# Strategic Framework for Adopting Innovation Capability and Creativity in the Nigerian Oil and Gas Sector

Prof. Nathaniel C. Ozigbo[1], Blessing Nwaiwu[2]
[1&2](Department of Business Administration, University of Abuja, Gwagwalada, Abuja – Nigeria)

***Abstract:*** *This study emphasizes that the key challenge for harnessing oil and gas resources are making the right strategic choices and synchronizing their implementation in a context that supports fiscal prudence and minimizes macroeconomic distortions. The study noted that Nigeria has not capitalize on its vast oil and gas resources because it has not developed adequate policy framework and strategic plans to do so, showing that the vast resources have not been harnessed and managed well to make any difference to the economy and well-being of Nigerians. The study argued that the reform agenda of past administration's effort to rapidly regenerate the nation's oil and gas sector economy to position Nigeria as one of the world's twenty biggest economies by the year 2020 has not made any significant improvement. The study recommended among others that to enhance the innovation capability, it is necessary to drive interaction among educational, research institutions and industrial firms with appropriate policies, and that government should face the challenges of infrastructural constraints as a matter of urgency.*
***Keywords:*** *Innovation, Capability, Creativity, Oil & Gas Sector, Nigeria*

## 1. Introduction

Nigeria is well endowed with minerals, including fossil fuels and gas resources. New discoveries of oil and gas resources in the country continue to emerge and present unique economic opportunities. The exploration and exploitation of these resources are yet to benefit the population, taken into consideration that Nigeria has been exploiting oil resources, for more than fifty years. Yet its human and physical capital development have been observed to be very poor than it would have been if the oil revenues had flown into public funds. Issues of concern include poor public expenditure prioritization and lack of transparency in the use of revenues. While there is ample evidence of countries that have benefitted their populations (Botswana, Namibia and South Africa), Nigeria has yet to see success stories in the case of oil and gas. It is critical for Nigeria to learn from the failure of the past in designing strategies that fully maximizes the benefits of the oil and gas discoveries.

This study examines a strategic framework for a coherent future vision that might assist the Nigerian government and the oil and gas industry operators in their decision making and also to accelerate economic growth in the nation. The study explains the relationship between managers and other employees and how innovation capabilities and creativity were perceived in the industry. Today's organizations face numerous challenges the requirement to innovate puts pressure on organizations to look for new ways for being creative and innovative. Thus, what motivates and enables innovation in organizations have become an important question that every organization is seeking to answer to survive in today's business world. One of the most important sources that organizations are paying attention are innovation and organizational creativity that can create and support environment in which they can flourish.

Several scholars have pointed out the importance of innovation and creativity relationships in an organization. For example, MeLean (2005) explored the importance of relationship between innovation and creativity and indicated that they have not been extensively treated in the literature. Vincent *et al* (2004) looked at the role of organizational and environmental factors on innovation and pointed out that there are only a handful of studies that attempted to understand the role of innovation and creativity on strategic orientation of the organization. Valencia *et al* (2010) explored organizational culture model of Cameron and Quinn (1999).

It is important to note that the convergence of forces, threats and technology are creating a perfect environment for the emergence of the oil field. New innovative technologies have assisted companies to automatically monitor wells and fields and consequently take preventive measures to avoid production

downtime. The technology has laid for the oil field to become a reality. Innovation through creativity is an important factor in the success and competitive advantage of organizations (woodman *et al*, 1993) as well as for a strong economy (Drucker, 1985). Today, almost all organizations face a dynamic environment characterized by rapid technological change, shortening product life cycles and globalization. Organizations, especially technologically driven ones need to be more creative and innovative than before to survive, compete, grows and to lead (Jung *et al*, 2003).

It is in view of the importance of innovation and creativity and its resultant effect on business performance; that this study was conducted to provide a strategic framework for adopting innovation capability and creativity in the Nigerian Oil and Gas Sector. Even though, similar studies were conducted (Amatile, 1998; Oldham & Cummings, 1996; Tiemey *et al*, 1999) their work examines only psychological work environment perceptions that influence creative work in organizations and perceptions of support for innovation (Scott & Bruce, 1994) and psychological empowerment (Deci *et al*, 1989) as there is not enough research in the field of innovation and creativity in the Nigerian Oil and Sector which this study is designed to accomplished. Numerous studies in the management literature such as Berson and Sosik (2007); Dickson and Abby (1983); Burns and Stalker (1961), have outlined strategies, on how important leaders/management are to the innovative process of an organisation. In recent years, governments and organizations have stressed the importance of innovation and creativity in spite of the overwhelming acknowledgment of its importance some companies are skeptical of this trend.

### 1.1 Objectives of the Study

The main objective of this study is to examine the strategic framework for innovation capability and creativity in the operations of Nigerian Oil and Gas sector.

The specific objectives are to:

1. Identify the determinants of organizational culture in the Nigeria's oil and gas industry.
2. Examine the importance of innovation and creativity in the development of oil and gas industry in Nigeria.
3. Develop framework for strengthening the organizational culture, innovation and creativity activities in the industry.
4. Suggest an institutionally framework for effective operations in the oil and gas industry.

### 1.2 Statement of Hypotheses

In the course of this study, the following hypotheses were developed to guide the study.

***$Ho_1$**: Creativity of employees in the Nigerian Oil and Gas Industry does not positively influence industry's innovation.*

***$Ho_2$**: Individual creativity in the Oil and Gas Industry does not relate positively to organizational innovation.*

## 2. Review of Related Literature

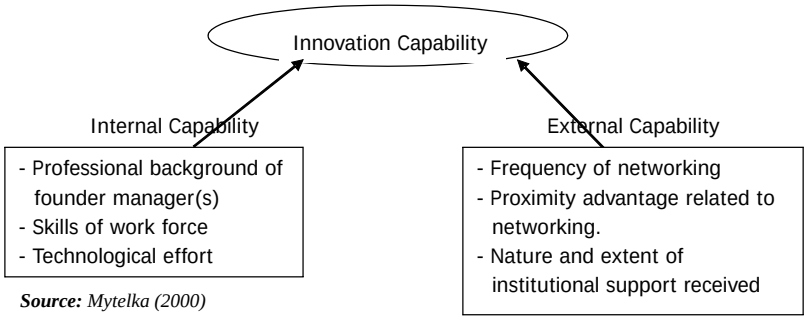
### 2.1 Conceptual Framework

Innovation is defined as the development and implementation of new ideas by people who over-time engage in transaction with others within an institutional order (Van de Ven, 1986). Brunswicker (2007) defined innovation as the successful implementation of creative ideas within an organization. Innovation involves various activities aimed at providing values to customers and a satisfactory return to the organizations (Ahmed 1998). Drucker (1954) sees innovation as one of two important business function. Business organizations views innovation as a means toward achieving and sustaining strategic competitive advantage (Marques & Ferreina,2009).

According to Burgelman etal (2004) innovation capability is defined as comprehensive set of characteristics of an organization that support and facilitate innovation strategies. The innovation

capability consists of abilities to create and carry new technological possibilities through to economic practice. Kim (1997) propounded that the term covers a range of activities from capability to invent to capability to innovate and to improve existing technology beyond the original design parameters. Egbetokun *et al* (2007) states that innovation capability is related to a variety of factors and that it is affected by different internal and external factors. They also noted that innovation capability is associated with the organizational potential to convert new ideas into commercial and community value. Innovation capability is highly essential for the growth and sustainable competitiveness of firms. The firm's role beside producing goods and services are to promote technological change and innovation. The notion of innovation capability applies to process technology, product technology as well as the way in which production is organized and managed. Its importance derives from the fact that it is presumed to contribute to dynamic competitive advantage of firms since it enhances their capacity to keep up with, respond to and initiates technological change on an ongoing basis. It is crucial in a competitive economic environment characterized by fast change.

A variety of factors internal and external to the firm contribute to innovation capability as shown in Figure 1:




***Source:*** *Mytelka (2000)*

***Figure 1:*** *Framework for innovation capability*

The oval at the top represents the innovation capabilities of firms. These capabilities accumulate as a result of various internal and external inputs. Potentially, importance sources that are generated inside firms include: The initial educational background and prior working experience of the founder(s) manager(s); the professional qualifications of the work-force; various kinds of technological efforts which induce further accumulation of technological capabilities, such as formal and informal R & D, formal and informal (on-the-job) training and acquisition of technological licenses. As far as internal factors are concerned, the entrepreneur(s) and work-force bring a certain stock of knowledge and skills into the firm, which they obtained through earlier experience. Overtime, the capability base of the firm is further enhanced through internal learning, involving investments in formal R & D, informal experimentation, debugging, making minor adaptations to products, process and organization in-house staff training. The foregoing suggests that a large number of potentially important internal and external factors contribute to a greater degree to the innovation capability of firms like the oil and gas industry of Nigeria. However, more detailed insights are clearly needed, especially for policy design and implementation. In particular, internal and external factors can be considered key sources of the Nigeria's oil and gas sector innovation capability, such as geographical proximity to other actors enhances the values of external interaction.

## 2.2 Challenges for Harnessing Opportunities in the Oil and Gas Sector

In spite of all the innovation and creativity in the oil and gas sector since its inception more than forty five years ago, there has not been any concerned and effectively control environmental mechanisms associated with the industry. Oil spill in Nigeria is a common occurrence. It has been estimated that between 9 million to 13 million barrels have been spilled since oil drilling started in 1958. The government estimated that about 7,000 spills occurred between 1970 and 2000, causes include corrosion of pipelines and tankers, account for about 50 percent of all spill, sabotage (28%) and oil production operators (21%) with 1% of the spill being accounted for by inadequate or non functional production equipment. A reason that corrosion accounts for such a high percent of all spills were that as a result of the small size of the oil fields in the Niger Delta, there exist an extensive network of pipelines between the fields. Oil spillage has a major impact on the ecosystem. Large tracts of the mangrove forests which are especially susceptible to oil have been destroyed. An estimated 5-10% of Nigeria mangrove ecosystems have been wiped out either by

settlement or oil. Spills take out crops and acqua-cultures through contamination of the ground water and soils. Drinking water also frequently contaminated and a sheen of oil is visible in many localized bodies of water. Offshore spills, which are usually much greater in scale contaminate coastal environment and causes a decline in local fishing production. Nigerian regulations are weak and rarely enforced allowing oil companies to self-regulate.

Despite the impressive profile of the Nigerian oil and gas sector's contribution to National GDP, there has been a direct consequence of the noticeable absence of indigenous participation in the industry, given that over 80% of the goods and services needed for projects were imported from foreign countries. For the greater part of the last four decades, the Nigeria oil and gas industry has been dominated by major international oil companies with large numbers of expatriate workers deployed to carry out projects on various on-shore and off-shore locations in the country. This preponderance of expatriate workers have resulted in paucity of jobs, skill development, capacity building and utilization for the indigenous work-force and in the long-run, a lack of sustained national economic development.

In recognition of the deficiency, the federal government of Nigeria in the past made efforts to domesticate a significant portion of economic derivatives from the oil and gas industry by encouraging the development and deliberate utilization of Nigerian human and material resources in the Nigerian oil and gas sector. Such effort led to the formulation of a number of local content friendly policies in the industry that is the enactment of the Nigerian content Act 2010. This content took precedence over all existing content laws and regulations and was enacted with the aim of providing for the development of indigenous content in the Nigerian oil and gas industry by ensuring that priorities are given to indigenous services companies. Local content means the quantum of composite value added to or created in the Nigerian economy through a deliberate utilization of Nigeria human and material resources and services in the up-stream and down-stream sectors of the petroleum, industry, which includes all activities connected with the exploration, development, processing, transportation and sales of crude oil and gas resources without compromising quality, health, safety and environmental standards.

## 2.3 Operations in the Oil and Gas Sector

There may be no other industry today that demands a more diverse set of human, political, mechanical and technological capabilities than the oil and gas exploration and production industries. Competition for national resources have driven companies to explore and produce in harsh, remote and even hostile locations, where even the simplest of logical tasks could be difficult and costly. Intelligent surveillance, utilizing sensors to monitor wells are keys to moving the industry forward. But to be effective, new processes, roles and responsibilities should be determined and personnel should be trained. Today, many field workers operate independently in remote oil and gas fields. Operationally, the study observed that centralizing monitoring of wells acquires over-sight and procedural changes may be difficult to institute. In addition, gathering and analyzing data quickly and effectively in a controlled laboratory environment could be difficult in an environment such as in the sub-Saharan Africa, typical in the Nigerian environment. This could be a monumental task, while new technology has shown the promise of great things to come, integrating the innovative technology with existing systems, new tools and a global network of diverse business partners could be arduous. Much of the potentially useful data captured today is not typically stored, nor is it distributed to the people who could use it the most. Complex production problems have adversely affected production system. In addition, turning the data into useful, relevant information that might help make business critical decisions have been one of the main challenges the industry faces today.

## 2.4 Psychological Empowerment:

In essence, psychological empowerment is another source of creativity (Deci etal 1989). People who are empowered are more likely to exhibit creative behaviour (Jung etal 2003), demonstrates that personal autonomy is a core characteristics of creative people. Mum Ford and Gustafson (1988) suggested that innovative achievement might increase when organizations support autonomy. Indeed, the individual is the ultimate source of any new idea and provides the foundational motivation (Shalley and Gilson 2004). The creative performance of employees provides the raw material needed for organization innovation. Creative employees are those who tend to identify opportunities for new products.

Today, most companies are increasingly investing in innovation because of its overall impact on performance and daily processes to employees' functions. Innovation typically requires persistent team-work focused on gradual improvement in delivery value to the company and in some cases final consumers (Tjosuld & Ziyou, 2007). To foster innovation and creativity in any organization, it is important to attract and recruit people who are innovative and organizations need to develop techniques and instruments to identify innovative people and employ them. Although, some people may be more innovative than others, it is the relationship between people and their environment that ultimately determine their level of innovativeness. If an innovative person is put in an environment that does not foster creativity, he/she might find it difficult, if not impossible to be innovative on an ongoing basis (Davila *et al*, 2006).

As stated in this study, Nigeria is endowed with vast quantities of both fossil and renewable energy resources. It is among the continent in the world with frequent and substantial new findings of oil and gas. Nigeria's rich oil fields and the prospects for more discoveries have transformed Nigeria into an important player and a key target in global oil production and resource extraction. In essence, the oil and gas resources are principal source of public revenues and national wealth for the government. As a major source of wealth, oil and gas resources have become critical for growth, development and good governance. They also pose major management challenges for the government. The issues go beyond technical management of oil and gas resources and collection of revenue. In other words, achieving sustained growth from the oil and gas resources entails managing and enhancing the status of a complex portfolio of nature, human and social capital.

## 2.5 Contributions of Oil and Gas Sector to the Nigerian Economy

Nigeria is arguably the most influential and most strategic country in Africa in view of its population, vast hydro carbon resources and the commitment of the government to democracy, anti-corruption and African unity. The economy is heavily dependent on its Oil and Gas Sector which accounts for almost 90 percent of export revenues and about 45 percent of the Gross Domestic Product. Despite its relative abundance of mineral resources, the expansion of Nigeria's Oil and Gas Sector has been stymied by its antiquated infrastructure and the frustrating slow movement of goods through Nigeria's major points. It is on record that the rapid economic development in Nigeria was largely to the deliberate policy of the government on technological capacity building through investment opportunities that exists in the oil and gas industry. It is also on record that innovation and creativity have remained part of the strategies adopted by the Nigerian government for tackling the questions of technological backwardness.

Looking back on the eve of the oil phenomenon, the Nigerian economy through agro-based was relatively diversified. There existed self-sufficiency in food production with enough to feed the population and extra for export. The country had a strong export sector and budding industrial base. There were functioning laws, institutions, social and economic infrastructures as well as limitless job opportunities. Above all, security of life and property was adequate and foreign investors had confidence in the economy. This was the situation on ground before Nigeria's first export of crude oil in February 1958. Since 1970s, the oil and gas industry has become the fundamental to the Nigerian economy, providing the bulk of revenue as well as the foreign exchange earnings for the country. The discovery of Oil and Gas opened up the industry, bring in foreign participations like the Mobil, AGIP and Texaco/Chevron respectively to join the exploration efforts both in the Onshore and off-shore areas of Nigeria.

## 3. Methodology

This study examines factors associated with the innovation capability and creativity in the operations of oil and gas industry in Nigeria. The methods of data collection adopted a survey research approach using face-to-face interviews and questionnaire administration. As part of the survey, questionnaires were administered to 650 staff of the Nigerian oil and gas industry located at Port Harcourt, Nigeria, of which 580 (89.2% response rate) responded. The researcher adopted this method to specifically ascertain the true views of all respondents. Observation by the researchers ultimately determined the reliability of the respondents answers. In order to minimize the overall threats to the validity of this study, the researcher conducted pilot test to ascertain the validity of the instrument used for the study. The researcher's selection process for the study was based on convenience sampling and as such was not randomly selected. All the

employees that were interviewed have been with the company for at least two years. However, the field-work included interviewing the managers/top management cadres. The aim of the interview was to understand the specific nature of the development work the industry was engaged. In the second interview, all the respondents were provided with items to measure employee's creativity and were asked to identify the ones most relevant to the employees' work. Finally, respondents were provided with the measures of organizational innovation such as number of patents and R & D intensity and were asked to recommend measures for their industry. Furthermore, data were collected by two separate questionnaires, one for the managers/top management and the next to the employees. The questionnaires included the industry and employee identification codes so that data collected could be matched and grouped for analysis. All respondents were guaranteed confidentiality. All the questionnaires were completed during regular working hours and the researcher was present to answer questions that might arise from the questionnaire.

### 3.1 Validity and Reliability of the Research Instruments

Exploratory factor analysis using the principal components method and varimax rotation was conducted on the fourty items in order to determine their factor loadings, all items less than 0.50 were removed. The resulting thirty-five items loaded on one factor, which accounted for fifty-seven percent of the variance. These items were averaged to form a scale. Reliability (Cronbach's Alpha) of the scale was 0.85. The variables of support for innovation was measured by twelve items on a five point scale ranging from 1 (strongly disagree) to 5 (strongly agree). The respondents indicated the extent to which the industry supported creativity. Based on the factor analysis result, three items with loading less than 0.50 were removed. The remaining nine items loaded on one factor that accounted for 48.3 percent of the variance. These items were averaged to form a scale with a reliability of 0.85.

## 4. Results and Discussions

The analysis of the results was conducted using mean, standard deviation, alpha coefficient and correlations analysis to test the formulated hypotheses in line with the objectives of the study.

### 4.1 Test of Hypotheses

***Ho$_1$**: Creativity of employees in the Nigerian Oil and Gas Industry does not positively influence industry's innovation.*

***Ho$_2$**: Individual creativity in the Oil and Gas Industry does not relate positively to organizational innovation.*

**Table 1:** Descriptive Statistic, Alpha Coefficient and Correlation

| | Variables | Mean | S.D | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Psychological empowerment | 4.92 | 0.64 | (0.85) | | | | | | |
| 2 | Support for innovation | 4.64 | 0.62 | 0.32** | (0.83) | | | | | |
| 3 | Job tenure | 4.73 | 0.57 | 0.37** | 0.42 | (0.81) | | | | |
| 4 | Creativity | 3.69 | 0.42 | 0.46** | 0.41** | 0.35** | (0.79) | | | |
| 5 | Education | 3.57 | 0.38 | 0.43* | 0.39 | 0.33 | 0.32** | (0.76) | | |
| 6 | Intrinsic motivation | 3.48 | 0.36 | 0.42** | 0.36 | 0.31** | 0.29** | 0.35 | (0.74) | |
| 7 | Leadership style | 3.75 | 0.37 | 0.40* | 0.34* | 0.30** | 0.28** | 0.32 | 0.30 | (0.72) |

***Note:** alpha coefficients are in parenthesis*

**P < 0.05*

***P < 0.01*

From the analysis, the inter-relations indicate that creativity of employees in the Nigerian oil and Gas sector significantly and positively correlate with industry's innovation ($r = 0.46$, $P<0.01$) psychological empowerment ($r = 0.85$, $P<0.05$). Intrinsic motivation ($r = 0.36$, $P<0.01$), while support for innovation ($r = 0.83$, $P<0.05$).

Hypotheses one and two relates to the direct effect of employee creativity on organizational innovation. These hypotheses were tested using Hierarchical Linear Modeling (HLM) because the data of this study

was tested within the industry and the model included cross level relationship of leadership style and employee creativity and innovativeness. According to Bryck and Raudenbush (1992) states that Hierarchical linear modeling accounts for dependence among the scores for individuals within the same group and accommodates variables at multiple levels. In addition, Table 2 presents the means, standard deviations and correlations among organizational level variables.

**Table 2:** Descriptive Statistics and Correlations Organizational Level Variables

| | **Variables** | **Mean** | **S.D** | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|---|---|---|
| 1 | Organizational innovation | 2,83 | 0.83 | 0.65* | 1 | | | |
| 2 | Creativity | 3.64 | 0.75 | 0.24* | 0.22* | 1 | | |
| 3 | Leadership style | 3.95 | 0.54 | 0.37* | 0.24* | 0.23* | 1 | |
| 4 | Firm age | 4.63 | 2.80 | 0.056* | 0.36* | 0.34* | 0.32* | 1 |

**P < 0.05*

From the analysis above, the organizational innovation has a significant correlation with leadership style (r=0.65, P, 0.05). At the same time, creativity has a significant correlation with the leadership style (r=0.24, P<0.05).

*Discussion*

This study has both theoretical and methodological contributions to the knowledge as it investigated the effects of innovation and creativity related outcomes at multiple levels within the oil and gas industry of Nigeria. The findings suggested that leadership style has important effects at both individual and organizational levels. At the individual level, leadership style positively relates to creativity. This finding is valuable for two reasons. First, previous findings were inconsistent and further research in real setting was needed to support the positive proposition in favour of this leadership style. A number of studies reported a stronger positive effect of leadership style on the creativity performance (Jung & Yammarino, 2001). The mediating effect of psychological empowerment on the other hand was significant. This finding is an important contribution to the literature, in that it shows psychological empowerment as a critical psychological mechanism through which leadership style influences employee creativity.

At the organizational level of analysis in line with the findings of Jung *et al* (2001), this study showed that leadership style has a significant positive association with organizational innovation. Organizational innovation in this study include; the success of innovations as well as the tendency to innovate. The finding suggested that leadership style might not only promote innovative activity within the organization but also ensure the market success of the innovations.

This study is not without its limitations. Employees creativity was evaluated only by their managers/top management and this might have led to artificially inflated ratings. Another limitation is the cross sectional design employed, which made it difficult to infer causality between the variables. The significant relationships reported in this study were associative and correlational and may not be causal. Thus, longitudinal studies in real work settings can better analyze the significant relationships found here. In addition, the sample of this study might be another limitation. The findings were not generalized to other organizations in different industries and/or countries. Finally, this study did not include group characteristics or processes such as group composition, cohesiveness and communication while investigating innovation relationships which might have prevented capturing the complexity of this relationship.

## 5. Conclusion and Recommendations

### 5.1 Conclusion

This study contributed to the better understanding of the issues discussed in the study. We examined in the study some internal and external factors contributing to the accumulation of firm level innovation capabilities. The study noted the need for strong innovation system in the Nigerian oil and gas sector. The

results showed that oil and gas sector in Nigeria demonstrated low levels of innovation capabilities although some products and processes with traces of diffusion-based innovation were found. The study revealed that the sector operate within a weak sectoral innovation system.

The study noted that the sector operating with in such contexts are not necessarily innovation inactive. They might not be able to engage in implementing product and process changes that require much knowledge and financial investment. Given the generally deficient state of the innovation influencers, it is not surprising that the sector was not capable to implement changes in organization and processes than what they would do with their products. In addition, the study found that most of the indigenous firms were largely unable to muster enough resources on their own to engage in activities that would give rise to that kind of innovation required in the Oil and Gas Sector. Thus, the study concluded that stronger government-finance-research industry linkages that would resource deficiencies are critical to firm level innovativeness and creativity for the sector.

## 5.2 Recommendations

As stated in this study, innovation through creativity is an important factor in the success and competitive advantage of organizations. Today, almost all organizations face a dynamic environment characterized by rapid technological change, shortening product life cycle and globalization. Organizations, especially technologically driven ones need to be more creative and innovative than before to survive, to compete, grow and to lead. Based on the above findings, the following recommendations were made:

1. An enabling political and economic environment characterized by strong and dynamic institutions with stable policy should be created by government to encourage development of innovative thinking and creativity which will result in nation building.
2. Nigerian Oil and Gas companies should evolve ways on how to attract key actors, particularly suppliers, closer to the firms through government interventions because the firms might not have what it takes to attract these actors.
3. Drive interactions among educational and research institutions and industrial firms with appropriate policies.
4. Oil and Gas companies should try and be improving on the productive capacities of employees through adequate training and development for effective productivity.
5. There should be effective management of Oil and Gas resources to ensure it sustainability and promotion of high standards of environmental protection arising from pollution through socially responsible actions.
6. Promote good governance, accountability and transparency in oil and gas revenue management.

## 5.3 Suggestions for further Studies

This study focuses on the mediating processes underlying future relationship between the leadership style and organizational innovation. In addition, further studies should investigate whether psychological empowerment has a significant mediator effect on leadership style that is employee creativity relationship in different countries or industries. Future research should examine whether the mediating and moderating influences of group processes such as cohesiveness, diversity and conflict are the determinants of organizational innovation rather than employee creativity.

## References

Ahmed, P.K. 1998 “Culture and Climate for Innovation”, *European Journal of Innovation Management* 1(1): 30-43.

Amafile, T.M. 1998 How to kill creativity, *Harvard Business Review* 76(5): 77-87.

Berson, Y., and Sosik, J.J. 2007 The Relationship Between Self Other Rating Agreement and Influence Tactics and Organizational Processes, *Group Organization Management,* 32:675-698.

Burns, T. and Stalker, E.M. 1961 The Management of Innovation, Tavistoch.

Bryeh, A.S. and Raudenbush, S.W 1992 *Hierarchical Linear Models: Application and Data Analysis Method,* London, Saga.

Burgelman, R.A., Maidique, M.A. and Wheelwright, S.C. 2004 *Strategic Management of Technology and Innovation* McGraw-Hill, New York.

Brunswicker, S. 2007 "Managing Innovation Capability in SMEs". *Techonator, Special Feature: Innovation and Knowledge Management*, May-June, 17-27.

Cameron, K.S. and Quiun, R.E. 1999 *Diagnosing and Changing Organizational Culture Based on the Competng Values Framework* Addison-Wesley, Reading, M.A.

Davila, T. Epstein, M.J. and Shelton R. 2006 *Making Innovation Work: How to manage it, measures it, and profit from it*, Pennsylvania, Wharton School Publishing; 262-263.

Drucker, P.F. 1954 *The Practice of Management,* New York: Harper and Row Publishers.

Drucker, P.F 1985 *Innovation and Entrepreneurship: Practice and Principles,* New York; Harper and Row Publishers.

Dickson, J.W, and Abbey, M. 1983 "Research and Development Work Climate and Innovation in Semi-conductors", *Academy of Management Journal* 26(2): 46-63.

Deci, E.L; Connell, J.P. and Ryan, R.M. 1989 "Self-Determination in a Work Organization, *Journal of Applied Psychology* 74(4): 580-90.

Egbetoku, A.A, Siyanbola, W.O. and Adeniyi, A.A. 2007 *Assessment of Innovation Capability in the Cable and Wire Manufacturing Industry in Nigeria: A Case Study Approach*. http/www.merit.UNU.edu/ME.E/papers/

Jung, D.I and Yamarino, F.J. 2001 Perceptions of Transformational Leadership among Asian-American and Caucasian Americans: A level of analysis perspective, *The Journal of Leadership Studies,* 8(1):3-21.

Jung, D.I., Chow, C. and Wu, A. 2003 The Role of Transformation Leadership in Enhancing Organizational Innovation: Hypotheses and Some Preliminary Findings, *Leadership Quartely* 14:525-44.

Mumford, M.D. and Gustafson, S.B 1988 Creativity Syndrome: Integration, Application and Innovation *Psychological Bulletin* 103 (1): 27-43.

McLean, L.D. 2005 "Organizational Culture Influence on Creativity and Innovation: A Review of the Literature and Implication for Human Resource Development", *Advances in Developing Human Resources*, 7(2): 226-246.

Marques, C.S and Ferreira, J. 2009 SME Innovation Capacity, Competitive Advantage and Performance in a Traditional Region of Portugal, *Journal of Technology Management and Innovation* 4(4): 35-53.

Mytelka, L. 2000 *Local Systems of Innovation in a Globalized World Economy Industry and Innovation* 7(1): 33-54.

Oldham, G.R and Cumings, A. 1996 Employee Creativity: Personal and Contextual Factors at Work, *Academy of Management Journal* 39 (3): 607-34.

Kim, L. 1997 *Limitation to Innovation the Dynamics of Korea's Technological Learning,* Harvard Business School Press, Boston.

Scott, S.G. and Bruce, R.A. 1994 Determinants of innovation behaviour: A path model of indvivdual innovation in the workplace, *Academy of Management Journal*, 37 (3): 580-607.

Shan, W. and Zhang, Q. 2009 "*Extension theory and its application in evaluation of independent innovation capability*, Kybernetes 38 (3/4): 457-467.

Shalley, C.E and Gilson, L.C 2004 What leaders need to know: A review of social and contextual factors that can foster or hinder creativity, *leadership Quarterly* 15(1): 33-53.

Tjosvold, D. and Ziyou, Y. 2007 Group Risk Taking: Taking Constructive Rold of Controversy in China, *Group Organization Management* 32:653-674.

Tiemey, P., Farmer, S.M. and Graen, G.R. 1999 An Examination of Leadership and Employee Creativity. The Relevance of Traits and Relationships, Personal Psychology, 52:591-620.

Valencia, J.C.N, Valle, R.S and Jimeman, D.J. 2010 "Organizational Culture as Determinant of Product Innovation", *European Journal of Innovation Management* 10/13 (4): 466-480.

Vincent, L.M, Bharadwaji, S.W. and Challagella, G.N. 2004, "*Does innovation medicate firm performance", it meta-Analysis of determinants and consequences of organizational innovation*".
htt/smartech-gatch.edu/handle1853/10731

Van De Ven, A.H. 1986 "Central Problems in the Management of Innovation", *Management Sciences* 32 (5): 590-607.