholders ($X^2(8)=4.478$, $p=0.812$; Figure 4.6). The p -value is greater than 0.05. Therefore, the null hypothesis is accepted.

Table 2: Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	15.094^a	12	0.236
Likelihood Ratio	17.071	12	0.147
Linear-by-Linear Association	1.490	1	0.222
N of Valid Cases	60		

a. 13 cells (65.0%) have expected count less than 5. The minimum expected count is .22.

SPSS V20

Table 2, shows the result of the hypothesis, cost reduction measures used by operators in the Nigerian upstream oil and gas sector have no significant effect on service providers. From the table below, the p -value is greater than 0.05. Therefore, the null hypothesis is retained ($X^2(12)=15.094$, $p=0.236$).

Results and Discussion

Cost Reduction Techniques and Business Stakeholders

The hypotheses that Cost Reduction measures used in the upstream oil and gas sector has no impact on the business stakeholders. The results of the chi-square test show that the p -value was greater than .05 ($p=0.236$) implying that the variables have no relationship hence are independent. This result is contrary to the position argued by academics that cost reduction measures affects stakeholders especially when they are applied during financial crises (Appelbaum et.al, 1999; Asel, Posch and Speckbacher, 2011; Lunsford, 2001).

In previous academic literature, scholars in this field did not combine the cause and effect of the variables under study. However, a critical review was undertaken to synthesize their findings to the current study. For example, Lunsford (2001) found that cost reduction measures employed during crude oil crises had an effect on employees in the upstream oil and gas sector. Nevertheless, this study considered the interest of oil service firms instead of the interest of employees. In another study conducted by Fayard et.al, (2014), the researchers were specific on the supply chain of the petroleum industry but their findings shows that stakeholders in the petroleum industry were not involved and then recommended a holistic cost reduction exercise where all stakeholder should be involved in order to reduce the effect of the oil companies decision in the supply chain.

Effect of Cost Reduction Measures on Oil Services Companies

The result obtained from the Chi-Square test on the third hypothesis revealed that there was no relationship between the cost reduction measures used by the operators on the oil services

companies. Therefore, the null hypothesis was not rejected because the outcome of the test shows that the p -value obtained from the test was greater than 0.05 ($\chi^2(12)=15.094, p=0.236$) as shown in Table II. The result of this hypothesis was contrary to the claim of experts that contributed to the field of knowledge. For instance, Himme, (2012) discovered that oil services companies bear the aftermath of the fall in crude oil prices due to the reduction in capital investments such as reduced drilling costs, shutting down of unproductive assets and renegotiation of contracts. The expert took a review of past experiences in the oil and gas sector and concluded that the burden of cost reduction techniques remained with the oil services companies. However, the outcome of the descriptive statistics and the Chi-square tests contradicted earlier studies as they both show that oil services companies were less affected by the measures taken by the operators.

In a separate study undertaken by McAllister (2015) the outcome depicts that oil services companies had to engage in cost reduction due to the unfavourable measures taken by the operators. This stand was in line with what some respondents answered with respect to the reasons for cost reduction strategies. Nevertheless, most of the responses received for the study were elicited from oil services companies, and their overall views show that the companies were not affected by the measures taken by the operators.

Conclusion

The concept of cost reduction and business stakeholders were examined. An analysis was undertaken in order to establish whether a relationship of cause and effect exists between the cost reduction measures used by oil companies in the upstream sector and business stakeholders. A Chi-Square test carried out revealed that there was no evidence of a relationship between the two variables. Hence, the null hypothesis was accepted.

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