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Strategies for Improving Local Content Development in Nigeria Oil and Gas Industry

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Abstract

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Doctoral Study Submitted in Partial Fulfilment

of the Requirements for the Degree of

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Abstract

Local content development is fast becoming a strategic management issue for multinational extractive companies in Africa with significant efficiency and profitability implications. As local content statutory regulators aim to increase the average local content value in the Nigeria oil and gas industry from 26% in 2017 to 70% in 2027, supply chain managers need effective strategies for increasing local content in their processes and products. Grounded in the local content development framework and mediated impact model of supplier development, the purpose of this qualitative multiple case study was to explore strategies supply chain managers in the multinational oil and gas companies in Nigeria use to increase local content in their processes and products. The participants comprised eight supply chain managers and business leaders in multinational oil and gas companies and the Nigerian Content Development and Monitoring Board involved in local content development activities. Data were collected from semistructured interviews and secondary documents such as annual plans and performance reports. Thematic analysis was used to analyze the data. Three themes emerged: business value drivers for local content development, overarching local content development strategies, and monitoring and measurement of local content development. A key recommendation is for supply chain managers to document clear and concise business value drivers for selecting and implementing local content development strategies. The implications for positive social change include the possibility for increased job creation that could result in a significant reduction in the unemployment rate and concomitant youth restiveness in the Nigeria Niger Delta region.

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Dedication

      To God be all the glory for the grace and strength that He gave me to continue and finish this work even when I could have given up. I dedicate this doctoral study to my family and friends who by their silent and overt supports through prayers, words of encouragements, and even tolerance made it possible for me to complete this work.

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Section 1: Foundation of the Study

Local content policies, which are generally protectionist and discriminatory, have had mixed results in various economies around the world: being effective in growing fledging industries in developing economies, but in some cases serving the interest of few or creating a distortion in an economy where wrong sectors or outputs are protected (Acheampong et al., 2016). In his pioneering work on local content development, Grossman (1981) found that resource allocation, in terms of market structure and local intermediate goods industry, was influenced by need for local content preference and protection and was viewed as germane and helpful to developing countries. Most of the developed countries once used various protectionist approaches to shield and nurture their young industries and stimulate growth (Nwapi, 2016; Ovadia, 2014).

Defined by the World Trade Organization as a requirement for investors to procure certain volume of local materials and services for inputs into products, local content development expresses the extent to which local companies participate in extractive industries, which are often destinations of foreign direct investments and important revenue streams for governments in developing economies (Owusu & Vaaland, 2016a). In this study, I examined the strategies by which supply chain managers in the Nigeria oil and gas industry are increasing the level of local content development in their organizations with objective of complying with the law and increasing profitability.

Background of the Problem

Local content policies and laws have become key priorities of host governments and industrial players in oil and gas producing countries (Acheampong et al., 2016).

According to Hansen (2020) and Ovadia (2016), there has been proliferation of local

content policies in Africa as natural resource rich countries craft legal frameworks to

regulate resource extraction. In this vein, the president of the Federal Republic of Nigeria

on April 2, 2010, signed into law the Nigerian Oil and Gas Industry Content

Development Bill (NOGICDA) wherein the local content development rules, regulations,

and minimum targets for various inputs into oil and gas businesses in Nigeria, and

penalties for violations are defined.

Local content development relates to supplier development, which is a strategic

supply chain management activity that organizations have exploited for sustainable

competitive advantage. Local content development may also be viewed from the

perspective of strategic corporate social responsibility (CSR) investments, which not only

accrues social capital to the buying organization but can in the long run contribute to

comparatively lower input costs and enhanced security of supply for materials and

services supplied by local companies whose capabilities were developed. I examined

local content development from the buying firms' strategic perspective and explored how

supply chain managers are addressing the NOGICDA requirements both in terms of

compliance and as strategic business imperative. I present the problem study frame in the

next section.

Problem Statement

Local content development is rapidly becoming a strategic management issue for

multinational extractive companies in Africa with significant implications for efficiency

and profitability (Hansen, 2020). In Nigeria, local content statutory regulators have a

target to raise average local content value in the oil and gas industry from 26% as of 2017 to 70% by 2027, and this requires innovative, competitive, and sustainable strategies (Wabote, 2017b). The general business problem is that some business leaders neglect to pursue local content development as a strategic supply chain management activity to gain a competitive advantage and increase profitability. The specific business problem is that some supply chain managers lack strategies to increase local content of their companies' processes and products.

Purpose Statement

The purpose of this qualitative multiple case study was to explore strategies that supply chain managers in the Nigerian oil and gas industry use to increase local content of their processes and products and equip managers and business leaders with actionable strategies to help them achieve sustainable competitive advantage through local content development. The targeted population comprised 18 supply chain managers in six multinational oil and gas companies operating in the Niger Delta region of Nigeria, and three managers in the Nigerian Content Development and Monitoring Board (NCDMB) who have successfully implemented strategies that increased local content of their processes and products. However, the actual participants were seven supply chain managers in four multinational oil and gas companies and one manager in the NCDMB. The implication for social change is an impetus for leaders in oil and gas companies to take purposeful actions towards achieving the objectives of the Nigerian local sourcing policy, which may create more employment in Nigeria and improve the quality of living in the region.

Nature of the Study

From the three methodologies for conducting research—quantitative, qualitative, and mixed methods (Opoku et al., 2016), I selected a qualitative approach for this study. The use of qualitative methodology enables the researcher to collect data from participants in their natural settings using open-ended questions, interviews, observations, and field notes in order to address the research question (Eyisi, 2016; Fassinger & Morrow, 2013). The qualitative research method is useful in defining what to study when there is no existing theory and variables are unknown (Eyisi, 2016). I considered the qualitative research methodology most appropriate for this study because of the need to collect contextual information from supply chain managers in the Nigerian oil and gas industry and because the variables of the research question are mostly unknown and difficult to measure. Quantitative research methods, on the other hand, rely on numeric or statistical data for the logical investigation of social phenomenon and on the assumption that the phenomenon under study is measurable (Watson, 2015). The phenomenon I explored through the research question in this study is not easily measurable. Hence, the quantitative research method would not have been suitable. The mixed method research approach combines both qualitative and quantitative methodologies (Reilly & Jones, 2017) and is most appropriate for research questions that can neither be fully answered by quantitative nor qualitative approaches alone (Chiang-Hanisko et al., 2016). The mixed method approach was not necessary given that addressing the research question neither requires examining variables' relationships or differences through statistical analysis, nor was it of such complexity that the use of qualitative approach alone was inadequate.

I used a multiple case study design for this study because its use offered the most flexibility with regards to data collection from diverse sources compared to other qualitative designs. The use of case study design enables the researcher to explore the subject matter from diverse perspectives such as participants' responses to interview questions, observations, and materials, as found in the field (Cope, 2015; Hyett et al., 2014; Yin, 2014). The multiple case study enables the researcher to examine conditions for similar findings in different settings or contrasting cases (Cope, 2015). Phenomenologists seek to describe the meanings of lived experiences of the participants and require close connection with the participants, including their languages, to develop an account that identifies and explains the participants' experiences (Thompson, 2018; Gill, 2014). The phenomenological design was not suitable because the research question does not require understanding the meanings of the participants' lived experiences. Ethnographic design is an inductive research process where the researcher carries out an in-depth study of groups, neighborhoods, or businesses through long-term involvement in the field, and where the researcher's personal involvement is needed for a greater understanding of the complexities (Cunliffe & Karunanayake, 2013). The ethnographic researcher aims to understand the cultural and social meanings of a phenomenon in order to gain deeper insights about the lived experiences of individuals within a specific group and to describe and interpret their language, beliefs, and values (Kassan et al., 2018). The research problem for this study did not require an in-depth study of any entity for a long period, hence an ethnographic design was not suitable. The narrative research design is useful when a study entails collecting data from individuals through story telling of their

lived experiences (Butina et al., 2015). The focus of this study was not to tell the story; hence, narrative design was not suitable. I therefore addressed the problem by obtaining and exploring the participants' stories through a multiple case study.

<div align="center">**Research Question**</div>

The research question for this study was: What strategies do supply chain managers in the Nigerian oil and gas industry use to increase local content in their companies' processes and products?

<div align="center">**Interview Questions**</div>

The interview questions I used to gather data from participants are listed below:

1. What overarching strategies are in place for increasing local content in your company's processes and products?

2. How does your organization measure and monitor the effectiveness of local content development strategies?

3. What local content development strategies have been most effective? Explain why, based upon your experience, they have been effective.

4. How is local supplier development linked to local content development strategies in your company?

5. What strategies has your company used to influence original equipment manufacturers to establish facilities in Nigeria?

6. How are corporate social responsibility programs in your company linked to strategies for increasing local content?

7. How does the implementation of local content development strategies contribute to competitive advantage for your organization?

8. What other information might be relevant in explaining the strategies that supply chain managers in the Nigerian oil and gas industry use to increase local content in their companies' processes and products?

Conceptual Framework

The concepts of local content development and supplier development anchored this study. Local content has been defined as proportion, quantum, or percentage of inputs into a production system that are sourced from the domestic economy (De Vita et al., 2016). Kazzazi and Nouri (2012) developed a conceptual framework to explain the main factors that drive local content development, which comprise local policies, existing local infrastructure, available local capabilities, and environmental factors. The local content development conceptual framework provides a potentially useful lens for exploring strategies for improving local contents in the Nigerian oil and gas industry. The NOGICDA, signed into law in April 2010, embodies the Nigerian public policies that drive local content development in Nigeria (De Vita et al., 2016; Ovadia, 2016), and will be a key reference in this study.

A key emphasis of the NOGICDA is local supplier development, which entails improving the competencies and capabilities of Nigerian suppliers, and positioning them to develop goods and services that are otherwise sourced from abroad. Krause et al. (2000) developed a mediated impact model of supplier development, which explains the relationship between supplier development approaches and supplier performance

improvement. Krause et al. showed that when a buying firm combines supplier assessment, supplier incentivization, and direct involvement in supplier development (e.g., training of supplier's personnel and assigning of buying firm's personnel to supplier's facility), a significant improvement in supplier performance can result. The mediated impact model of supplier development is potentially relevant for exploring the research question, which relates to improving capabilities, competencies, and performances of local suppliers.

Operational Definitions

The following terms, which I use in the study, will have meanings as defined below:

Corporate social responsibility: Corporate social responsibility (CSR) is the firm's behaviors that transcend economic interest, which are aimed to positively affect social and nonsocial stakeholders (Ağan, et al., 2016).

Local content development: The quantum of local value added through deliberate use of materials, labor, financing, goods, and services that are sourced from within a host country (Andrews & Nwapi, 2018; Hansen et al, 2015; Ovadia, 2013a).

Nigerian content: Nigerian content is defined in the NOGICDA as significant combination of value added or created in the Nigerian economy through systematic growth of local capacity and deliberate use of locally sourced human resources and materials within acceptable quality as inputs into the extractive industry (Monday, 2015, Nwapi, 2015a).

Supplier development: Supplier development is any activity that the buying firm undertakes in order to improve the performance and capabilities of the supplier, with ultimate objective of securing the buyer's supply needs (Busse et al., 2016).

Capability building: Capability building is the improvement of a firms organizational, managerial, and technological ability necessary for delivery of higher quality products or services at lower costs (Ngo, 2017).

Assumptions, Limitations, and Delimitations

In this subsection, I present the assumptions, limitations, and delimitations of the study. These provide contextual information about the study scope, methodology, design, data collection, interpretations, and conclusions, which shape the originality of the study (Marshall & Rossman, 2016). The assumptions, limitations, and delimitations may also help the reader to have a balanced understanding and more correctly interpret the conclusions thereof of the study (Bennell et al., 2012).

Assumptions

Assumptions are givens or unverified facts that a researcher accepts as correct, albeit without questioning or substantial proof (Marshall & Rossman, 2016; Nkwake & Morrow, 2016; Wortham, 2015; Pyrczak, 2017). I assume that the literature review sufficiently supports the research objectives and affords me good insights of participants' various perspectives of the local content development concept. I also assume that the respondents provided honest and candid answers to the interview questions, and that the answers represent the actual opinion and practice in the organizations that they represent.

Limitations

Limitations are aspects of the study over which the researcher has no control that may pose a threat to internal validity of the study (Denscombe, 2013; Pyrczak, 2017). By documenting limitations of a study, the author can demonstrate genuine consideration of possible areas of bias or exclusion that may affect the results being reported (Greener, 2018). According to Greener, identifying limitations and explaining their impacts on the study results helps the author demonstrate rigor and highlight areas for future research. My previous employment as a supply chain professional with over 20 years of experience with one of the leading oil and gas companies in Nigeria, which is included in the study population, could bias my interpretation of data from the study field. I strived to minimize this possibility by bracketing my view points (See Appendix A). Also, some respondents might not be willing to provide detailed information about their strategic local content development plans due to concerns about confidentiality of such information even after I signed confidentiality agreements.

Delimitations

Delimitations are the borderlines that a researcher sets to clearly bound a study (Denscombe, 2013; Pyrczak, 2017). I delimited this study to supply chain managers in six multinational oil and gas companies operating in the Niger Delta region of Nigeria who have successfully implemented strategies that increase local content of their processes and products.

Significance of the Study

Equipped with the knowledge of strategies for increasing local contents, managers in the oil and gas industry may better formulate specific supply chain management strategies and take actions that lead to sustainable growth in local supplier capabilities and increase profitability of the buying companies from more cost-effective local inputs. The host communities of the oil and gas companies can benefit from the increased local content through employing more personnel from the localities, thereby increasing employment levels.

Contribution to Business Practice

The key contribution to business practice from this study will be information for business leaders on the potential strategies for focused investments in local content development and possible roadmap for achieving the target of 70% Nigerian content by 2027. Through the findings of the study, leaders of multinational companies may be influenced to take proactive steps towards complying with the NOGICDA while pursuing their companies' strategic objectives. In the long term, businesses can benefit from overall lower cost of inputs as quality and capabilities of local supplies and suppliers grow and the need for more expensive imports diminishes.

Implications for Social Change

The implications for social change include an impetus for leaders in oil and gas companies to take more purposeful actions towards achievement of the objectives of the local sourcing policy, which can in turn create more employment in Nigeria and improve the quality of living in the region. Growth in local indigenous technical and service

delivery capacities could increase patronage of local suppliers for goods and services previously procured from abroad, thus enabling the local enterprises to grow and create additional employment leading to reduction of youth restiveness and violent crimes in the oil and gas producing areas (Agbaji et al., 2018; Ovadia, 2013a). A more conducive social environment can reduce the necessity for Nigerians to emigrate to other countries and instead attract more foreigners to come to Nigeria for tourism and business with concomitant benefits to the Nigerian economy.

A Review of the Professional and Academic Literature

The purpose of this qualitative multiple case study was to explore strategies that supply chain managers in the Nigerian oil and gas industry use to increase local content of their processes and products in response to the Nigerian local content requirement policy as stipulated in the NOGICDA. The overall guiding question is: What strategies do supply chain managers use to increase local content of their processes and products? An understanding of the strategies that work will empower business leaders to effectively pursue local content development as strategic objectives. Extant literature on concepts of local content development, supplier development, and supplier diversity anchor the study. I used the problem statement to focus the study while developing the literature review along the direction of the conceptual framework.

I organized the literature review around existing scholarly secondary materials on local content development, supplier development, and supplier diversity, which I found in online databases and libraries, namely Emerald Management, Science Direct, SAGE Premier, ProQuest, and ResearchGate, using Thoreau and Google Scholar search engines.

I narrowed the literature review to 98 sources, of which 85 (87%) are peer reviewed or refereed. Fifty-seven of the peer-reviewed or refereed articles were published after December 2015. I used the following keywords and phrases in my search: *local content development*, *local content policy*, *Nigerian content development*, *Nigerian oil and gas industry content development*, *local supplier development*, *local sourcing*, *foreign direct investment*, *resource nationalism*, *supply chain management*, *supplier development*, and *supplier diversity*.

Definition and Objectives of Local Content Requirement

Local content is a multidimensional concept with no universally accepted definition (Ramdoo, 2015). From a narrow perspective, local content requirement is concerned with the natural resources extractor creating value for people around the proximate regions of extractive sector, and from a broader view it considers the nationality of the natural resources extracting company or the location of its headquarters (Ramdoo, 2015). In the analysis of a global industry, the definitions of local content vary in context from the purchase of inputs from a foreign-owned company that is locally based to a purchase from a company that is based abroad but locally owned (Eikeland & Nilsen, 2016).

A number of researchers have presented definitions of local content. Grossman (1981) laid the scholarly foundation for local content and defined it as a scheme that requires an input of a certain percentage of domestic value added or components in a given final product. Similarly, Kazzazi and Nouri (2012) defined local content requirement on the basis of value addition within a country through local personnel and

using local services and facilities. The International Petroleum Industry Environmental

Conservation Association (IPIECA, 2016) referred to local content as the local resources

that a project or business uses or develops in its value chain while invested in a host

country, such as the employment of nationals, procurement of goods and services

produced within the host country, partnering with local organisations, developing critical

infrastructure, enhancing local skills and local business capacities, improving local

technological capabilities, and so forth. According to Hunter (2014), local content is the

local development of technical goods and services required for production of petroleum,

and which promote economic diversification and cross sectoral linkages. De Vita (2016)

defined local content as the proportion, quantum, or percentage of inputs utilized in a

production system that are sourced from the domestic economy. Owusu and Vaaland

(2016a) posited that local content is a policy requirement to procure, from within the

country, a given proportion of materials and semifinished components for incorporation

into finished products. Kolstad and Kinyondo (2017) viewed local content as the

occurrence of domestic inputs (e.g., labor, capital, intermediate products) at different

points in the value chain. Asiago (2017) considered local content requirement to be a

statutory social investment project imposed by a host government and which creates legal

obligation between the host government and the investor. Acheampong et al. (2016)

argued that local content is a subset of industrial policies concerned with measures aimed

to derive localized values that encompass participation of national labor, services, goods,

and capital. According to Acheampong et al., local content development policies should

focus on developing linkages in the local economy, be anchored on available industrial supply base, and be supported by clearly defined and acceptable benchmarks.

Statutory definitions of local content broadly focus on the use of inputs and labor sourced from a country and generally neglect preferential consideration of the subnational stakeholders that are located in the proximity of the focal natural resources. For example, in the NOGICDA, Nigerian content is defined in terms of quantum composite value created or added in Nigeria through deliberate use of Nigerian nationals, materials and services by oil and gas companies (Nwapi, 2015b). Similarly, in Ghana, the local content is defined in the local content policy as measure of locally produced materials, personnel, financial capital, and services used in the oil and gas industry (Nwapi, 2015b). Also, in the Tanzanian local content policy, local content is defined in terms of participation and development of Tanzanian nationals and their businesses through the use of national labor, goods, services, technology, financial capital, and research capability (Nwapi, 2015b). These definitions contained in the local content statutes of the countries did not underscore need for preferential patronage of labor, goods, and services that can be sourced from host communities around the natural resources. Increasingly, local communities are realizing that they bear the brunt of mining activities and are demanding bigger shares of the benefits as compensation, besides participation in decision making (World Economic Forum, 2013). Moreover, governments are being increasingly pressured by citizens to ensure appropriate benefits from the mining sector beyond the accruals of taxes and royalties, such as creation of

linkages with other sectors in order to build their economies for the future (World
Economic Forum, 2013).

The foregoing definitions of local content focus on the duty or obligation for
extractive or manufacturing companies to uptake certain minimum volumes of local
labor, materials, and facilities in the value chain but omit a consideration of the
engagement by the resource extracting or manufacturing companies in CSR initiatives,
which do not directly relate to the core objectives of the companies (e.g., provision of
health facilities, donation of schools, and other typical infrastructure and services aimed
at uplifting the host communities) (Kolstad & Kinyondo, 2017). Cui and Lu (2018) noted
that local content requirement could be welfare-enhancing where a foreign firm invests in
a new facility in a developing country, which provides opportunities for local firms to
take part in the supply chain of complex final goods and services through learning effect
and technology spillovers, and enable eventual development of local supply base.

There are broad objectives and drivers of local content policies. These include
developing upstream supply chains dominated by indigenous companies, local workforce
development, technology transfer to indigenous companies, stimulating local research
and development, and value addition to the downstream sector of the extractive industry
(Korinek & Ramdoo, 2017). Olawuyi (2019) identified five drivers of local content
policies, namely (a) the host government's desire to increase level of domestic
competencies and capability over a period of time, (b) the quest to level the playing field
so that local investors can participate in the extractive business, (c) the need to create job
and employment opportunities and thus maximize economic benefits for citizens, (d)

improvement of national technology capacity through technology transfer and local

research and development, and (e) the need to manage or mitigate political and social

risks that arise from domestic expectations regarding distribution of authority and wealth.

The driving forces for local development become stronger as governments strive to avoid

the resource curse and see dire need to leverage the extractive industry to develop other

sectors of the economy amidst dwindling revenue accruing from exploitation of natural

resources (Olawuyi, 2019).

Local Content Development Conceptual Framework

Local content development framework provides a structured perspective of local

content development activities. Kazzazi and Nouri (2012) conceptualized a local content

development framework comprising four dominant factors that drive local content

development namely (a) local policies, (b) local capability, (c) local infrastructure, and

(d) local environment. Kazzazi and Nouri developed this framework by categorizing

variables derived from previous studies on local content within the oil and gas industry

and conceptualizing their interrelationships. Using quantitative correlational design and a

questionnaire survey of Iranian petroleum industry target group comprising managers,

supervisors, engineers and technicians, Kazzazi and Nouri analyzed data collected from

38 respondents and thus tested 10 alternative hypotheses linked to the factors of local

content development found in extant literature and identified the four dominant factors

and their interrelationships. Kazzazi and Nouri found local public policies to be the most

important enablers of local content development with the next most important factor

being local capability, while local environment and local infrastructure are of lesser

importance. Kazzazi and Nouri illustrated a symbiotic relationship amongst the factors of

local content development framework showing that local policies, local capability, local

infrastructure, and the local environment directly determine the level of local content

development in an economy, while local policies, local infrastructure and local

environment influence the available local capacity. Kazzazi and Nouri also showed that

local policies and local infrastructure shape the local environment, while local policies

influence available local infrastructure. The local content conceptual framework proposed

by Kazzazi and Nouri aligns with Heim (2018) who also conceptualized a local content

development framework as comprising stakeholders that co-create value in the local

economy through interactions and exchange of management skills, technology, and

resources within a local environment comprising markets, policy regimes, and

competitors. Heim underscored the importance of local content policy in connecting the

network of actors or stakeholders and therefore enable value co-creation among them.

The main factors of local content development are discussed in the following paragraphs.

Local Content Policies

Local content policies refer to legislations, directives, and guidelines by which

governments influence local content development. The resource-rich countries use local

content policies as creative approaches for local value creation to stimulate their local

economies by involving local companies and compelling companies in the extractive

industry to give preference to locally sourced materials, labor, and services through the

procurement of proportions of their goods and services from local suppliers within certain

mandatory minimum thresholds (Ahmad et al., 2016; Arbatli, 2018; Idachaba, 2018;

Kazzazi & Nouri, 2012; Nwapi, 2016). Given that most multinational extractive

companies utilize established vertically integrated supply chains involving global

suppliers to the disadvantage of local suppliers (Asiago, 2017), some form of external

impetus is necessary to encourage these companies to invest in local content development

(White, 2017), hence the need for the host countries to adopt local content policies that

legally bind the companies with statutory duty to contribute towards development of the

host economies through investment incentives that are tied to local content requirement

policy provisions (Ayentimi et al., 2016). The use of local content requirement policies

have therefore been useful in protecting the local industries and nurturing their capacities

to eventually become competitive locally and internationally (Johnson, 2016). As opined

by several researchers, local content policies are instrumental in driving local content

development as the implementation of the policies provide statutory impetus that compel

companies in the extractive industries to engage in forms of local content development

initiatives. The objectives of local content policies include developing upstream supply

chains, local workforce development, technology transfer, research and development, and

value addition to the downstream (Korinek & Ramdoo, 2017). The nature and application

of local content policies are further discussed in the following paragraphs.

Korinek and Ramdoo (2017) categorized local content policies as either

requirement-based or incentive-driven. For the requirement-based local content policies,

the government stipulates specific requirements or measures that investors must comply

with, such as minimum value or volume of procurement from local suppliers or threshold

for engagement of foreigners (Korinek & Ramdoo, 2017). Under the incentive-driven

local content policies, the government employs various forms of incentives to encourage companies to carry out local capacity development, transfer technology, and utilize local factors of production (Korinek & Ramdoo, 2017). Korinek and Ramdoo further classified local content on basis of quantitative or qualitative requirements that host governments impose on companies. The quantitative local content requirements are mandatory targets based on volume or value of inputs and include sanctions for noncompliance (Korinek & Ramdoo, 2017). The qualitative local content requirements are not always mandatory and often do not stipulate specific targets but largely require companies to report local content development efforts such as local procurement, employment, local capacity development and technology transfer (Korinek & Ramdoo, 2017).

There are variants of local content policies, which are characterized by differing objectives and drivers of the host countries. These can be discerned by asking two pertinent questions: (a) "what are expected positive impacts from the local content measures?," and (b) "who are the beneficiaries of the impacts?" (IPIECA, 2016). As depicted in Table 1, four key variants of local content orientations are (a) focus on provision of employment to opportunities to proximate communities, (b) focus on contributing to reduction in unemployment at macro economy level by using available local technology and labor, (c) focus on providing opportunities to certain political and economic constituencies, and (d) focus on supporting overall economic transformation and diversification (IPIECA, 2016).

Table 1

Local Content Policy Variants Based on Expected Impact and Target Beneficiaries

Beneficiaries of the impact	Expected positive impact from local content measures	
	Stimulate high-value technology transfers, innovation, and skills development	Use available technology and labor
Benefit specific socio-economic constituencies	Provide opportunities to specific political and economic constituencies.	Provide (self-)employment opportunities to neighboring communities
Broaden economic opportunities	Support economic transformation and diversification	Reduce pressure on the labor market (e.g., youth unemployment)

There are also variants of local content policies where local content is viewed on basis of how a local supplier is defined. These alternative definitions of local supplier are (a) an international supplier registered in the host country, (b) international supplier with agency arrangement with company owned by nationals of the host country, (c) international supplier in joint venture with company owned by nationals of the host country, and (d) company that nationals or residents of a host country own and operate (IPIECA, 2016). It is of worthy of note that there is no direct relationship between the ownership of a supplier and the actual value created and retained in the country. For example, a foreign owned supplier that is engaged in local production of goods using local personnel and locally sourced inputs could create far more in-country value than a locally owned supplier that merely vends imported goods (IPIECA, 2016).

There is increasing trend of countries that have rich endowment of hydrocarbon resources and other natural resources implementing forms of local content policies with

the objective of encouraging participation of local companies, maximizing benefits from their oil and gas assets, increasing domestic employment, enabling inward technology transfer, developing human capital, and uplifting living standards for their citizens (Ahmad et al., 2016; Andrews & Nwapi, 2018; Kolstad & Kiyondo, 2017; Ovadia, 2014; Ovadia, 2016). According to Hufbauer et al. (2013), the implementation of local content protectionist measures by governments significantly increased since the great recession, with some 3,334 measures coming into place since 2008, and 431 protectionist measures implemented between 2012 and 2013 compared to far fewer liberalization policies implemented during same periods. Variants of policies aimed to increase local content include laws requiring companies to procure certain percentage of input goods and services locally; imposition of taxes, tariffs and price concessions conditioned on local procurement; import licensing procedures structured to influence local purchases; requirement for local storage and analysis of data; and local testing of products (Hufbauer, Schott, & Cimino-Isaacs, 2013).

In Nigeria, the NOGICDA, which was signed into law in April 2010 climaxed several years of policy formulations that were aimed at increasing control of oil and gas wealth by Nigerians and encouraging growth of local content (Ovadia, 2013b). The fundamental objective of the NOGICDA is underscored in the definition of Nigerian content as "the quantum of composite value added to, or created in, the Nigerian economy through the deliberate utilization of Nigerian human and material resources and services in the Upstream Sector of the Nigerian Petroleum Industry" (NOGICDA, section 106). The NOGICDA is aimed to enable retention in the local economy much of the

annual spend of over eight billion United States dollars in the extraction of oil and gas resources, and thus stimulate the growth of other sectors of the Nigerian economy (Ovadia, 2013b).

The estimates of influence of local content requirement policy on an economy are highly contradictory. Some scholars view local content policies are effective in promoting start-up firms, transfer of technical competencies to locals, and stimulating growth of local production, while other scholars are concerned that local content policies could create market imbalance, raise costs for buyers, reduce foreign direct investments, and limit technological developments of local companies (Hansen, 2020; Semykina, 2017). A notable example of local content policy success story is the development of the North Sea oil and gas industry during the 1970s where the Norwegian government implemented local content policy that restricted importation of certain goods and services and where national companies were founded in order to achieve inward technological transfer, create jobs, increase control and ownership of resources, and create linkages in the economy (Hunter, 2014; Ryggvik, 2015; Semykina, 2017). Andrews and Nwapi (2018) further underscored the positive role of local content policies with examples of Japan, South Korea, Taiwan, Hong Kong, and Singapore that experienced phenomenal development following the second world war partly due to favorable public policies. According to Grossman (1981), the economic effects of local content policies will vary depending on the economic factors targeted for protection and the market structure. Kazzazi and Nouri (2012) and Adedeji et al. (2016) found strong direct relationship between local content policies and local content development. According to Sidique et al.

(2015), local content policies have contributed to the growth of local companies' involvement in the oil and gas industry at more than 45% level. According to Adedeji et al., well implemented local content policies influence the participation of local firms in the oil and gas sector and the development of backward linkages in the local economy. Ovadia (2016) observed that local content policies have had positive impacts on the economic development of oil rich countries in Africa namely Angola, Nigeria and Ghana as evidenced by entrance of local companies into the sector and significant increase in uptake of local inputs.

Local content policies have also been criticized for having inherent drawbacks. The weaknesses found in some local content polices include high variability in positive impact on local activities, lack of knowledge of local content requirements effectiveness, insulation of new local entrants from competition resulting in their lag in new technology, difficulty in assessing the real cost impact associated with local content requirements, unnecessary delays and additional cost of doing business, and absence of 'sunset' or exit strategy provisions resulting in long term distortion of the market (Hufbauer et al., 2013). Johnson (2016) noted that local content policies tend to prevent project developers from the optimum use of technologies that are available in the international market, which potentially result in less competitive projects execution due to higher costs and lower performances that are passed on to the final consumers. Local suppliers may lack the capability to meet high standards and quality requirements of the investor and even when they have the capability, they might be unable to cope with large contracts that require integration (Johnson, 2016; Korinek & Ramdoo, 2017). Whereas the investor may be

willing to localize management and technical personnel, the key obstacle could be dearth

of local skills, which may be attributable to poor standards of tertiary institutions that are

ill-equipped or underfunded (Emmanuel, 2016). The investors might therefore be faced

with higher operating costs in complying with local content policies and part of the

additional costs are passed on to the governments in the form of reduced tax receipts

(Emmanuel, 2016). Similarly, Hansen (2020) highlighted that local content policies can

adversely impact a multinational company's operational financial viability, disrupt

effectiveness of its supply chains, lower safety and quality standards, and endanger global

brand and reputation (Hansen, 2020). Due to lack of clarity in aspects of local content

requirements including its meaning, scope, implementation approach, performance

measurement, and reporting, there could be misalignments in expectations between

public policy makers and investors, and this can result in significant legal risks for the

investors (Olawuyi, 2019).

Where an optimal local content policy prevails, investors themselves will derive

benefits from the policy as they have profit motive of searching for local suppliers and

encouraging them to be competitive, and proceeds of the extractive industry are invested

in developing local infrastructure in the host country (Emmanuel, 2016). Warner (2017)

therefore underscored a need for public policy makers to evaluate the impact of new local

content policies on the local economy using economic impact optimization modelling.

Warner proposed the use of economic impact modelling to highlight any conflicts with

other public policies and interests such as need to attract foreign direct investments,

competitiveness of the local industry, and government revenues. It is needful for supply

chain managers and leaders in oil and gas companies to carry out economic impact assessment of local content policies on their corporate business objectives in order to have informed bases for selecting and implementing optimum local content strategies. It is further necessary that the extractive companies strive to negotiate with policy makers local content policies that are unambiguous, transparent, and achievable (Olawuyi, 2019; Warner, 2017).

Available Local Capabilities

Key element of local content development is substitution of foreign capabilities with locally available capabilities. Kazzazi and Nouri (2012) argued that local content development in the oil and gas sector will thrive to the extent of the existing local capabilities comprising level of education, skills, transferability of technological knowhow, and research and development services. This aligns with the views of Hansen (2017), Heim (2018), and Narula (2018) that weak absorptive capacities in local industries limit the formation of linkages within the African extractive industries and local economies despite the prevalence of local content policies. Although there is significant potential for multinational companies to create linkages in local economy, few countries experience meaningful multinational company led development and FDI due to weak domestic firms and poor location advantage (Boateng et al., 2018).

The development of local technology capability is influenced by in-house research and development, qualification, experience, and size of technical staff, firm's size, age, and the acquisition of advanced equipment (Akinwale et al., 2018). Akinwale et al. opined that government and industry alike should ensure local domiciliation of

research and development and extensive workforce training in order to enhance local

capabilities in oil and gas field development. According to Abu et al. (2018), technology

transfer is an operational vehicle for closing gaps in knowledge and innovation between

developed and developing economies. In recognition of the need to close gap in the

technical knowhow, the NOGICDA includes a requirement for the oil and gas companies

to facilitate technology transfer as part of local content development initiatives.

Governments and multinational oil and gas companies can contribute to addressing local

capability gap through recruitment and training of local personnel, embarking of CSR

initiatives such as funding of scholarships for tertiary education in the disciplines of

competence deficiencies, facilitating technology transfer, and implementing supplier

development programs for local suppliers that demonstrate capacity to grow.

Existing Local Infrastructure

The available local infrastructure influences local content development (Kazzazi

& Nouri, 2012). Local infrastructure includes local standards, education system, social

welfare, information technology, research and development, regulatory institutions and

basic infrastructure such as roads, electricity, potable water and etcetera (Kazzazi &

Nouri, 2012; Narula, 2018). Infrastructure is a complementary factor considered to be

directly and positively connected with firms' participation in backward linkages, which in

turn result in job creation (Adedeji et al, 2016). As found by Narula, the availability of

multi-user infrastructure at marginal cost is a precondition for creation of production and

consumption linkages, which are key aspects of local content development. Similarly,

Ramdoo (2016) argued that local content success is influenced by the level of institutional readiness of the host country.

Local Environmental Factors

The local environment factors that form part of the local content development model include macroeconomic environmental factors such as currency exchange rates, inflation rates, and competitive forces, which influence investment decisions and attractiveness to foreign direct investors (Kazzazi & Nouri, 2012). Kazzazi and Nouri noted that some government policies impact the environments for investment, which in turn influence local content development. To mitigate the resource curse syndrome, it is needful for resource rich countries to lay solid foundations for sound management of institutions and the economy (Kazzazi & Nouri, 2012).

The Nigerian Oil and Gas Industry Content Development Act, 2010

The NOGICDA in many respects mirrors the Norwegian local content legislation. The Nigerian government uses this public policy to regulate a gamut of activities that are involved in the exploration, development, production, transportation, and sale of various oil and gas products, while assuring minimum acceptable standards of quality, health, safety, and environmental preservation (White, 2017). The NOGICDA embodies legal requirements that compel buying firms in the oil and gas industry to patronize Nigerian products and services with the objective of promoting local participation, technology transfer, and sustainable macro-economic growth (Orji, 2020; Orji, 2018). The thrusts of the NOGICDA are to increase indigenous firms' participation, promote the employment of Nigerians in the industry in the oil and gas business, and boost economic activities in

Nigeria through the regulation of minimum activities that must be carried out by local

companies and minimum threshold goods and services to be sourced in Nigeria (Orji,

2020; Awe et al., 2016). The NOGICDA established a statutory duty that requires oil and

gas companies to patronize Nigerian products and services in the oil and gas industry

with objective of promoting the participation of indigenous companies, stimulation of

technology transfer, and diversification of investor base in the industry (Orji, 2020). The

NOGICDA stipulates first consideration of Nigerian companies in the award of oil

blocks, licenses, shipping services, and all projects in the oil and gas industry. In the

NOGICDA, a Nigerian company is defined as one where Nigerian citizens hold

minimum of 51% equity. The NOGICDA further stipulates exclusive consideration of

Nigerian companies for the execution of works on land and swamp terrains, where such

companies demonstrate ownership of equipment, Nigerian personnel, and capacity. The

Nigerian content law prescribes following requirements for compliance by operators in

the Nigeria oil and gas industry:

- exclusive consideration of Nigerian indigenous service companies that demonstrate ownership of equipment, Nigerian personnel, and capacity for tendering of work execution on land and swamp terrains in the oil and gas business,

- first consideration of goods and services sourced from within Nigeria subject to minimum thresholds as specified in the Schedule to the Act,

- consideration of relative Nigerian contents in the evaluation of tenders with preference given to a bidder with higher Nigerian content where bids are within 1% of each other,

- full and fair opportunity to Nigerian indigenous companies and contractors in the bidding process,

- the award of contract not solely on basis of lowest bidder where a Nigerian indigenous contractor demonstrates capacity and its bid compared to a non-indigenous bidder's price is within 10% difference,

- the Nigerian Content Development and Monitoring Board (NCDMB) to approve tender documents for contracts estimated to exceed $1,000,000,

- operators to submit to NCDMB for purpose of review and monitoring, a list of contracts and purchase orders exceeding $1,000,000 within 30 days prior to first day of each quarter,

- first consideration of Nigerians in employment and training and a succession plan for employment positions not currently filled by Nigerians,

- operator to obtain NCDMB approval prior to engaging expatriate personnel,

- all projects or contracts with budgets exceeding $100 million to have a labor clause committing to use of a minimum percentage of Nigerian labor in giving job levels as may be specified by the NCDMB,

- every project plan to include program and budget for training, research, and development in Nigeria,

- compliance with targets set by the Minister to enable full utilization and

  steady growth of indigenous companies engaged in exploration,

- registration of company or its personnel with professional bodies in Nigeria,

- implementation of programs that promote technology transfer to Nigeria,

- engagement of insurance brokers registered in Nigeria for insurance for risks

  in relation to oil and gas business,

- engagement Nigerian legal practitioners or firms for provision of legal

  services,

- use of Nigerian financial institutions for financial services except only where

  doing so is not practicable,

- carrying out all fabrication and welding activities in Nigeria,

- submission to NCDMB annual Nigerian content performance report within 60

  days from beginning of each year and require contractors and subcontractors

  to do the same,

- communication of Nigerian content policies and procedures to contractors and

  subcontractors to ensure compliance, and

- deduction of the sum of 1% of every contract and remit to Nigerian Content

  Development Fund to be administered by NCDMB.

The main objectives of the Nigerian local content law are not very different from

those of other oil rich countries that have similar policies (Sidique et al., 2015). The

implementation of the local content law is focused on stimulating the development of

local companies to take over from the international oil and gas companies in future as

operators and to eventually dominate the technical services sector and thus stimulate the growth of the Nigerian economy (Hufbauer et al., 2013). It is also targeted at generating employment opportunities for indigenes and increasing participation of local firms in the supply chains resulting in improved backward linkage development through increased local procurement of input materials and services (Acheampong et al., 2016: Adedeji et al, 2016). However, the Nigerian market ostensibly lacks the capacity to provide the enormous technical inputs in the oil and gas business value chains, which comprise finding, developing, producing, and distributing hydrocarbon resources (Hufbauer et al., 2013). Overall, Nigerian content law is aimed at consistently growing in-country value retention through increasing indigenous participation in the oil and gas value chain, which was reported to have grown from about 5% in 2010 when the NOGICDA was enacted to 26% in 2017 and with target to achieve 70% local content by year 2027 (Wabote, 2017b), with in-country value retention of 14 billion United States dollars from the annual oil and gas industry spend (Wabote, 2018d).

The NOGICDA also established the NCDMB, which is entrusted with the implementation of the Nigerian content law, including facilitating capacity development of Nigerian companies (White, 2017). The executive secretary, who must be a technocrat with cognate oil and gas industry experience and who is appointed by the president of the Federal Republic of Nigeria, heads the NCDMB. Other members of the board include the representatives of the Ministry of Petroleum Resources, the Nigerian National Petroleum Corporation, Petroleum Technology Association of Nigeria, Council of Registered Engineers, Nigerian Content Consultative Forum, and National Insurance Commission.

The Nigerian content law further established the Nigerian Content Development Fund (NCDF) with the objective of providing financial support for the development of technical capacity and capability of Nigerian indigenous companies and development of local content development support infrastructure. The NCDF, which the NCDMB administers, is funded from mandatory 1% tax on all contracts awarded in the Nigeria oil and gas industry (Ovadia, 2014). Recent guidelines, which the NCDMB issued, indicates that Nigerian companies doing business in the oil and gas sector are eligible to access the fund subject to single obligor limit of 10 million United States dollars at interest rate of 8% per annum for maximum 10-year loan tenure (NCDMB, March 2017).

Some of the prescriptions of the NOGICDA are in tandem with supply chain management good standards of practice such as encouraging of fair competition in tendering processes (Angeles & Milne, 2016), developing local supplier base to ensure security of supply, and engaging in research and development to improve the value chain. The minimum targets set in the Schedule to the NOGICDA, which are in many respects well above the current capacities and capabilities of the local suppliers, can be viewed as both constraints and opportunities for the oil and gas companies. These are wake-up call for the oil and gas companies to proactively engage in the development of local capacity and capability by deliberately shaping demands to maximize use of in-country resources, proactively investing in the development of local suppliers to make them fit to meet future demands, training Nigerian personnel to perform at the right levels while reducing operating cost, and sponsoring research and development activities to continuously improve the value chain. In complying with the Nigerian content law, multinational oil

and gas companies in the Niger Delta are exposed to higher costs and longer schedules, but this can become a strategic investment that would pay back in future projects.

The NOGICDA prescribes that any operator, contractor, or subcontractor that contravenes the provisions of the Nigerian content law commits an offence and will upon conviction be liable to a fine of 5% of the project sum, or cancellation of the project. Contravention of the Nigerian content law is not an option for a reputable oil and gas company. Considering the significant financial losses due to NCDMB imposition of fines, delay or cancellation of a project or operations, as well as other non-technical risks such as work disruption by aggrieved local stakeholders, and irreparable reputational damage which a multinational oil and gas company could suffer, it is imperative for supply chain managers to proactively develop strategies for implementing the local content requirements as prescribed by the Nigerian content law.

According to Adedeji et al. (2016), the implementation of the Nigerian local content policy has positively influenced local value creation in the Nigeria oil and gas sector although the impact falls short of expectations. Similarly, Monday (2015) observed that the NOGICDA has significantly influenced development of human capital in the Nigeria oil and gas industry and this has positive knock on effect on performances of the local oil companies. Also, Onyi-Ogelle (2016) found that the Nigerian local content policy has been instrumental in a gradual but steady growth in Nigerian local companies' competencies and the upgrade of personnel capabilities to execute jobs previously carried out exclusively by expatriates, and fabrication works hitherto executed in foreign fabrication yards such as well head platforms locally built for Mobile Producing Nigeria

Unlimited for their 20 oil fields in Nigeria, procurement of locally made oil and gas line-pipes by ExxonMobil, and local fabrication of offshore living quarters for Total Exploration and Production Nigeria.

A major setback to full leveraging of the linkages provided by the oil and gas sector as intended in the Nigerian local content policy is subsisting weak relationship among the local oil and gas companies, tertiary institutions and research and development companies in Nigeria (Monday, 2015). Other key setback is lack of will power by government and some local contractors to push for full implementation of the Nigerian content law due to rent seeking posture given that the country heavily leans on taxes and royalties from the exploitation of oil and gas resource by multinational companies for over 90% of its revenues with very little revenue coming from taxes from other sectors of the economy and citizens (Ovadia, 2013a). Albert (2018) argued that the Nigerian economy is driven by foreign capital and that the rentier character of the state enabled dominance of foreign capital in the gas sector, which distort and stagnate local initiatives capable of developing indigenous technology in the production of liquefied natural gas. Nwapi (2015b) also found weakness in the implementation of the NOGICDA in the form of conflicts of interest, broad discretionary powers assigned to the NCDMB, pressure from politicians, the influence of oil and gas companies, lack of transparency in oil and gas contract system, and possible soliciting of facilitation payment.

Business Imperatives for Local Content Development

In the extant literature on local content development, far more attention is given to forms of binding contractual or regulatory constructs that require multinational

organisations to use certain volume of locally sourced inputs (Kolstad & Kinyondo, 2017) than a consideration of strategies and tactics that the multinational companies pursue in order to increase local contents of their products and services. This dominant narrative of the local content development may have been influenced by a view that without external impetus, companies involved in the extraction of natural resources will not give due consideration to local content requirement (Ovadia, 2014; White, 2017). Ovadia observed that although local content development benefits multinational companies and the private sector in the long term through lower procurement costs, government intervention using local content policy is necessary because multinational companies generally lack self-motivation to take action due to initial higher costs associated with training and skills development for nationals and local suppliers. There is however a need to also look at local content requirement from the business and macroeconomics perspectives. Kolstad and Kinyondo argued that the mandatory local content requirements have cost implications, which in some cases outweigh the intended benefits. Similarly, Hansen (2020) argued that local content requirements may negatively impact the financial viability of a multinational companies' operations, disrupt their supply chains, and threaten their brands reputation. The increased cost for the extractive multinational companies could translate to increased price of outputs and reduced tax for the government (Hansen, 2020). Investment in local content development can also be rewarding where a multinational company pursues it as part of supply chain management strategy leading to lower sourcing costs, access to valuable local knowledge, and opportunities to leverage local industrial clusters and share investment risks for human

capital and supply chain development (Hansen, 2020). When a multinational company embarks local content development, it can generate opportunities to stimulate the cultivate a sustainable culture of capabilities and service quality that align with international standards and can exceed buyers' expectations (Calignano & Vaaland, 2017). The objectives of increasing domestic employment and local sourcing of inputs could therefore be better achieved through non-mandatory policies where multinational companies are incentivised to voluntarily pursue local sourcing (Kolstad & Kinyondo, 2017).

Local Content Development as Shared Value Proposition

As opined by IPIECA (2016) a good local content practice is founded on the notion of creating mutual shared value between the resource developer, the local community, and host country, through articulation of business strategies that are framed to achieve business competitiveness while accruing stability and economic growth to the local community and host country. As further noted by IPIECA, extractive project companies stand to gain by creating shared value through generation and cultivation of economic opportunities related to their workers, supply chains involving local suppliers, and the involvement of proximate communities. Natural resource extractive companies and their host countries can mutually agree and target local content objectives that are geared towards reaping shared values from the hydrocarbon resource developments, such that the host countries use local content to deliver benefits to their people in addition to taxes and royalties, while the oil and gas companies embrace it as strategic approach rather than a mere regulatory requirement or risk to be managed (IPIECA, 2016). This is

consistent with finding by Ngoasong (2014) that multinational oil and gas companies do negotiate with the local content policy makers and host communities for more favourable local content plans. Ahmad et al. (2017) also found that multinational oil and gas companies do take on partnership approaches that are aligned with local needs of the host countries, such as adopting business case for local content strategy and incorporating therein CSR initiatives of capability building and community participation.

Consistent with the UNDP's Sustainable Development Goal No 4, oil and gas companies can profit from a strategy that aligns business priorities and local content requirements, by analyzing the value chain for project's and operating asset's needs for goods and services, and local capacity to achieve them, and implementing measures to close the gaps between demand and supply (International Finance Corporation et al., 2017). By mapping existing capabilities in the local community, oil and gas companies can identify a baseline of available education and technology, assess skills gaps, and articulate strategies for closing the gaps such as in-house delivered training for workers, award of scholarships to personnel to attend external or out-of-country learning events, and sharing the baseline assessments with host governments to improve their understanding of the oil and gas industry's needs. Also, by working with tertiary institutions and service providers, oil and gas companies can influence the design and delivery of specialized courses, and technical and vocational education and training programs that match required skills and professional knowledge (International Finance Corporation et al., 2017). Furthermore, the oil and gas companies can contribute to capacity development of existing and potential suppliers through joint implementation of

various forms of supplier-development programs such as in areas of business

improvement plans and preparation of tenders and reduce their costs through harmonized

tender procedures. Moreover, the engagement of the academia in the oil and gas business

in the area of research and development can create more values for the oil and gas

companies in term of new tools, materials, and systems to replace imported solutions

(Idachaba, 2017).

Ngo (2017) provided a good example of local content development driven mainly

by multinational companies as business strategy in the absence of government

interventionist policy. During 2000s, local industry growth in Vietnam was mostly

influenced by foreign direct investment and competitive forces among Japanese and

Chinese manufacturers resulting in significant technical skills transfer to local firms

through collaboration with foreign firms even when government failed in implementation

of industrial policies (Ngo, 2017). Owusu and Vaaland (2016a) opined that success in

local content development requires effective business networking and alignment of

resources across multinational oil and gas companies, local companies, local institutions,

and foreign companies and institutions, and that these should engage in mutual constraint

mitigation through commitment to removing constraints in own organizations and in the

interconnecting linkages.

Local Content Development Through Contract Structure

The multinational companies' contracting policies and practices can influence the

extent of local content development. From the analysis of local content aspects of

multinational companies' strategies as linkages between the multinational companies and

regional development through contractual arrangements that encourage regional firms to connect with global networks entering the regions, Eikeland and Nilsen (2016) identified three aspects of multinational companies' contracts structure that enable local content development, namely (a) categorization of multinational projects into subcontract modules; (b) utilization of framework contracts; and (c) treatment of transportation costs to sites in tenders. Eikeland and Nilsen found that the contract strategies link multinational companies and suppliers, and the success of local content initiatives depends on how the contract strategies are designed. Eikeland and Nilsen further found that the number and content of contract modules are critical for integration of global production networks and regional firms, and the extent of the alignment in terms of capacity and structure will influence local content development. Eikeland and Nilsen pointed out that strong business relationships with initial suppliers at pioneer stage tend to hinder establishment of new local supplier networks within the host economy and underscored the need for the multinational companies to reduce the number of established framework contracts utilized in order to make room for uptake and participation of new regional suppliers. Furthermore, Eikeland and Nilsen observed that where logistics costs for goods and services are considered in sourcing decision, justification for consideration of local firms as favorite suppliers becomes stronger.

A key hinderance for local suppliers' participation in the supply chains of multinational companies in the extractive industry is their inability to meet technical and financial requirements for executing large and complex projects. This challenge could be mitigated by the multinational companies adjusting their procurement strategies to allow

for unbundling of typical large project contracts into smaller components that the local

contractors can effectively compete for (Korinek & Ramdoo, 2017). There is further need

for the multinational companies to support the local suppliers by reducing information

and capacity gaps through technical and business assistance, aiding local suppliers to

obtain required certifications, and facilitating prompt payments for work done in order to

enhance cashflow (Korinek & Ramdoo, 2017).

Cost Optimization Strategy and License To Operate

Arbatli (2018) observed a growing trend of power shift from the multinational

companies who once controlled technology and financing, to national oil companies who

are now able to procure the requisite technology and therefore directly control the

exploitation of oil and gas resources. This means that once seemingly irreplaceable

multinational oil and gas companies can now be replaced by indigenous oil and gas

companies. The multinational oil and gas companies are therefore more than ever under

pressure to rethink their modus operandi in line with the local content requirements

imposed by the host country if they are to continue to operate. By developing and using

local workforce and procurement, the multinational companies may achieve more

sustainable and cost-effective operations while earning social license to operate

(Ngoasong, 2014; Ovadia, 2014). Complying with local content requirements is therefore

not just an imperative as a good corporate citizen but also a strategic lever for value

optimization and prerequisite for securing social license to operate (Kolstad & Kinyondo,

2017; Ngoasong, 2014). The need for social license to operate emerged because local

stakeholders of lost trust in political and legal systems' ability to effectively deal with their concerns (Smits et al., 2017).

The examples of oil and gas companies' active participation in closing local content gaps through CSR investments are Chevron's investment of some 150 million United States dollars in call for action to increase engagement in science, technology, engineering, and mathematics (STEM) across the United States; Shell's sponsorship of skill acquisition program tagged Bridging Employment through Skills Training (BEST) in the Philippines, which as of 2016 produced over 4,200 scholars of which more than 80% found jobs within Philippines and overseas; and Yemen LNG plant investment in the development of local engineers to fill skills gap and achieve 80% core local personnel (International Finance Corporation et al., 2017). In 2015, TOTAL E&P Nigeria Ltd and TOTAL Upstream Nigeria Ltd launched supplier financing scheme to the tune of 7.5 billion United States dollars with Nigerian commercial banks for the support of Nigerian contractors engaged in their services (NCDMB, 2015, July 18). Similarly, in 2016, the Shell Companies in Nigeria partnered with 8 commercial banks for low interest loan facilities to the tune of 2.2 billion United States dollars to support execution of contracts awarded to small and medium scale enterprises (Shell Companies in Nigeria, 2016, November 21).

Local Content Requirement and Multinational Firms' Business Strategy

Grossman (1981) investigated how content protection and local content preference schemes affect business decisions on the allocation of resources with respect to intermediate and finished goods production. Using a lagrangian function model,

Grossman developed an array of supply and demand curves for intermediate goods and final products and established that the implementation of a [local] content protection policy will initially cause an increase in output for locally sourced intermediate goods due to increased demand resulting from the local substitution of previously imported intermediate goods, but the demand for intermediate goods and final product could eventually drop due to significant increase in the domestic costs. Grossman showed that local content protection will drive up price of the domestic sourced inputs as firms are compelled to use more of them and this way benefit the input suppliers while hurting the final-goods companies who have to contend with increased production costs, and who in turn charge higher prices for the final-goods to consumers: potentially resulting in reduced overall welfare in the economy. Grossman concluded that companies make business decision to either comply with local content requirement or otherwise ignore it and pay penalties depending on their evaluation of the potential maximum profit for the alternative courses of action.

Building on the work of Grossman (1981), Qiu and Tao (2001) explored the effect of local content requirement on the business decisions by multinational companies in respect of entry into a host country through foreign direct investment or through export for tradable intermediate goods required to produce a final consumer good. They developed a mathematical model to demonstrate that a firm will choose foreign direct investment as optimal mode of entry if doing so maximizes its profit compared to export mode, or it will otherwise choose export mode. Qiu and Tao showed that equilibrium outcome is influenced by the interplay of export costs and costs associated with

complying with local content policy, and for a given local content policy, a firm will

likely choose foreign direct investment over export if the export cost (which includes

transport cost and tariffs) is comparatively higher. Qiu and Tao further showed that where

the associated cost of fulfilling local content requirements is significantly higher than the

unit cost of importing intermediate products, a final-good producer will likely switch

from foreign direct investment to importation of intermediate products as the level of

local content requirement increase from zero to 100% (Qiu & Tao, 2001). Qui and Tao

opined that faced with certain level of local content requirements, multinational

companies could opt to relocate investments to other countries while only less efficient

multinational companies may be attracted; being willing to use technologically inferior

locally sourced inputs and to grapple with high production cost.

Using a duopoly mathematical model of multinational companies in a two-stage

production scenario, Kwon and Chun (2009) analyzed the impact of local content

requirement on a multinational company's choice of technology transfer, and established

that although the magnitude of local content requirement will, in general, not affect

technology transfer under diffusion, an increase in local content requirement could

motivate multinational companies to establish own intermediate input suppliers with

whom they engage in vertical technology transfer and therefore foreclose technology

diffusion. Kwon and Chun showed that a multinational company's decision to transfer

technology through foreign direct investment in a host country is largely driven by its

evaluation of the profit potential compared with an alternative of not investing in local

suppliers. Local content policy can be a means for improving social welfare through

technology diffusion as multinational companies outsource requirements to local

suppliers and engage in technology transfer in order to improve the quality of the local

bought in intermediate goods (Kwon & Chun, 2009).

Using a qualitative narrative analysis design, Ngoasong (2014) carried out a

content and context review of extant literature that were published between 2000 and

2012 to understand the business practices, which managers in five multinational oil and

gas companies (Shell, BP, ExxonMobil, Chevron, and Total) in Nigeria, Angola, Brazil,

Indonesia, Kazakhstan, and Yemen used to respond to local content polices. Ngoasong

found that these multinational companies generally engaged in technical capacity

development and human capacity development through sourcing practices, human

resource development practices, and economic growth activities. Sourcing practices

include contracting with local suppliers, funding and technical assistance to upgrade

capacities of the local suppliers, and funding and technical assistance to non-petroleum

sectors (Ngoasong, 2014). The human resource development practices comprise

recruitment plan for employees, replacement of expatriates with local personnel, funding

local institutions and award of scholarships, and sponsorship of apprenticeship programs

(Ngoasong, 2014). The economic growth activities arising as a result of the sourcing

practices and human resource development practices include organization learning,

technology transfer and skills acquisition for locals, capital formation for startup

companies, and new business development (Ngoasong, 2014). Ngoasong found that the

multinational oil and gas companies generally share similar themes in their local content

development strategies being defined by key words and phrases as shown in Table 2.

Ngoasong further identified four key themes around the responses of multinational oil and gas companies to local content requirements in host countries, which comprise (a) direct engagement of governments to negotiate local content requirements, (b) legal compliance framework, (c) consideration of local content development as corporate business strategy, and (d) integration of CSR initiatives and local content development. These are briefly discussed in the following paragraphs.

Table 2

Local Content Strategy Themes Used by Multinational Oil and Gas Companies

Oil and gas companies	Local content strategy themes
BP	Developing competitive local suppliers; personnel capacity development; local economic development; stakeholder recognition/engagement
Chevron	Capacity development, empowering local competencies; preferential selection; research and development
ExxonMobil	Workforce development; supplier development; strategic community investments
Shell	Local manufacturing development, personnel capacity development; training and support.
Total	Sustainable local skills enhancement; industrial capacity development; meeting stakeholder expectations.

Engagement of Government to Negotiate Favorable Local Content Policy

Being key stakeholders in the oil and gas sector, multinational oil and gas companies often engage with government agencies and regulators to contribute to development of more favorable local content regulations. In Nigeria, Shell gave direct technical advice to the Nigerian government authorities that contributed to shaping of the NOGICDA, and other multinational oil and gas companies likewise made representations

through a national committee that met every month to review the progress (Ngoasong, 2014). The multinational oil and gas companies have also made representations to the legislative committees responsible for the ongoing review and amendment of the Nigerian Content Law. Similarly, in Kazakhstan, multinational oil and gas companies made inputs into the development the Content Increase Program which formed basis for the Kazakh Content Law (Ngoasong, 2014). Hansen (2020) and Ngoasong noted that the multinational extractive companies often attempt to negotiate a relaxation of the local content requirements but ultimately shape their strategies towards compliance with the policies.

Legal Compliance with Local Content Targets

Generally, the multinational extractive companies adopt proactive measures to comply with local content requirements as enshrined in the statutes. In the oil and gas industry, the multinational oil and gas companies often develop and implement local content execution frameworks, enter into global memorandum of understanding (GMOUs) with host governments and communities to ensure alignment on priority areas of local capacity development, and engage independent auditors or local non-governmental organizations (NGOs) to independently verify performance (Ngoasong, 2014). Under the legal compliance mode, the multinational companies give a lot of focus to documenting evidence of compliance with the minimum requirements in order to achieve satisfactory audits by government authorities and retain license to operate (Ngoasong, 2014).

Approach Of Local Content As Business Strategy

Ngoasong (2014) found that some multinational oil and gas companies view local content as a business strategy and opportunity to achieve operational efficiency and maximize shareholders' value. As noted by Ramdoo (2016), companies are beginning to change their attitude to local content from the mind-set of risk management and minimum compliance with regulatory requirements and now seek mutually beneficial business opportunities with the local communities and suppliers in response to local content requirement policies. Such companies consider that a good local content strategy, which involves the use of local labor and local sourcing of some inputs, can significantly reduce direct operating cost and mitigate against non-technical risks and concomitant costs (Ngoasong, 2014). The companies that excel in local content development integrate local supply chain support in their procurement policies as cost effectiveness measures, focus on core inputs where local suppliers have capability, and provide support to assist them meet standards and requirements (Ramdoo, 2016). Key success factors are building of strong relationships with the local businesses, aligning common interests, and working together with other companies in the industry to maximize economy of scale from the local market (Ramdoo, 2016). Furthermore, the companies that excel in local content development invest in community development activities to earn freedom to operate and require their contractors to continuously improve the local content value of their services through local sourcing of inputs (Ngoasong, 2014). Ngoasong (2014) further described multinational oil and gas companies' implementation of local content development initiatives as an insurance against non-technical risks such as regulatory backlash,

protests, work stoppages, and boycotts, considering that non-technical risks account for

most of cost overruns in oil and gas development projects.

Integration of CSR Initiatives with Local Content Strategy

   Some multinational oil and gas companies look beyond the business value in

embracing local content requirement policies and view it in tandem with CSR. Such

companies therefore report social investments such as the award of educational

scholarships to indigenes as part of local content development (Ngoasong, 2014).

Although there may not be direct CSR initiatives to the business objectives, such

initiatives do contribute to overall business value in terms of goodwill capital (Podhorska

et al, 2019) and freedom to operate in the community (Ngoasong, 2014). This aligns with

Ağan et al.'s (2016) view that sustainable supply chain management results from the

interaction and integration of CSR and supply chain management. Similarly, Mani et al.

(2018) opined that the pursuit of supplier social sustainability practices by the buying

company, can contribute to competitive advantage for the buying company and indeed

the supply chain.

Collaboration Between Multinational Oil and Gas Companies and Other Industry

Stakeholders

   Ongoing collaborations among multinational oil and gas companies and key

stakeholders through active linkages are vital for effective local content development.

Using qualitative content analysis design, Owusu and Vaaland (2016b) studied literature

published between 2000 and 2014 to understand linkages among the multinational oil and

gas companies and domestic companies in the Nigeria oil and gas industry, as well as

their linkages with other economic, legal, and political actors, and developed a conceptual model comprising an interlink of key sectoral actors namely local companies, public regulators, foreign companies and institutions, learning institutions, and financial institutions. The model shows direct interrelationships between public regulators and foreign companies and institutions, public regulators and learning institutions, learning institutions and financial institutions, and foreign companies and institutions and financial institutions in the development of local companies in response to local content requirement (Owusu & Vaaland, 2016b). According Owusu and Vaaland, being able to deploy necessary resources for the local content development tends to depend on the ability of the foreign companies and institutions to build and maintain linkages with local industrial base and with learning institutions.

The multinational oil and gas companies need to lead in collaborations among the key sectoral actors for effective local content development. Owusu and Vaaland (2016b) opined that a key blocker to achieving local content development objectives is unequal relationship between the multinational oil and gas companies and the host developing countries. According to Owusu and Vaaland, multinational companies are often unwilling to involve local workforce and domestic firms in their value chains, and the host countries have seldom shown sufficient commitment to develop requisite capabilities and implement applicable laws. By viewing their organizational business objectives from the perspective of the industrial network framework as articulated by Owusu and Vaaland, managers in multinational oil and gas companies will better appreciate the importance of their organizations developing mutually beneficial relationships in cooperation with other

actors in the oil and gas industry, aimed at achieving their corporate objectives while delivering on the local content development policy. As further opined by Owusu and Vaaland, managers of multinational oil and gas companies should abandon classical strategy of beating the competition and profiting at the expense of their purchasers and suppliers but rather start working with them to create mutual values.

Strategic Management Approach to Local Content Development

The strategic management perspective of local content development provides supply chain managers a business-facing imperative for embarking on local content development. Whereas many authors have examined local content from economic efficiency, value chain, industrial development, and political economy perspectives, a strategic management perspective of local content has been sparsely explored (Hansen, 2020). Local content requirements can adversely impact a multinational company's operational financial viability, disrupt effectiveness of supply chains, lower safety and quality standards, and endanger global brand and reputation (Hansen, 2020). Conversely, local content benefits to the multinational companies may include access to local capabilities, opportunity to foster long term relationships with host governments and local stakeholders, low community risks, and creation of strategic differentiation against competitors (Hansen, 2020). Given ever increasing local content pressures from African governments, a new strategic field for the multinational extractive companies has emerged as the companies strive to mitigate the challenges imposed by local content policies and to exploit opportunities thereof (Hansen, 2020). Multinational companies' options for responding to local content policies include (a) making decision to continue

or discontinue investment in a country that imposes stringent local content requirements, (b) favorably interpreting ambiguous local content requirements, (c) negotiating local content requirements with host governments while entering into new concession agreements or renewing existing ones, (d) finding ways around mismatches between statutory local content targets and actual local supply capacities, (e) taking advantage of weak and ineffective government institutions for enforcing local content policies, and (f) lobbying policy makers to shape more favorable local content legislations (Hansen, 2020; Ngoasong, 2014).

Local Content Strategic Management Framework

Using the responsiveness-integration model, Hansen (2020) postulated a strategic management framework for analysing multinational companies' willingness to engage in local content development based on the evaluation of four dimensions of local content associated costs and benefits namely (a) local procurement of inputs, (b) contracting with local suppliers, (c) aligning procurement per global policies and mandates, and (d) engaging in local content activities relative to competitors. Hansen argued that relative weights of the local content costs and benefits may push the multinational companies towards local responsiveness or global integrations, and proposed typology of local content strategies that multinational companies may adopt. These are (a) local responsiveness; where the benefits of global integration are low and benefits of local responsiveness are high, (b) compliance; where benefits of global integration and local responsiveness are both low, (c) global integration; where benefits of global integration are high but benefits of local responsiveness are low, and (d) transactional; where the

benefits of global integration and local responsiveness are both high. The generic local

content strategies are as shown in Figure 1.

Figure 1

Typology of Local Content Development Strategies
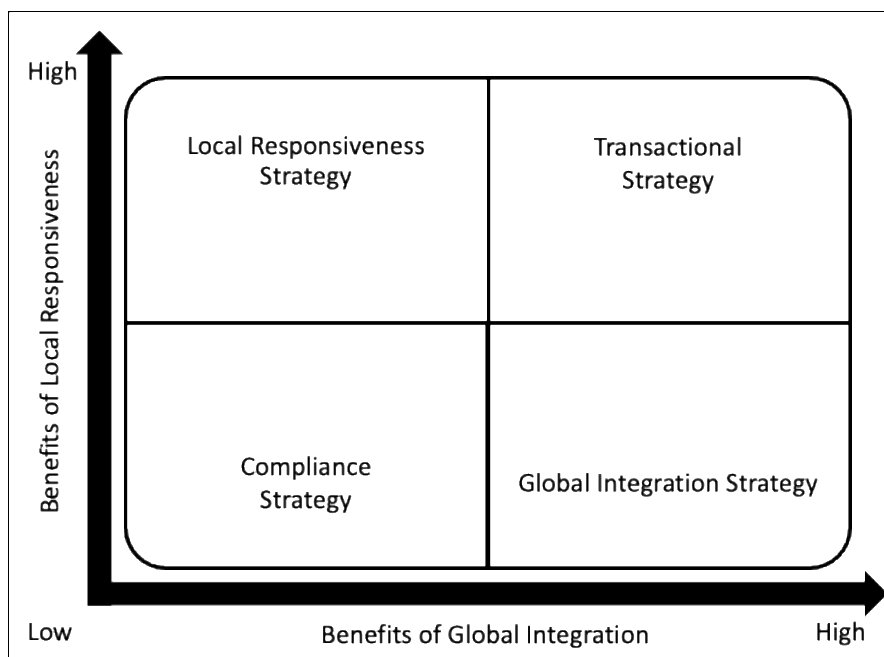
Note. Adapted from "Toward a strategic management perspective on local content in

African extractives: MNC procurement strategies between local responsiveness and

global integration" by M.W. Hansen, 2020, *African Journal of Management,* 6, p.14.

Local Responsiveness Strategy. The local responsiveness strategy is most

relevant where local content pressures from the government and host communities are

strong, capable supplier are available, and transactional cost of contracting in the local

industry is moderate (Hansen, 2020). The focus of this strategy is to align multinational

company's activities with the host country's local content policy and may require

adjustment of global procurement procedures and standards to accommodate host country

capabilities and expectations. Key benefit of locally responsive strategy is reduced local community risks, whereas a disadvantage could be loss of reputation where the company gets embroiled in local politics and business networks (Hansen, 2020).

Compliance Strategy. Multinational companies that adopt the compliance strategy focus on achieving the minimum statutory requirements. As noted by Ngoasong (2014), many multinational oil and gas companies comply with the minimum local content policy requirements and put a lot of effort in documenting their actions and initiatives for the purpose of proving compliance. This passive and reactive strategy is prevalent where the host government have stringent local content policies that are strictly enforced with serious consequences for noncompliance (Hansen, 2020). With increasing local content requirements, this strategy could be demanding and costly (Hansen, 2020).

Global Integration Strategy. The focus of global integration strategy is to align the procurement requirement of the multinational company's subsidiaries with its global mandate (Hansen, 2020). Here the multinational company has strong global leverage while operating in country with weak leverage (Hansen, 2020). The multinational company is reluctant to adapt its global standards to local conditions, will seek to negotiate local content requirements, and is willing to divest investment where the local content pressure becomes too strong (Hansen, 2020).

Transactional Strategy. With the transactional strategy, the multinational company simultaneously pursues the benefits of local responsiveness and global integration (Hansen, 2020). This strategy may entail the multinational company exploiting global competitive advantage while leveraging local content requirements in

their operational locations through development of local capabilities and long-term

partnerships (Hansen, 2020). Multinational companies that adopt the local content

transactional strategy will pay close attention to the local business environment and local

content regulations and proactively invest in developing local capabilities while

influencing perceptions and expectations among regulators and host communities

(Hansen, 2020). Even without a mandatory local content requirement, companies that

practice the transactional local content strategy see the need to grow indigenous capacity

to ensure sustainable business continuity and therefore implement local resourcing plans

and personnel training programs.

The transactional strategy is the optimum local content strategy. The companies

that pursue this strategy see local content development as business imperative for

competitive advantage whilst complying with the law of the land. Such companies see

local content requirements as lever rather than obstacles. For example, Oseghale et al.

(2018) found that capacity development training of Nigerian personnel in the Nigeria oil

and gas industry is driven by the companies' policies, general industry skills requirement,

health and safety concerns, and government regulations. According to Oseghale et al., the

need to comply with statutory requirements, such as expatriate quota restrictions that

limit the number of foreigners that can legally work in Nigeria, motivates oil and gas

companies in Nigeria to undertake training for Nigerians in order to have competent

workforce to ensure business continuity. The antecedents of the transactional strategy

include multinational company having strong dynamic capabilities and ability to

effectively transfer knowledge, the presence of local capable suppliers with strong

absorptive capacity, and host government providing enabling environment that allows multinational companies to pursue local content development on basis of interests and capabilities (Hansen, 2020).

Local Content Performance Measurement and Monitoring

Measurement and monitoring of local content development are essential tools for focusing and driving local content initiatives towards achieving statutory requirements and organizational objectives. According to Menhat and Yusuf (2018), the increased imperative to comply with local content requirement and a strategic management approach to local content creates the need for its consideration in developing key performance indicators in the oil and gas industry and need for rules and regulations as set by local content regulators to be accounted for in the supply chain performance management. With the increased trend towards outsourcing of oil and gas activities, especially to local contractors, multinational oil and gas companies need to be concerned about the performance of their supply chains (Menhat & Yusuf, 2018). In this regard, local content plans will not only comprise a program to utilize local inputs, but more importantly an action plan to develop local capacity and key performance indicators to proactively monitor performance (Menhat & Yusuf, 2018). According to Olawuyi (2019), having a clear mechanism for measuring and monitoring of local content value-add is critical. Local content performance measuring and monitoring mechanisms within the extractive companies include setting targets that align with those of the statutory regulators, documenting actual local content development actions, and conducting performance audits (Ngoasong, 2014). Having in place key performance indicators that

are monitored and measured offer the extractive company a good basis for renegotiating and adjusting local content requirements that are tough to achieve (Olawuyi, 2019).

Supplier Development Strategy

Definition and Essence of Supplier Development

Supplier development is a key element of supply chain management. It is an undertaking by a buying firm towards increasing the capability and performances of a supplier (Busse et al., 2016; Yawar & Seuring, 2020). According to Khan and Nicholson (2014), supplier development refers to buyer-initiated program aimed to improve suppliers' performances within a network of suppliers or in buyer/supplier dyads. It is an inter-firm collaboration aimed at improving competitive level (Caligano & Vaaland, 2017). Supplier development is a proven strategy with which buying firms can develop their supply bases and establish competent suppliers that will contribute to their value creation process (Kumar & Routroy, 2017a). It is a long-term business activity that consumes resources and requires commitment from both buying firm and supplier (Routroy & Pradhan, 2014). According to Friedl and Wagner (2016), supplier development is a cooperative investment, which the buying firm needs to choose carefully in order to maximize value delivery to the buyer and minimize spill over benefits to competitors who use same buyers. Supplier development activities range from low-involvement activities, such as competitive tender and regular evaluation of supplier's performance to high-involvement activities such as training of the supplier in specific skills areas or involving them in new product development (Bai & Sarkis, 2016; Chen, Ellis & Holsapple, 2015; Dou, Zhu & Sarkis, 2014). Both buyers and suppliers can

benefit from supplier development activities through improvement of supplier's delivery performance, product quality, enhancement of supplier capability and a strong buyer-supplier relationship all of which will in turn result in improved buyer performance and competitive advantage (Friedl & Wagner, 2016).

Supplier Development Framework

Supplier development program could be a direct or an indirect buying firm's initiative that is aimed to influence supplier's growth and performance improvement. The direct supplier development practices include training, on-site consultancy, and secondment of buyer personnel to supplier's facility, and so forth, and entails the buying firm committing specific resources such as finance, human capital, technological know-how, or managerial competencies towards closing competence gaps of the supplier (Meisel & Glock, 2018; Zhang et al., 2017). For the indirect supplier development, the buyer is passively involved by defining performance goals or implementing an incentive system that encourages the supplier to improve performance (Meisel & Glock, 2018). Indirect supplier development techniques include supplier assessment, recognizing supplier performance, communicating feedback, supplier facility visits, performance measurement, and supplier auditing (Zhang et al., 2017). Yawar and Seuring (2020) found that indirect supplier development mostly drives performance outcomes. A critical part of supplier development is supplier quality development, which involves assessing supplier's quality performance to understand their strength, weaknesses, and areas for improvement, and implementing measures to close the identified gaps (Noshad & Awasthi, 2018). By investing in supplier quality improvement program, supply chain

managers in the oil and gas industry will address a key concern and drawback to local content development which is indigenous contractors' inability to meet requisite technical and quality standards (Ngoasong, 2014; Nwapi, 2016; Owusu and Vaaland, 2016a; White, 2017).

Incentivizing the supplier is a key component of supplier development. The supplier incentives could be in the form of market competition that rewards suppliers based on performance in relation to others, or cooperative incentive where buyer and supplier collaborate and share benefits therefrom (Terpend & Krause, 2015). Terpend and Krause found that where buyer and supplier have a moderate level of mutual dependence, competitive incentive may be an effective tactic to improve quality, delivery, flexibility, and innovation; but that it is not effective for improving cost performance. Terpend and Krause showed that competitive incentive does not yield sustainable performance improvement, whereas cooperative incentives, where buyer and supplier work collaboratively, can achieve true cost advantage but entails additional investment cost, social capital for the buyer, requires high mutual dependence, and the result is difficult for the competition to replicate.

Effective supplier development required a structured approach. Glock et al. (2017) identified three main steps of supplier development comprising preparing the supplier development program, developing the supplier, and monitoring and controlling the supplier development initiative. At the preparation stage, the buying firm evaluates the rationale for embarking on supplier development exercise and selects the candidate suppliers using certain criteria (Glock et al., 2017). Next, the buying firm selects the

supplier attributes to improve, the supplier development measures to be used such as direct or indirect approach, and proceed with the program implementation (Glock et al., 2017). While the supplier development exercise is underway, it is equally important for the buying firm to monitor the outcome to ensure that the objectives are being met or otherwise adjust the program as necessary (Glock et al., 2017).

The mediated impact model of supplier development explains the relationship between supplier development approaches and supplier performance improvement. Using resourced-based theory and internalization theory as lenses, and the model comparison strategy (a form of structural equation modelling), Krause et al. (2000) developed the mediated impact model of supplier development, which they tested through analysis of data collected from a survey of purchasing executives in 279 manufacturing companies who were members of National Association of Purchasing Management. In the mediated impact model, Krause et al. showed that when a buying firm combines supplier assessment, supplier incentivization, and direct involvement in supplier development program, such as training of supplier's personnel and assigning buying firm's personnel to supplier's facility, a significant improvement in supplier performance can result. Krause et al. found that the use of supplier assessment and supplier incentives, such as promise of repeat patronage, have indirect impact on supplier performance improvement and need to be applied in combination with direct involvement of buying firm's personnel in supplier development, whereas the use of competitive pressure has no significant impact on supplier performance improvement.

Impacts of Supplier Development

Supplier development offers significant benefits to buying firms and suppliers. A supplier development program can improve supplier performance, enhance buyer competitive advantage, and strengthen buyer-supplier relationship thus reducing risk of opportunistic behavior (Routroy & Pradhan, 2014). Rotich et al. (2014) found that a company's competitive advantage over its rival is influenced by effectiveness of supplier development program that improves capabilities of its suppliers, and in turn helps the firm improve on quality, cost, and delivery cycle time. Supplier development is therefore an essential competitive undertaking for buying organizations and their supply chains (Bai & Sarkis, 2016). The central objective of supplier development is to establish and sustain the buying firm's competitive advantage through effective supplier deliveries (Chen et al., 2015). To achieve competitive advantage, manufacturing companies are focusing more on their core competences while outsourcing non-core activities (Routroy & Pradhan, 2014). Khan and Nicholson (2014) noted that due to their underdevelopment, suppliers in developing countries are often unable to meet the requirements of multinational buying firms. The design and execution of supplier development activities are therefore essential for local supplier performance and capability improvement, which in turn fulfil the buying firm's supply needs (Chen et al., 2015). An increasing drive for local content development, and stakeholders' demands for sustainability in supply chains make compelling case for buying firms to embark on supplier development (Rogers et al., 2019).

A buying firm's options for optimizing supply chain value delivery include supplier development, changing suppliers, or acquiring the supplier's technology. Kumar and Routroy (2017b) opined that supplier development is the most viable of the alternative approaches for improving supply chain performance. The cost of switching a supplier or acquiring its technology is relatively much higher than embarking on supplier development (Kumar & Routroy, 2017b). However, developing all the buying firm's registered suppliers may not be a viable and economical option due to associated cost, hence a need for the buying firm to focus on strategic and critical suppliers who have potential to be trusted but are currently underperforming against expectations (Kumar & Routroy, 2017b).

A key concern by buying firms regarding supplier development is its spillover benefits to the competition. Considering the possibility of buying firm's competitors reaping spillover benefits from a supplier development program embarked upon by another buying firm, Friedl and Wagner (2016) urged careful decision on supplier development investment buy the buying firm. According to Friedl and Wagner, a cooperative or joint engagement by competing buying firms in the development of a supplier invariably results in overall lower supplier development costs compared to noncooperative supplier development investments by the competing buying firms. Mohanty et al. (2014) also found that in the long run, supplier development is not only beneficial to the organizations adopting it, but also creates value for the entire country through improvement in employment opportunities and growth of the economy.

Antecedents and Pitfalls of Supplier Development

There are critical success factors that drive supplier development. Lawson et al. (2015) identified the antecedents of supplier development as supplier responsibility, skills similarity, single sourcing strategy; and the supplier development activities' consequences in respect of product, supplier, and project performance. Using game theory models Bai and Sarkis (2016) showed that supplier development investment strategies and profits are influenced by buyer-supplier relationships and anticipated investment returns. According to Bai and Sarkis, the motivation for supplier development investment activities is derived from anticipation of increasing returns to scale and marginal profit volume for buyer and supplier as well as prevalence of cooperative relationship among members of the supply chain. Khan and Nicholson (2014) also found that success of supplier development program depends of the supplier absorptive capacity: the ability to see value of new information, embrace it, and exploit it to commercial ends. The supplier's absorptive capacity can improve through interaction with buyers (Khan & Nicholson, 2014).

The parties to supplier development program need to be aware of its pitfalls. Kumar and Routroy (2017a) identified from extant literature several impediments on both sides of the buyer-supplier dyad, which the parties need to overcome for supplier development program to succeed. Some of the supplier side impediments include supplier reluctance and complacence, poor supplier capacity and flexibility, supplier's adherence to conventional practices, lack of business expectancy, large potential customer base, poor volume and valued business, lack of competent workforce, poor resource

capabilities, and supplier fraud (Kumar & Routroy, 2017a). Also, buyer side supplier development impediments include inappropriate supplier development initiative, incorrect supplier selection, poor supplier integration, poor supplier motivation framework, poor supplier evaluation and feedback, poor information exchange, and buying firm incompetence (Kumar & Routroy, 2017a). It is important for the supply chain managers to track on real time basis, the progress of supplier development programs to ascertain their effectiveness (Routroy & Pradhan, 2014).

Supplier Diversity Strategy

Related to local content development and supplier development is supplier diversity. Supplier diversity is a business policy that requires corporations to engage minority business enterprises (MBEs) as deliberate strategy to grow them whilst reaping the benefit of lower input cost and supply chain flexibility (Blount, 2020; Klocek et al., 2014). Supplier diversity is often driven by a firm's CSR focused on closing economic gap between MBEs and the corporations (Blount, 2020; Min, 2009). According to Blount and Li (2020), supplier diversity is gaining attention in the supply chain management field due to economic and social responsibility considerations and stakeholders' pressure. The objective of supplier diversity program is to create a win-win outcome for the buying organization and vendors by investing back into the community through patronage of minority business enterprises at competitive prices made possible by smaller overheads and more flexible and nimble organizational structures (Klocek et al., 2014). In the United States, companies generally implement supplier diversity programs voluntarily with focus on specific areas of need such as technology, products, or services. This

practice, which started in the United States of America in the 1960s as fallout from the Civil Rights movement, has evolved over the years to the extent that as of 2011 the MBEs owned businesses generated 1 trillion United States dollars in revenue, employed over 6 million workers, and accounted for 60% to 80% of new jobs created each year (Klocek et al., 2014).

Supplier diversity can be a critical business enabler. Richard et al. (2015) found that through supplier diversity, firms that compete in environmentally scarce industry have experienced performance gains, but the reverse is the case in the short term for firms that operate in munificent environment but do ultimately gain from supplier diversity in the long term. Richard et al. further noted that the impetus for increasing supplier diversity goes beyond the practice of CSR and is more of a business strategy driven by performance objectives. For example, Caterpillar achieved competitive advantage through supplier diversity program, saving significant sourcing cost while enhancing quality through the establishment of small business program, corporate sponsorship of local supplier development council, participation in local trade fairs, use of peer referrals, development of mentor-protégé program, and setting SMART (specific, measurable, action-oriented, realistic, and resource constrained) goals (Min, 2009). According to Min, successful implementation of supplier diversity program is driven by organizational culture characterized by business philosophy, top management commitment, and shared values.

Gaps in Literature

The review of literature indicates that local content development is a public policy that has been established in Nigeria, just as it is in other resource rich developing countries in Africa and other parts of the world. It is established that local content policy is important business strategy consideration for business leaders in the Nigerian oil and gas industry. Supplier development is a sustainable supply chain management strategy that can improve local supplier capabilities, reduce supply chain costs, improve security of supply, and increase profitability. The successes recorded with supplier diversity program in the United States of America supports the thesis that there is business value in pursuing local supplier development as a strategic business imperative that will create competitive advantage in the long term.

A key gap found from the literature is absence of research on strategies that supply chain managers in the Nigeria oil and gas industry are using to increase local content development and how such strategies are linked to overarching supply chain management strategies. Ngoasong (2014) identified technical capacity development and human capacity development as broad business framework and 4 thematic pillars that define multinational oil and gas companies' response to local content requirement. While the findings provide useful insights on broad strategies that the multinational oil and gas companies use, these are high level and do not offer specific tactical actions that a supply chain manager can replicate. While the conceptual model, which Owusu and Vaaland (2016b) developed also provides useful additional insights on antecedents of local content development by highlighting key actors and necessary interrelationships, it does

not also provide specific actionable strategies that the supply chain manager can use.

Hansen (2020) proposed a typology of local content strategies for multinational

extractive companies but omitted a recommendation of specific actionable initiatives that

supply chain managers may adopt. The objective of this study was to close this

scholarship gap by building on the extant literature and exploring from the lived

experiences of the supply chain managers in the leading multinational oil and gas

companies in Nigeria oil and gas industry, actionable strategies for increasing local

content in processes and products.

Transition

In Section 1, I introduced the objective, scope, methodology, and background

literature that underpin the doctoral study under various subsections namely background

of the study, the problem statement, the purpose statement, the nature of the study, the

research questions, operational definition, and the conceptual framework. I also discussed

assumptions that underpin the doctoral study, the significance of the study, and presented

a review of academic and professional literature that provide foundation for the study.

Lastly, I summarized the key discussions and a look ahead for Section 2.

There is a growing trend in the use of local content policies by resource rich

countries. Nigeria, like other oil and gas resource rich countries, implemented a local

content development policy in 2010 with the objective of stimulating growth of

participation of Nigerians and Nigerian companies in the exploitation of the oil and gas

resource and retention of greater proportion of the industry annul spend of over 8 billion

United States dollars in the Nigerian economy to stimulate growth of the economy

through cross-sectorial linkages (Ovadia, 2013b). The local content performances of companies operating in the Nigeria oil and gas industry are well below the targets set by regulators. The focus of the study is the multinational oil and gas companies who account for over 80% of the Nigeria oil and gas daily production.

The multinational oil and gas companies can profit from a strategy that aligns business priorities and local content requirements, by analysing the value chains for projects' and operating assets' needs for goods and services, and local capacity to achieve them, and implementing measures to close the gaps between demand and supply (International Finance Corporation et al., 2017). Supplier development is an essential competitive undertaking for buying organizations and their supply chains (Bai & Sarkis, 2016), and aligns with the essence of local content development. The essence of supplier diversity programs is to create a win-win outcome for the buying organizations and minority owned businesses by patronizing these start-up companies at competitive prices and investing back into the community through patronage of minority business enterprises (Klocek et al., 2014). The concepts of supplier development and supplier diversity are aligned with local content development objectives.

Given a growing trend of oil and gas resource rich countries using mandatory local content policies to influence increase in local participation and stimulate economic growth, it is surprising that there is very limited research on effective strategies that multinational oil and gas companies use to increase local content of their process and services. The purpose of this qualitative multiple case study is to contribute towards filling this scholarship gap. I approached the study with the lenses of local content

development framework (Kazzazi & Nouri, 2012) and the mediated impact model of supplier development (Krause et al., 2000).

In Section 2, I discuss the research methodology and design, the role of the researcher, the proposed participants, sampling population, and ethical research. I also cover in Section 2 the instruments and techniques that I used for data collection, data organization techniques, analysis of data, and data reliability and validity. Finally, in Section 3, I discuss the key findings from the study, the limitations of the study, recommendations for further studies, contributions to professional practice, and implications for social change.

Section 2: The Project

In Section 2, I present a detailed description of the multiple case study design for the study, with subsections on the purpose statement, my role as the researcher, the study participants, the research method and design, the sampling population, and ethical research. I also discuss the data collection instrument, data collection technique, and data organization technique. I further discuss the plan for data analysis and tactics for ensuring reliability and validity of the data.

Purpose Statement

The purpose of this qualitative multiple case study was to explore strategies that supply chain managers in the Nigerian oil and gas industry use to increase local content of their processes and products. The targeted population comprised 18 supply chain managers in six multinational oil and gas companies operating in the Niger Delta region of Nigeria, and three managers in the NCDMB who have successfully implemented strategies that increased local content of their processes and products. However, the actual participants were seven supply chain managers in four multinational oil and gas companies and one manager in the NCDMB. The implication for social change is an impetus for leaders in oil and gas companies to take purposeful actions towards achieving the objectives of the Nigerian local sourcing policy, which may create more employment in Nigeria and improve the quality of living in the region.

Role of the Researcher

In a qualitative study, the researcher is responsible for data collection, analysis, and interpretation to understand and make sense of phenomenon being researched

(Kornhaber et al., 2015;). Qualitative case study design affords the researcher deep

insights, enabling in-depth investigation of a phenomenon from various perspectives (De

Massis & Kotlar, 2014). According to Yin (2012), qualitative case study design requires

the researcher to participate in the research process as data collector. The qualitative

researcher also interprets the data collected through personal lens (Ho, 2012). According

to Pezalla et al. (2012), being an instrument in unstructured or semistructured interviews,

the researcher's attributes can influence data collection in a positive way. Pezzalla et al.

recommended training of interviewers to improve their skills.

The use of bracketing entails the researcher identifying and setting aside their own

assumptions, biases, and preconceptions about the phenomena at the beginning and

throughout the study in order to mitigate likelihood of contamination or misinterpretation

of data collected from the field (Joslin & Müller, 2016; Kornhaber et al., 2015; Levitt,

Motulsky et al., 2017). Bracketing enables the researcher to focus completely on the

viewpoints of the participants without prejudice during interviews (Sorsa et al., 2015).

Being a contracting and procurement professional with experience developing a Nigerian

content plan for a multinational oil and gas facility project, I have personal

preconceptions and biases that had the potential to skew the study. Therefore, before

commencing the data collection, I documented my personal assumptions, preconceptions,

and biases about the research subject matter and consciously checked that they did not

influence the data collection and interpretation by avoiding making any judgements

regarding appropriateness of data offered by participants (See Appendix A).

Participants

In qualitative research, the researcher examines the phenomenon from the perspectives of participants (Kemparaj & Chavan, 2013). The role of participants in the research process may be considered as pitched somewhere along a continuum, ranging from passive informant to agent in partnership with the researcher (Enosh & Ben-Ari, 2016). Aluwihare-Samaranayake (2012) emphasized the need for ethical compliance in recruiting participants, by putting their wellbeing first and ensuring that they are fully aware of what they are getting involved in by using ethical consent form. It is the ethical duty of the researcher to avoid asking participants inappropriate questions or coercing them to reveal information they may be unwilling or unprepared to share.

The primary participants in this study were seven contracting and procurement managers in multinational oil and gas companies and one manager in the NCDMB, who were directly responsible for formulating, modifying, and implementing supply chain management strategies. The participants were purposively selected. The use of purposive sampling enables the researcher to select participants based on their prior theoretical knowledge of the subject matter being studied (Robinson, 2014).

Research Method and Design

According to Fusch et al. (2017), the use of appropriate research study design is a pathway to a well-written doctoral study. As indicated in the purpose statement, I selected qualitative multiple case study design for researching the stated problem. In this section, I discuss the research method and design in detail and elaborate on their rationale and alignment with the research question.

Research Method

The qualitative research methodology is premised on the belief that there are several views of reality based on individual perspectives, and the researcher, being part of the research process, needs to interact closely with the participants (Dodgson, 2017). Qualitative researchers, being key instruments for data collection and using an inductive process, seek to understand how people make sense of their experiences and construct their worlds (Butina et al., 2015). Data collected in participants' own words reflect their personal perceptions of associations and categorization of the phenomenon being investigated (Coenen et al., 2012). According to Mohajan (2018), the use of open-ended enquiry in qualitative research can reveal new or unanticipated phenomenon. Parker (2012) posited that a qualitative research method is suitable for a research in which variables are either unknown or not measurable. The qualitative research methodology was most appropriate for this study because the variables of the research question are mostly unknown and difficult to measure and require collection of contextual information from supply chain managers in the Nigeria oil and gas industry.

Quantitative research encompasses a series of methods involved with the logical investigation of social phenomena using numeric or statistical data and relies on the assumption that the phenomenon under study is measurable (Watson, 2015). When the study involves testing of hypotheses or theories that explain variables, the quantitative method is the appropriate approach (Hunt, 2014). The quantitative methodology was not suitable for this study given that the variables are not easily measurable, the research

question does not call for collection and analysis of numeric or statistical data, and testing of hypotheses or theories is not required.

In the mixed method research approach, the researcher combines both qualitative and quantitative methodologies (Frels & Onwuegbuzie, 2013; McManamny et al., 2014; Petticrew et al., 2013). This approach is most appropriate for research questions that can be fully answered by neither quantitative nor qualitative approaches alone (Chiang-Hanisko et al., 2016). The mixed method approach was not necessary for this study given that the research question neither called for examining variables' relationships or differences through statistical analysis, nor was it of such complexity that the use of qualitative approach alone was inadequate.

Research Design

The use of case study design enables the exploration of various sources of information such as participants' responses to interview questions, observations, and materials, as found in the field (Hyett et al., 2014; Yin, 2014). Case study was most suitable design for this study because its use offered maximum flexibility compared to other qualitative research designs. A multiple case study design enabled the collection of contextual data from supply chain managers in the multinational oil and gas companies to obtain broad insights on the strategies that they are using to increase local content in their organizational processes.

With the phenomenological design, the researcher seeks, through close connection with the participants—including their language, to describe the meanings of lived experiences of the participants and develop an account that precisely matches the

participants' experiences (Gill, 2014; Hunt, 2014). Answering the research question for this study did not require an understanding of the meanings of the lived experiences of the participants. The phenomenological design was therefore not suitable.

The ethnographic design is an inductive research process where the researcher carries out an in-depth study of groups, neighborhoods, or businesses through long-term involvement in the field, and where the researcher's personal involvement is needed for a greater understanding of the complexities (Cunliffe & Karunanayake, 2013). Ethnography draws on the researcher's ability to access the participants' environment, conceptualize, and make sense of participants' experiences (Yanow, 2012). It entails immersion of the researcher into the daily lives and activities of the participants within a culture or community (Down, 2012). The ethnographic design was not suitable because the research problem did not require an in-depth study of any individual or entity for a long period.

The narrative research design is useful when a study requires telling stories of ordered life experiences of research participants in a narrative manner (McMullen & Braithwaite, 2013; Stephens & Breheny, 2013). Although I addressed the problem through obtaining and exploring the participants' stories, the focus of this study was not to tell the story. I therefore found narrative design unsuitable for researching the problem statement.

Population and Sampling

The targeted sample population for this study was 18 supply chain managers and senior supply chain management leaders in five multinational oil and gas companies

operating in the Niger Delta and three managers in the NCDMB, who have been

successful in implementing local content development strategies. However, the actual

participants were seven supply chain managers in four multinational oil and gas

companies, and one manager in the NCDMB. The participants were selected through

purposive sampling. The rationale for using purposive sampling was to ensure that

selected participants have the requisite lived experiences that are relevant to answering

the research question (Lucas, 2014). The use of purposive sampling enables the

researcher to select cases participants who have deep knowledge and information on the

phenomenon and thus facilitates its in-depth study (Etikan et al., 2016; Parton, 2015). In

selecting the participants through purposive sampling, the researcher leverages prior

knowledge of the field and relationship with members of the target population (Barratt et

al., 2015). A key weakness in the use of purposive sampling in a study is that

generalizing the outcome to a wider population is usually problematic (Barratt et al.,

2015). The alternative sampling technique is probabilistic or random sampling, the use of

which has the advantage of minimizing bias and increasing generalizability because the

researcher is not entirely in control of selecting the participants (Palinkas et al., 2015).

Answering the research question required an aggregation of all the various viable

strategies that supply chain managers in multinational oil and gas companies in the Niger

Delta are using to increase local content in their processes and products; hence, the

probabilistic sampling technique was not suitable for selecting participants that would

provide the required information for this study.

The criteria for selecting participants were the individual's knowledge and ability to explain the phenomenon within the context of the bound case or environment. Individuals who are designated as supply chain managers or senior supply chain management professionals or have similar titles in the multinational oil and gas companies are deemed supply chain management subject matter experts. I recruited participants from this group.

Data saturation is the point in data collection process where there is sufficient information to replicate the study (Fusch & Ness, 2015). Kornhaber (2015) posited that saturation demonstrates research rigor and supports validity. According to Marshall et al. (2013), there is no generally accepted rule for data saturation in qualitative method, but the saturation point could lie somewhere between 15 and 30 interviews for single case study. Some case study researchers have reported data saturation with three to four interviews (Marshall et al., 2013). O'Reilly and Parker (2013), however, argued that quality of data and transparency of the process are more important than attaining data saturation considering that there is no absolute data saturation point as every individual is different and will always have varying perspectives. The plan was to achieve data saturation through interview of 24 respondents comprising three supply chain managers in each of the six multinational oil and gas companies and the NCDMB, however, primary data were collected from eight respondents in four multinational oil and gas companies and the NCDMB. This is still within an acceptable data saturation range (Marshall et al., 2013).

Ethical Research

Researchers must deal with ethical challenges such as emotional issues that could arise during data collection from participants in the field, self-disclosure, and management of various risks associated with the research (Aluwihare-Samaranayake, 2012). Ethical research concerns also range from questions about relevance of a research (Gennaro, 2014) to research process not measuring up to the highest acceptable standard of practice such as not disclosing details of methodology, poor research design, use of flawed data, inappropriate citation and referencing, absence of informed consent, and so forth (Honig et al., 2014). In this subsection, I describe the steps that I took to comply with acceptable ethical research standards.

The informed consent, anonymity, and confidentiality are core concepts of most professional and institutional governance (Elovici et al., 2014). Accordingly, the key ethical consideration for this study was a strict adherence to the three tenets of the Belmont Report namely the respect of persons, beneficence, and justice (Ferreira et al., 2015; National Commission for Protection of Human Subjects in Biomedical and Behavioral Research, 1979). In line with the Belmont report and the United States Code of Federal Regulations Title 45, Part 46 (US Department of Health and Human Services, 2009), I did not recruit participants from the vulnerable population, and I commit to protecting all human subjects that participated in this research. Participants are supply chain managers and other leaders involved in local content development in the multinational oil and gas companies and the NCDMB. I complied with the ethical research code per the IRB (Approval no. 04-17-19-0542585, dated March 25, 2020) in

recruiting participants, ensuring that each signed the consent form before participating in data collection. As noted by Ahmed and Ahmed (2014), the primary rules of ethics in interview are to keep the participants fully informed about subject matter including the intent to publish the outcome, maintain confidentiality, and allow them the freedom to withdraw participation at any time before the study is published. The informed consent process involved an upfront disclosure of the purpose of the study, the participant's voluntary indication of willingness to participate, and my commitment to protect participants by maintaining confidentiality of information provided by the participant (Tam et al., 2015). In analyzing the data and presenting the findings, I have ensured the confidentiality of participants by using pseudonyms and removing any information that can lead to identification of individuals involved in the study. I will continue to protect the confidential information by keeping such information in safe place for a period of 5 years and thereafter destroy it.

I used member checking to assure construct validity of data collected from the field. Member checking entailed sharing drafts of synthesis of the interviews with participants to double check for accuracy and consistency (de Massis & Kotlar, 2014). I used the bracketing technique to document my personal preconceptions and biases on the subject matter to ensure that they do not contribute to contamination or misinterpretation of the data collected from the field (See Appendix A).

In line with the commitment I made in the letters to the participating companies, the approved ethical consent, and in accordance with the principle of justice and beneficence per the Belmont report, I will make available the outcome of the study to the

companies that participated in the study. I will provide the participant companies access to the published Doctoral Study in addition to an executive summary. I will also offer to make presentations to the companies on the findings and recommendation from the study.

Data Collection Instruments

As the researcher, I was the main instrument for collecting primary data in this study through interviews based on semistructured interview questions, observations, and collection of relevant secondary data from the field. I issued formal letters to participants to explain the purpose of the study, the role of the participants, and the interview protocol. I also required each participant, as prerequisite for participation, to read, understand, complete, and endorse the informed consent form.

According to de Massis and Kotlar (2014), the best mitigation of interview data challenge, especially bias, is the use of multiple well-informed interviewees who view the subject matter from different perspectives. The likelihood of the various participants collectively engaging in impression management or convergent retrospective sensemaking is low (de Massis & Kotlar, 2014). Interview data bias may be further mitigated through use of direct observation of the participants and nonparticipant observation of the organisation during the interviews, meetings, and informal discussions (de Massis & Kotlar, 2014).

Member checking is useful in validating the accuracy of the synthesis of data collected through interview (de Massis & Kotlar, 2014; Komhaber et al., 2015). However, it is recognized that member checking has limitations such as participants having difficulty in understanding abstract synthesis necessary for comparing their inputs

with coded categorical analyses; participants agreeing with the research interpretations in order to appear cooperative; participants not investing sufficient time to review analyses; difficulty in establishing whether participants' responses imply agreement or disagreement; asking questions which respondents find difficult to disagree; participants' concern about possible wider social and political consequences of agreeing or disagreeing with a point of view; and dilemma on how to deal with participants' disagreement with the analysis of their contributions (O'Reilly & Parker, 2013).

Data Collection Technique

Per Leedy and Ormrod (2013), the author is responsible for determining the most effective techniques for collecting data in a case study. I obtained Walden University Institutional Review Board's approval before starting the data collection process. The case study methodology supports the use of multiple sources of evidence, which include interviews, researcher's observations, participants' observations, company documentation, and archival records (Yin, 2014). I used within-method triangulation, which entails the use multiple data collection technique within the qualitative case study design (Daher et al., 2017; Fusch & Ness, 2015; Joslin & Muller, 2016). Accordingly, I collected secondary documents from some of the participants' companies, such as annual plans and performance reports on local content development, supplier development, and CSR. I also collected Nigerian oil and gas industry local content performance data and foreign direct investment data from the NCDMB websites.

The primary sources of data were the interview of participants and a written response to interview questions. Interview is the most popular data collection method for

qualitative case studies (Yin, 2017). I used semistructured interviews, which is based on open-ended questions that elicit in-depth information from participants. According to Kallio et al. (2016), the semistructured interview method is flexible, enables reciprocity between interviewer and participant, and allows the interviewer to improvise follow-up questions based on the participant's responses. Kallio et al. found that the use of semistructured interview developed through a rigorous guide contributes to more objective, trustworthy, and credible research outcome. I carried out six face-to-face interviews and one telephone interviews, while one participant submitted written responses to the interview questions. The face-to-face interviews were held in the participant's offices. The use of telephone interview for data collection became necessary due to prevailing social distancing protocol as a result of the Covid-19 pandemic. Drabble et al. (2016) found telephone interviews to be viable qualitative data collection technique and particularly advantageous for carrying out follow up interviews with geographically dispersed respondent. Furthermore, Zhang et al. (2017) found no statistical difference between conducting a face-to-face interview and a telephone interview. I documented the participant's informed consent before starting the interviews. I sought the participants' permission to record the interviews for purpose of checking accuracy of the interviews notetaking and transcriptions.

The advantage of using interview in data collection is access to deeper information and knowledge, which are otherwise not reachable through other forms of data collection (Bryman & Bell, 2015). However, the disadvantage is the relatively

longer duration it takes to collect the data compared to use of questionnaire survey (Karim et al., 2014). The lengths of the interviews were 1 hour.

According to de Massis and Kotlar (2014), the credibility of academic research can be enhanced through the use of multiple data sources. In this regard, I collected available relevant secondary data from the participants such as company reports and journals containing information on strategies and performances in respect of local content development, supplier development, and CSR. By triangulating data from various sources, I hoped to achieve a more holistic research outcome (de Massis & Kotlar, 2014).

Data Organization Technique

Maslch and Salterio (2016) posited that effective data organization is anchored on the use of a sound tracking process during data collection in the field. Nyaribo (2013) recommends maintaining a research journal of data collection, which includes date, time, material obtained, interview questions and corresponding responses from participants; nonverbal cues; the interview settings; and any unusual happening during the interview. Effective data organization also entails a review of the data collected in order to eliminate those that do not conform with the research criteria before proceeding with the analysis (Berazneva, 2014; Chu & Llyas, 2016; Ogoi, 2017).

I saved the interview data in MP3 audio recordings, Microsoft Word, and PDF. I uploaded the data into the NVivo qualitative analysis software and used the coding tool in NVivo to organize the data into themes and subthemes. I saved the raw data and their analysis in DVD disks and will store them in a secured place for 5 years. I similarly organized data collected in hardcopies and will store them in the locked cabinet.

Data Analysis

An effective qualitative data is key to making meaning from the diverse insights shared by participants in the study. I adopted the 5-steps data analysis process comprising (a) compiling the data, (b) disassembling the data, (c) reassembling the data, (d) interpreting the data, and (e) drawing conclusions based on the analyzed data (Castleberry & Nolen, 2018). I used a form of the key words in context (KWIC) data analysis technique, which entailed the clustering of the relevant key words along emerging themes and developed synthesis of the strategies that leaders in the oil and gas industry are using the increase local content.

The use of within methodological triangulation in the data analysis is necessary for enhancing quality of the data analysis. Methodological triangulation entails analysis of multiple forms of data collected from different sources but within a given research method (Anney, 2014; Heale & Forbes, 2013; Hoque et al., 2013; Heale & Forbes, 2013). I used multiple data from interviews, observations, and various secondary sources such as business plans and reports.

Reliability and Validity

Assuring reliability and validity of the research outcome by adopting sound processes and frameworks is critical for legitimizing a qualitative research (Yin, 2012). The qualitative researcher strives to demonstrate reliability of a research in four aspects namely (a) credibility, (b) confirmability, (c) dependability, and (d) transferability (Elo et al., 2014). According to Houghton et al. (2013), the use of research strategies that achieve

credibility, dependability, transferability, and confirmability will achieve research rigor

and assure reliability and validity of the research outcome.

Reliability

The believability and value of the research are factors of its credibility, which

derive from the way and manner the research is conducted (Houghton et al., 2013). The

use of methodological triangulation enhances credibility and transferability of the

research outcome (Hussein, 2009). The use of member checking helps to validate and

assure trustworthiness of the primary data collected through interview (Fusch & Ness,

2015; Maslch & Salterio; 2016). The use of data saturation principle further enhances

quality and credibility of the data collected. Rigor in sampling and data saturation assures

thoroughness, which is a criterion for validity (Elo et al., 2014). Data saturation is

achieved when new themes no longer emerge from additional data sets collected from the

field (Houghton et al., 2013).

According to Peyrovi et al. (2014), the researcher guarantees the dependability of

a research by ensuring credible data collection and analysis. A research outcome that is

easily replicable is dependable (Mangioni & McKerchar, 2013; Peyrovi et al., 2014).

Replicability is enhanced through research rigor that includes detailed process

description; strictly following the design; keeping good audit trail; and making available

documentary evidences and bases for data interpretation (Moore & Prentice, 2013;

Peyrovi et al., 2014).

Validity

Internal and external validity are components of quality in research (Odegard & Bjorkly, 2012). According to Yilmaz (2013), credibility, confirmability, and transferability are key elements of research quality. The credibility of the research outcome is assured through accurate rendering and interpretation of data collected from the field (Zachariadis et al., 2013). Zachariadis et al. described three broad categories of validity in a qualitative research namely design validity, analytical validity, and inferential validity.

Design validity is broken down into (a) descriptive validity, which considers the accuracy of objects, events, behaviors and settings as reported; (b) credibility of the results based on analysis of data collected from participants; (c) transferability of the research outcome by it being generalizable to other research settings (Zachariadis et al., 2013). Analytical validity includes (a) theoretical validity, which is concerned about alignment of theoretical explanation with the data collected; (b) dependability of the research through accurate account of changes in the research setting and how that affects the research approach; (c) consistency in verifying steps of the research process; and (d) plausibility of the study, which is about alignment of the findings with the data analyzed (Zachariadis et al., 2013). Finally, inferential validity comprises (a) interpretive validity, which refers to accuracy in interpreting the participants' views; and (b) confirmability of the results by others who are external to the study (Zachariadis et al., 2013).

The use of multiple sources of evidence through methodological triangulation such as a combination of interviews, member checking, and direct observations improves

credibility of the research outcome (Houghton et al., 2013; Moore & Prentice, 2013). As illustrated by Cope (2014), the use of member checking enhances validity of the study. Also as noted by Koelsch (2013), member checking can be a reflexive process for both the researcher and the participants and therefore useful in revalidating the reality. Also, the achievement of data saturation during data collection will ensure that sufficient data is collected from the field and contribute to assurance of the validity of the study (Fusch & Ness, 2015).

Research dependability in qualitative research is a factor of data stability and is similar to reliability in quantitative research (Houghton et al., 2012). A research outcome is more dependable to the extent that it is transferable by being applicable to similar situations or contexts, or a broader or different population (Elo et al., 2014; Houghton et al., 2012; Marshall & Rossman, 2016). Yin (2012) argued that a case study researcher depends on analytical generalization of results to broader theory, while Marshall and Rossman viewed that it is other researchers who determine the transferability of the set of findings.

The implementation of a confirmability strategy by the researcher makes it possible for other researchers to verify and corroborate the research findings (Moore & Prentice, 2013). According to Elo et al. (2014), the confirmability of a research outcome depends on the degree of objectivity of the data. The data objectivity is enhanced through detailed documentation of audit trail of the data collection process (Peyrovi et al., 2014).

Transition and Summary

In Section 2, I rehashed the purpose of this qualitative multiple case study design, which is to explore strategies that supply chain managers in the Nigerian oil and gas industry use to increase local content of their processes and products. I discussed my role as the researcher; the participants, which comprised contracting and procurement managers in multinational oil and gas companies; and the research method and alternatives approaches not considered; the sampling population; and research ethics that underpin the study, including use of informed consent among others. I also discussed the data collection instrument, technique, and organization; as well as data analyses and research reliability and validity.

Using a qualitative multiple case study design, I explored the strategies that supply chain managers in Nigeria oil and gas industry use to increase local content of their processes and products. Consistent with case study methodology, I was responsible for collecting data from the field, and in doing so took steps to minimize personal biases by using the bracketing technique. The target participants were supply chain management subject matter expert groups in the selected multinational oil and gas companies. Data collection, which was primarily through interviews using semistructured open-ended interview questions, was in line with the IRB approved ethical research process, which includes among others the use of informed consent and ensuring confidentiality of the data. I further took appropriates steps to ensure reliability and validity of the data collected and their interpretation including the use of member checking to verify

transcription and interpretation of interview data, bracketing my personal biases, and the use of triangulation in data analysis.

In Section 3, I discuss the findings from the study, their application to professional practice and implication to social change. I also make recommendations arising from the study and propose areas for future study. Finally, I wrap up the study with general reflections, and concluding remarks.

Section 3: Application to Professional Practice and Implications for Change

The purpose of this qualitative multiple case study was to explore strategies that supply chain managers of multinational oil and gas companies in Nigerian use to increase local contents of their processes and products. The target population was supply chain managers in the multinational oil and gas companies in Nigeria and the local content statutory regulator, NCDMB, who are directly involved in local content development. The eventual participants in the study were four multinational oil and gas companies and the NCDMB. Two multinational oil and gas companies that were targeted did not issue letters of cooperation as required by the IRB despite several correspondences and direct contacts with their senior managers, and hence they did not participant in the study. Because of delays in securing letters of cooperation from the target oil and gas organizations and finding schedules convenient to the respondents, data collection spanned from June 2019 to May 2020. I collected primary data using open-ended questions during six face-to-face interviews and one telephone interview, while one respondent issued written response.

From the study, I found that supply chain managers in the major oil and gas companies' investments in local content development are driven by consideration of three key business value drivers: freedom to operate, local content performance recognition, and input cost savings. The multinational oil and gas companies adopt a mix of strategies that include the adoption of corporate local content policies and framework, capacity development initiatives, supplier development, financial support to indigenous companies, collaboration among oil and gas companies, facilitation of original equipment

manufacturer (OEM) domestication, and research and development. Monitoring and measurement of local content development are critical for local content development. The results of the study suggest that the most effective local content development strategies are capacity development initiatives, industry collaborations among oil and gas companies to increase local content, and measurement and monitoring of local content development. Also, from the findings, supplier development initiatives appear to be less effective as a local content development strategy in the Nigeria oil and gas industry.

Presentation of the Findings

The overarching research question was about the strategies that supply chain managers in the Nigerian oil and gas industry use to increase local content in their companies' processes and products. Using semistructured interview questions, I collected data from eight respondents in four multinational oil and gas companies and the NCDMB. In line with ethical requirement to protect the identifies of the participating organizations, they are herein referred to as Companies A, B, C, D, and E. Three respondents were recruited from Company A, two respondents from Company B, and one respondent each from Companies C, D, and E. The respondents are herein identified as Respondents A1, A2, A3, B1, B2, C1, D1, and E1.

Using the NVivo qualitative analysis software, I organized the data into themes and subthemes based on related keywords and phrases from respondents' answers to the interview questions and from secondary data collected. The main themes comprise key points that were mentioned by at least six of the eight respondents (75%) or documented in the participant organization's publications. The subthemes comprise points raised by

between three respondents (38%) and five respondents (63%) and which relate to a main

theme. In the table in Appendix B, I present a summary of the qualitative data that

morphed into the main themes and subthemes presented in this study. The main themes

are (a) business imperative for increasing local content development, (b) overarching

strategies for improving local content development, (c) monitoring and measurement of

local content development strategy effectiveness. Figure 2 depicts the main themes and

subthemes of the strategies for improving local content development in the Nigeria oil

and gas industry.

Figure 2

Themes and Subthemes of Strategies Supply Chain Managers in Multinational Oil and Gas Companies Use to Improve Local Content in Processes and Products
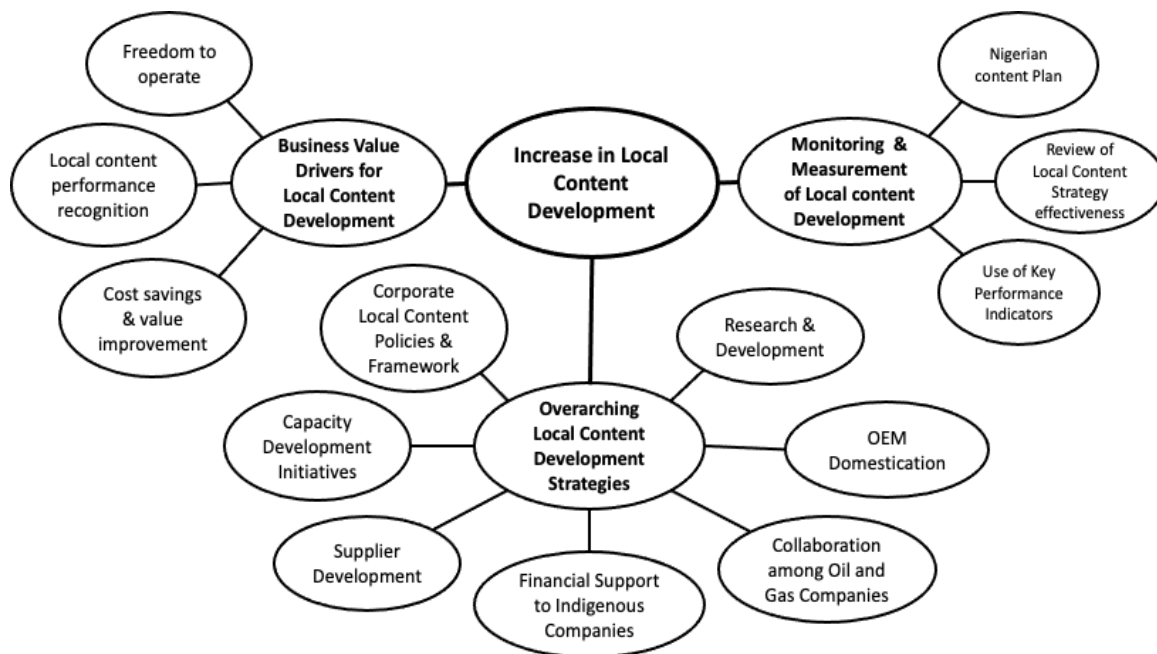
Note. The themes and subthemes were distilled from the analysis of data collected from

respondents.

Theme 1 - Business Value Drivers for Local Content Development

Business value drivers here refer to tangible and measurable contributions to the business objectives that justify a company's pursuance of local content development. The business drivers answer the "what is in it for us?" question. Seventy-five percent of the respondents discussed aspects of this subtheme. The main subthemes here are freedom to operate, local content performance recognition or goodwill, and input cost savings. According to Respondent A1, local content is viewed by senior leadership of Company A as a business imperative for business sustenance.

Subtheme 1.1 - Freedom to Operate

Sixty-three percent of the respondents (Respondents A1, A3, B1, C1, and E1) indicated that pursuit of local content development contributes to business stability by assuring "freedom to operate" or "social license to operate" for the business. The term *freedom to operate* or *social license to operate* is a subsisting acceptance and approval from local communities and stakeholders whose environment is impacted by the activities of the company (Melé & Armengou, 2016; Smits et al., 2017). In the Nigerian oil and gas industry, freedom to operate have become popular phrase for describing peaceful and cooperative relationship between an oil and gas company and the host communities or government authorities, which enables the oil and gas company to conduct its business without hinderances. Youth restiveness in the Niger Delta region is a violent response to perceived neglect and injustice felt by the oil and gas resource host communities (Elum et al., 2016). Studies have shown that such disruptions are largely reduced or completely abated when the oil and gas company is perceived to sincerely

solicit and encourage fair participation of members of host communities in the oil and gas

business through employment and the supply of input materials and services. Securing

freedom to operate from the host communities in order to minimize youth restiveness is

therefore a key motivation for oil and gas companies embarking on social investments

and local content development. Respondents B1 and B2 particularly underscored this

business imperative by highlighting that owing to the involvement of communities in its

operations, the Company B's facilities are never impacted whenever host community

youths vandalize the facilities of other multinational oil and gas companies in the same

vicinity.

The term *freedom to operate* also refers to being in good working relationship

with the NCDMB (the statutory regulatory body for local content), and other stakeholders

such as the joint venture partners, industry interest groups such as Petroleum Technology

Association of Nigeria (PETAN), Oil and Gas Trainers Association of Nigeria

(OGTAN), Manufacturers Association of Nigeria (MAN), who have vested interests in

local content development and who could disrupt or influence disruption of the

operations of multinational oil and gas companies that do not comply with the Nigerian

content law. The NCDMB has statutory powers to impose a fine of 5% of project value

or to cancel a project that fail to comply with Nigerian content law. According to

Respondent A1, the compliance with local content regulatory requirements elicits prompt

approvals by regulators and joint venture partners and thus contributes towards

contracting cycle time optimization, which in turn could contribute to early project

onstream and earnings from the oil and gas assets. The companies that emphasize the

assurance of freedom to operate may be approaching local content from the perspective of risk management and minimum compliance with regulatory requirements (Ngoasong, 2014). The additional direct and indirect costs that result from disruptions by dissatisfied stakeholders such as host communities or NCDMB imposed fine or project cancellation represent significant business risks for the organization and therefore a strong justification to pursue local content development.

Subtheme 1.2 - Local Content Performance Recognition

Local content performance award recognitions by the NCDMB or other key stakeholders in the oil and gas industry (such as PETAN and OGTAN) are invaluable assets for the multinational oil and gas companies. Such recognitions are goodwill: intangible assets that can contribute to the organizations' profitability (Podhorska et al., 2019). Thirty-eight percent of the respondents (Respondents A1, A3, and E1) mentioned this value driver. According to Respondent A1, Company A is a proud recipient of NCDMB and PETAN awards for outstanding local content performances in 2018 and 2017 respectively. Respondent A3 highlighted that evidence of compliance with the NOGICDA and track record of good performance in the execution of local content development initiatives could enhance the multinational oil and gas company's bid for the award of oil block contracts by the Nigerian government. With the rise in resource nationalism (Arbatli, 2018; Jasimuddin & Maniruzzaman, 2016) and the increasing number of Nigerian indigenous companies now bidding for oil blocks, there is increased pressure on the multinational oil and gas companies to demonstrate commitment to growing local content. Respondent E1 indicated that Company E's local content strategy

is driven by a vision of being recognized as a petroleum company that works best to foster competence and competitiveness among Nigerian indigenous contractors and suppliers through adoption of participatory and partnership model.

Subtheme 1.3 - Input Cost Savings and Value Improvement

Sixty-three percent of the respondents (Respondents A1, A3, B1, C1, and D1) mentioned input cost savings for the oil and gas business as a benefit of pursuing local content development. According to Respondents A1 and A3, Company A achieved 55% cost savings through support and patronage of an indigenous company that produces nuts and bolts that are certified to international standards; 12% cost savings plus improvement of lead-time from 4 months to 4 weeks through the support and patronage of a local manufacturer for split clamps used for repair of hydrocarbon pipelines; and logistics cost savings and improved service level for helicopter services and marine vessels that fly Nigerian flag. Respondent B1 believes that localizing the supply of inputs ultimately leads to lower input costs and reduction in unit operating cost of oil and gas production. According to Respondent C1, the impact of local content development on the business bottom-line is not yet visible in Company C due to extenuating macro-economic factors such as absence of critical support infrastructure and difficulty of doing business in Nigeria, but nonetheless this respondent opined that investment in local content development will lead to lower cost in the long run. Also, Respondent D1 underscored the fact that local content development may have initial cost premium but in the long run will pay off and contribute to competitive advantage for the multinational oil and gas companies. The views of Respondents C1 and D1 about short-term cost premium are

supported by the findings of Probst et al. (2020) that local content requirement policies resulted in a marginal increase in the cost of solar photovoltaic power in India over a 4-year period.

Theme 2 - Overarching Strategies for Improving Local Content Development

The overarching strategies for increasing local content in the multinational oil and gas companies' processes and products include developing and implementing corporate local content policies and frameworks, compliance with the NOGICDA, the use of category strategy development to identify local content development opportunities, embarking on capacity development initiatives, supplier development, deliberate creation of business opportunities for local companies, financial support to indigenous companies, monitoring contractors' and suppliers' local content capacity development, and influencing OEMs to set up facilities in Nigeria. See Table in Appendix C. All the participants contributed to aspects of this subtheme.

Subtheme 2.1 - Corporate Local Content Policies and Framework

Local content development in the oil and gas industry is largely influenced by the extent of corporate level commitment as typified by an existence of overarching corporate level local content policies and frameworks that are endorsed by senior executives of the organizations. All the participants discussed aspects of this subtheme. Notably, Participants A1 and A2 underscored the fact that the overarching local content strategies for Company A are aligned with the parent group policy which requires the promotion, support, and utilization of available local resources. Similarly, Participant E1 stated that local content development in Company E is driven by corporate local content

development strategy framework. The corporate local content frameworks here refer to the organizational functions, local content policies, processes, and organizational culture that are antecedents for local content development.

Local Content Development Function. All the multinational oil and gas companies have local content development units that are responsible for coordinating the implementation of the provisions of the NOGICDA. These units are headed by senior managers who have sufficient clout to influence growth of local content in their organizations. Company A and Company B have members of the local content function on the tenders boards who ensure that contracts and procurement awards that are approved by the boards comply with the local content law requirements. In Company A and Company C, the local content development units have organizational reporting lines outside the supply chain management function, whereas in Company B, the local content team leader reports to the supply chain manager. In both variants of organizational structures for local content development, there is a focus for driving local content development. The importance of having a local content function in companies' organizational structures is underscored by the principle, which states that structure drives behavior (Molineux, 2018).

Compliance With The NOGICDA. Commitment to ensuring compliance with the provisions of the NOGICDA (the overarching local content policy statute) by the multinational oil and gas companies themselves as well as their contractors and suppliers is key to driving increase of local content in the multinational oil and gas companies' processes and products. All the participants indicated that local content development in

their organizations is driven by statutory duty and the policy of complying with extant

government policies on local content development. This aligns with Kazzazi and Nouri's

(2012) local content development conceptual framework as well as views of Ahmad et al.

(2016), Arbatli (2018), Nwapi (2016), and White (2017) that local policies drive local

content development. Compliance with the NOGICDA includes giving preference to

indigenous companies in tendering and contract award for supply of goods and services,

carrying out research and development for purpose of finding local substitutes to

imported goods and services, integration of community content into local development as

variously mentioned by the participants, and monitoring the buying company as well as

contractors and suppliers to ensure compliance with local content targets specified in the

NOGICDA and the NCDMB's guidelines. An organization can achieve the basic

minimum statutory local content development targets by simply taking steps to comply

with the letters of the NOGICDA.

Nigerian Content Planning. All companies operating in the Nigeria oil and gas

industry are required by the NOGICDA to submit, for approval by NCDMB, Nigerian

content plans, which detail the buying companies' plans to utilize and grow local content.

The process of developing robust Nigerian content plan and obtaining the approval of the

NCDMB enables the buying company to identify opportunities and develop strategies for

increasing local content in their processes and products. Nigerian content plans could be

overarching for the entire company or it could be project or operations specific. The local

content plans describe the business opportunities, intention to use locally sourced

materials, services, and personnel, and action plans to close any identified local content

gaps with respect to the requirements of the local content law. When approved, the

Nigerian content plan becomes the baseline for executing local content development

initiatives and for measuring and monitoring performance thereof. 50% of the

respondents (Respondent A1, B1, B2, and D1) mentioned local content planning as part

of local content development strategies. According to Respondent A1, local content

initiatives are carried out on basis of yearly activity plans. In addition, Company A was in

process of developing a strategic plan that is aligned with the NCDMB's 10-year

strategic plan. Respondents B1 and B2, stated that in Company B local content

development planning is carried out in collaboration with the contractors and suppliers

who perform the work. The involvement of contractors and suppliers in the development

of the local content plan will likely result in more robust plan that is more implementable

compared to those unilaterally developed by the buying company. According to

Respondent D1, the oil and gas companies carry out analyses of local industry capacity

vis-à-vis the targets set out in the NOGICDA and develop local content plans to close the

gaps.

Category Management Strategy Development. Category management is a

process through which the supply chain team carry out an in-dept analysis of products

and services category value elements (beyond consideration of modest price savings),

which involve stakeholders engagement to understand their requirements, market

intelligence on risks, cost drivers, and market trends, and formulating sourcing strategies

that align with the market realities (Landale et al., 2017). Respondent A3 stated that

Company A uses category strategy development to fish out local content development

opportunities and to formulate appropriate strategic, tactical, and operational action plans. According to Respondent A3, category management strategy development is among the most effective strategies for increasing local content as it enables the buying company to unpack and rank competing opportunities, select those that have best value potentials, and put boots on ground in developing local capacity and capabilities that meet the company's business objectives while complying with requirements of the NOGICDA. The output from the category strategy development process becomes input into strategic planning for local content development. A notable success story is steps taken by Company A to select high impact opportunities to grow local capacity for domestic air and marine transport sector services in support of Company A's offshore projects and operations.

Deliberate Creation of Business Opportunities for Local Contractors. Thirty eight percent of the respondents (Respondents A3, C1, E1) mentioned deliberate creation of business opportunities for local contractors as strategy for increasing local content. According to Respondent A3, community content is integrated into the Company A's local content planning with objective of identifying and allocating aspects of goods and services that can be performed by host community contractors and sourcing them accordingly. Respondent C1 stated that it is Company C's procurement policy to import, through indigenous contractors and suppliers, equipment and materials that are not made in Nigeria in order to encourage them to grow capacity. Similarly, Respondent E1 stated that it is Company E's local content policy to encourage the participation of Nigerian companies in the oil and gas industry through deliberate design of the supply chain

strategies, tactics, and operational action plans to uptake services and material supplies from indigenous companies and thus afford them the opportunity to grow. The encouragement of minority business participation, especially the host community owned businesses, in the oil and gas business through deliberate creation of business opportunities for local contractors aligns with the principle of supplier diversity (Klocek et al., 2014). This also aligns with IPIECA's (2016) opinion that a good local content practice fosters mutual shared value between the resource developer and local community through adoption of business strategies that can accrue stability and economic growth.

Subtheme 2.2 - Capacity Development Initiatives

All the respondents mentioned aspects of this subtheme. Capacity development initiatives are specific projects embarked upon by the buying company to build local supply capacity and capability. Capacity development initiatives are wide ranging and include support for indigenous asset ownership, support for enhancement of indigenous companies' infrastructure, support for in-country manufacturing, human capacity development, and facilitating partnerships between local companies and foreign companies to transfer technical skills. There are mandatory capacity development initiatives that are directed by the NCDMB as a precondition for approving certain sourcing strategies where the local content targets cannot be achieved due to gaps in local supply capacity. Examples are NCDMB's requirement for an oil and gas companies to execute project scopes of industrial parks, provide jetties, and support indigenous companies to acquire assets or improve infrastructure. There are also nonmandatory capacity development initiatives that buying companies voluntarily carry out in

furtherance of local content development objectives. Respondent D1 considers the execution of mandatory capacity development initiative to be among the most effective strategies for increasing local contents in the oil and gas industry given that the oil and gas companies commit to executing such initiatives within a stated time frame, whereas the execution of the non-mandatory capacity development initiatives could fall through the cracks especially when there is budget constraint.

Support for Indigenous Asset Ownership and Enhancement of Indigenous Company's Assets. Sixty-three percent of the respondents (Respondents A1, A2, C1, D1, and E1) mentioned support for indigenous companies' asset ownership and enhancement as strategy for increasing local content development. According to the respondents, providing support to indigenous companies in acquiring and enhancing operational assets has proved effective in achieving significant increase in local capacity and capability for Nigerian indigenous companies. This involves the buying company providing technical and financial support to the indigenous company to acquire requisite equipment, facilities, or technical skills in order to meet the buying company's technical specification. This strategy has elements of supplier assessment, incentivization, and direct supplier involvement per the mediated impact model of supplier development (Krause et al., 2000). The contractor is selected through a tendering process that includes technical and commercial evaluations leading up to contract award. A likelihood of repeat contracts and buying company's willingness to be deeply involved through provision of financial support or similar assistance give the supplier good incentive to improve. Moreover, the buyer's direct involvement in handholding the contractor to

ensure successful outcome protects the buyer's investment while deepening relationship between the buyer and supplier. A notable success story is the development of Caverton Helicopters Limited from a little-known startup helicopter service operator in Nigeria to a major player in the sub-Saharan Africa region. This was made possible through a contractual arrangement between the local company and the Shell Petroleum Development Company of Nigeria Limited (SPDC) that included an advance payment to enable Caverton acquire additional 11 helicopters to upgrade and expand its service capability; something that would have been difficult if this local company was to borrow the money from the financial market. The arrangement allowed SPDC to amortize the advance payments through services rendered by the contractor over the contract period. Another example of this local content development strategy is upgrading of LADOL's technical capability with support of Total Engineering and Production Company Limited, which facility was then utilized for the Egina FPSO project integration in Nigeria; a project scope that would otherwise have been carried out overseas and significant value retained abroad. Similarly, oil and gas companies have supported local community start-up enterprises to acquire marine vessels with which they provide marine transportation services to the oil and gas companies and the public, resulting in the growth of the local enterprises, value adding service delivery to the buying companies, and freedom to operate. Similarly, Company A supported an indigenous steel pipe manufacturer, SCC, to expand its capability for the manufacture of 20-inch diameter oil and gas line pipes to international standard.

According to Respondent A1, the buying company's support to local contractors and suppliers to acquire production assets and equipment is the most effective strategy for increasing local content development. This is because the strategy elicits contractor's commitment to improve being motivated by the financial involvement of the buying company and subsisting contract for uptake of the goods or services provided through the improved capacity. Also, the buying company stands to reap from the investment in developing the local contractor through improved contractor performance and earning of preferred customer status, which may accrue competitive advantage.

Support for In-Country Manufacturing. The support for in-country manufacture of oil and gas equipment such as fabrication of pressure vessels, separators, mooring buoys, line pipes, split clamps, pig traps and receivers, metering skids, and so forth, could entail the buying company accepting supply risks, paying premium price, and accepting longer delivery lead-times compared to the alternative of importing from established overseas companies. This strategy pays off as the local manufacturing companies gradually improve through repeat patronage. The buying companies' supports include working with the local company to install critical equipment, helping with sourcing of input materials, and arranging international certification. Thirty-eight percent of the respondents (Respondents A1, A2, and C1) mentioned this strategy. Company A worked with Egba Split Clamps Limited to certify its local manufacture of split clamps and then substituted local souring from this supplier against previous importation of the item. Respondent A1 stated that Company A was working with local manufacturer of bolts and nuts to identify new raw materials sources in order to improve competitiveness

of the product. Respondent C1 stated that Company C uses local companies for all fabrications in line with the NOGICDA.

Human Capacity Development. Pursuant to the NCDMB's guidelines, the oil and gas companies carry out human capacity development through training programs by themselves or through contractors, funding of tertiary institutions' academic programs, and award of scholarships to Nigerians for skills relevant to the oil and gas business. Seventy-five percent of the respondents (Respondents A1, A2, B1, B2, C1, and E1) mentioned this strategy. Company A sponsors master's degree programs for Niger Delta indigenes in areas of geology and engineering on condition that they will return to Nigeria after their studies to contribute their skills. The company also sponsors vocational training programs on the back of projects in the areas of masonry, electrical wiring, scaffolding, fitting, welding, and lifting. Every year Company B trains two batches of geosciences graduates and runs mentoring lecture sessions for final year students of the University of Port Harcourt using its technical team resources. According to Respondent B2, Company B sets aside three percent of project contract value for human capital development. Similarly, Company C supports technical education targeted at growing local skills in its areas of operation, while Company E's human capital development initiatives focus on helping local services suppliers to become self-sustainable.

As was further opined by Respondent A1, human capacity development, which is mandated in the NOGICDA, has been moderately effective as it has contributed to raising skills levels of Nigerians who are able to take up roles that were previously performed by expatriates at premium costs, but the downside of this strategy is limited employment

opportunities to retain candidates whose capacities are developed. Nonetheless, this strategy has high spillover effect as the candidates who are developed become more employable within the oil and gas industry and in other industrial sectors, and can indirectly add value to the buying company through contractors and sub-contractors that employ them, thus increasing local contents of the buying companies' products.

Facilitating Technical Skills Transfer Through Partnerships Between Local Companies and Foreign Companies. Thirty-eight percent of the respondents (Respondents A3, D1, and E1) stated that the oil and gas buying companies encourage and facilitate partnerships and alliances between local companies and foreign companies in order to leverage their technical competences to grow. In some cases, the oil and gas company play active role in midwifing the business relationships such as where the buying company procures OEM proprietary items (e.g., pumps and turbines) and require the manufacturer to provide field services representatives that are Nigerians (Respondent A3). In other cases, the oil and gas company takes more passive posture by including in tenders and contracts mandatory minimum Nigerian content requirements, which compel local companies that are deficient in technical capacity to collaborate with foreign or multinational counterparts that have the requisite technical capacity but are deficient in minimum local content (Respondents D1 and E1). The policy of contracting only with Nigerian registered companies for goods and services sourced abroad contributes to technical skills transfer to local companies.

Subtheme 2.3 - Supplier Development

All the respondents mentioned supplier development as part of strategies for increasing local content in their companies. Variants of supplier development approaches used by the companies include actively canvassing for Nigerians in the diaspora who have critical expertise in the oil and gas business to return to the country and provide such services that were previously sourced from foreign suppliers (Company A); a requirement for multinational contractors to train identified local contractors who will take over supply of the provision of such services in the future (Company B); and deliberate award of contracts to local contractors and in some cases availing them of funding (Company A and Company B).

Company A set up an internet-based Nigeria global network that brings together Nigerians in the diaspora to participate in proffering solutions to problems that would otherwise be contracted to foreigners. A typical outcome of this strategy is the domestication of equipment repairs that were previously carried out in Aberdeen, United Kingdom. As underscored by Respondent A3, category strategy development is a precursor to supplier development as the exercise is used in identifying business opportunities where development of local suppliers is most beneficial.

Company B influenced the development of local companies that took over seabed survey service, which was previously carried out by multinational companies. Similarly, Company B contributed to the development of a Nigerian company to provide integrated manpower supply services, which were previously performed by a foreign company. As part of contracts scope of work, the multinational companies were required to allow the

Nigerian companies to understudy them and provide to necessary support to enable succession after a given period. In some cases, Company B paid additional fees to make this happen.

As discussed by Respondent A3, the award of contracts to community-based contractors under the community content strategy, a subtheme of local content development, offers opportunity to develop the low-level suppliers. As further discussed by Respondent B2, supplier development is carried out as part of contract management process during which the contractors' performances are reviewed using 360-degree review template based on a set of key performance indicators and the contractor is given feedback on areas for improvement.

Generally, the data I obtained from the field do not indicate a consistent use of supplier development by the oil and gas companies as a strategic investment approach to developing local content and improving security of the supply. Whereas some respondents indicated that their companies carry out supplier development, none provided evidence of in-depth programs and well-structured approaches in developing local suppliers such as a deliberate combination of supplier assessment, supplier incentivization, and direct involvement in the development of suppliers as conceptualized by Krause et al. (2000). Contrary to expert opinions from literature about potential supply chain value improvement that results from supplier development (Routroy & Pradhan, 2014; Rotich et al., 2014; Chen et al., 2015), Respondent A1 considers supplier development to be the least effective strategy for growing local content in Nigeria. In the opinion of Respondent A1, supplier development has not been effective because local

contractors tend to expect too much from the buying companies, consider buying companies' local content development investment as their entitlements, and are generally unwilling to make financial commitment to the supplier development initiatives initiated by the buying company. Also, Respondent B1 underscored challenges with supplier development as dearth of funds to effectively support this initiative and many Nigerian business owners not being consistent in nurturing their companies to become major reliable players.

Subtheme 2.4 - Financial Support to Indigenous Companies

Lack of adequate financial capacity is a key limitation for many indigenous companies that wish to participate in the Nigeria oil and gas industry. Due to difficult and stringent lending terms, many small and medium scale enterprises are hardly able to obtain loan financing from commercial banks in Nigeria. To address this problem, some of the multinational oil and gas buying companies have implemented measures to assist the indigenous companies with financing of contracts and purchase orders. These include facilitating access to bank loans, quick invoice payment, and direct support with funding by way of upfront payments. Thirty-eight percent of the respondents (Respondents A1, A2, and C1) mentioned this strategy.

According to Respondents A1, A2, and C1, Company A and Company C entered into arrangements with a number of Nigerian commercial banks that enable the indigenous contractors to access loans at more favorable commercial terms to fund the execution of contracts and purchase orders issued by the oil and gas companies. Based on the said contract financing arrangement between Shell Companies in Nigeria and the

United Bank for Africa Plc (UBA), the indigenous companies can obtain loans at prevailing Central Bank of Nigeria Monetary Policy Rate (MPR) plus 4% mark-up, which as of July 24, 2020 translated to 16.5% per annum, whereas commercial bank lending rate outside the scheme can be as high as 27% per annum. Compared to several months that it typically takes to complete process for obtaining loans from Nigerian commercial banks, the turnaround time under the scheme is significantly shortened to around 2 weeks or even less depending on how quickly the contractor can furnish the banks with requirements for due diligence and security. This arrangement leverages the credit ratings of the multinational companies to improve the ratings for the local companies who are only required to provide evidence of contracts or purchase order executed with the multinational buying companies.

In addition to helping indigenous companies to source cheaper loan financing, some oil and gas companies, such as Company A, make expedited payments to the Nigerian start-up companies compared to the typical 30 days or more invoice processing terms with major contractors. This further reduces the cost of contracts financing for the indigenous companies and therefore position them to better compete with established multinational contractors and suppliers. Company A have also provided financial support to local contractors through advance payments against project milestones and purchase order items that enabled the indigenous contractors to increase their execution capacities, while the upfront payments were amortized over time through supply of materials or provision of services.

Subtheme 2.5 - Facilitation of OEM Domestication

Sixty-three percent of the respondents (Respondents A1, A2, A3, C1, D1, and E1) mentioned various strategies for encouraging OEMs to establish presence in Nigeria. These comprise creating awareness of the Nigerian content law requirements among OEMs through the global category managers, sharing business demand forecast with the OEMs in order to showcase available and upcoming opportunities; carrying out road shows to OEMs; encouraging formation of partnerships and alliances between OEMs and indigenous companies for in-country manufacture, assembly, and maintenance of equipment; providing the OEMs in-country infrastructure support such as business premises, utilities supply, security, and so forth, and leveraging Nigerian content equipment certification issued by NCDMB. As discussed by Respondent A1, A2, and A3, OEM domestication is an integral part of Company A's suite of strategies for increasing local content development.

Overall, the data obtained from the field does not support a strong focus on encouraging OEMs to set up facilities or establish offices in Nigeria as part of local content development, hence this appears to be the least used strategy. Respondents B1, B2, C1, and E1 stressed that their Companies' focus is on encouraging indigenous company participation rather than influencing OEM domestication. Whereas some OEMs have registered Nigerian subsidiaries, those where foreigners have majority shareholding are not allowed to enter into direct contracts with the oil and gas companies for work categories on land and swamp terrains but may participate as subcontractors, alliance members, or joint venture partners with Nigerian majority owned companies.

Subtheme 2.6 - Research and Development

The oil and gas companies are by law required to carry out research and development as part of initiatives to increase local content in their processes and products. Fifty percent of the respondents (Respondents A1, A2, B1, and B2) mentioned that their companies carry out or support research and development for the purpose of achieving import substitution. At the time of data collection, Company A was developing synthetic base drilling mud using locally available materials in collaboration with University of Ibadan and the University of Port Harcourt. Similarly, Company B funds research and development initiatives by local companies who have revolutionizing ideas in collaboration with Nigerian universities to develop products that can be manufactured in Nigeria.

Subtheme 2.7 - Collaboration Among Oil and Gas Companies to Develop Local Content

The oil and gas companies in Nigeria collaborate for the purpose of ensuring long term health of the oil and gas industry under an umbrella association named the Oil Producers Trade Section (OPTS), a sub-group of the Lagos Chamber of Commerce and Industry (LCCI). Membership is voluntary and currently comprises 30 members, which include the multinational oil and gas companies and the indigenous oil and gas operators. Thirty-eight percent of the respondents (Respondent A2, B2, and D1) mentioned collaborations among the oil and gas companies under the OPTS as part of local content development strategy. Participation in the OPTS fora provides useful platform for sharing ideas and investments on categories of local content development initiatives that have

spillover benefits. Respondent D1 gave an example of such beneficial collaboration as the development of in-country capacity for barytes production, a critical input for drilling of hydrocarbon wells. OPTS members participate in Nigerian content exhibitions that are organized in collaboration with the NCDMB, which bring together the oil and gas companies and Nigerian contractors and suppliers for the purpose of sharing information on oil and gas input requirements and emerging in-country solutions.

Theme 3 - Monitoring and Measurement of Local Content Development Strategy Effectiveness

The multinational oil and gas companies monitor the effectiveness of their local content development strategies through the use of Nigerian content plans, local content key performance indicators, and monitoring of contractors' local content performance per contracts. All the participants discussed aspects of this subtheme. Local content performance monitoring includes review and assessment of the buying companies' performances and those of their contractors and suppliers. However key focus is on the contractors and suppliers who perform most of the work executed by the buying companies under projects or operations. As opined by Respondent B2, the oil and gas companies are vicariously liable for their contractors' and suppliers' compliance with the NOGICDA. In this regard, Company B actively follows up contractors and suppliers to assess how they are developing themselves and their subcontractors or sub-suppliers with respect to prior agreed local content performance targets or against the requirements of the Nigerian content law with respect to performance of subsisting contracts and suppliers, and gives them feedbacks on areas to improve.

Subtheme 3.1 - Nigerian Content Plan

Thirty-eight percent of the respondents (Respondent A1, B1, and D1) mentioned this subtheme. According to Respondent B1, key performance indicators are determined during the annual local content planning and forms the basis for measuring effectiveness of local content development strategies. Similarly, Respondent D1, underscored that the Nigerian content plan is a key document that encapsulates the local capacity development initiatives, which are to be carried out directly by the buying company or indirectly through contractors and suppliers within a fixed period of time. The Nigerian content plan includes local content development work actions and timelines for accomplishing them, and when approved by the NCDMB, the plan becomes the baseline for measuring and monitoring local content development and performance. The Nigerian content planning process is therefore a key tool for monitoring and improving local content development in the oil and gas industry.

Subtheme 3.2 - Review of Contractor Local Content Performance:

Fifty percent of the respondents (Respondents A3, B1, B2, and C1) mentioned this subtheme. Regular review of the local content performances for contractors and subcontractors by the buying company is necessary for ensuring sustainable growth in local content in the oil and gas industry. With key performance indicators for local content development agreed between the buying company and contractor or supplier, monthly, quarterly, bi-annual, or annual reviews are held, depending on value and complexity of contract, to assess contractor's or supplier's local content development performance against those specific key performance indicators as well as general

compliance with the NOGICDA. In Company A, contractors' and suppliers' local content performance reviews are jointly carried out between the buying team and the Nigerian content development team. Contractors and suppliers are required to submit monthly or quarterly reports on local content development performances ahead of scheduled reviews. Company C issues non-performance and nonconformance reports to contractors that fail to deliver on local content requirements. Local content performance reviews are carried out during business performance review sessions and the outcomes are action plans on areas to improve. According to Respondent B1, the buying company drives the local content performance review exercise in collaboration with the contractor. The monitoring and review of local content capacity development include visits to the contractors' facilities to assess their procurement policies, procurement strategies, local content plans, and local content performance reports; checking that the companies are not exceeding expatriate quotas as approved by the NCDMB; reviewing the contractors' organograms and succession plans and pushing for employment of Nigerians for roles where local capacities exist. Respondent B1 considers the review of contractors' local content capacity development the most effective strategy for growing local content because when contractors and suppliers know that the buying company will frequently audit their local content performances, they take purposeful actions to improve. Respondent B2 also stated that the local content performance review is more effective when carried out as 360-degree feedback where the buying company and the contractor or supplier give each other feedback on their contractual responsibilities that relate to local content development.

Subtheme 3.3 - Key Performance Indicators for Local Content Development

Sixty-three percent of the respondents (Respondents A1, A2, A3, B1, and E1) discussed aspects of this subtheme. The multinational oil and gas companies measure and monitor local content development using a range of key performance indicators such as volume of spend on indigenous companies, jobs created for Nigerians, Nigerians trained, visible increase in local capacity, community participation, partnership and alliances with foreign companies, goodwill resulting from local content development, and savings that accrue from interventions. Company A tracks performance against the indicators on monthly dashboard, which is reported to senior leadership of the company group. Company B sets key performance indicators for contractors and suppliers during the annual planning stage and this becomes basis for local content performance monitoring during the year. The key performance indicators that oil and gas companies use in growing local content are discussed below.

Volume of Spend on Indigenous Companies. The volume of spend on indigenous companies is one of the most common performance indicators that the multinational oil and gas companies use in monitoring and measuring local content performance. Thirty-eight percent of the respondents (Respondents A1, A2, and E1) mentioned this KPI. This indicator considers the volume of contracts and purchase orders, in dollar terms, that are executed through Nigerian contractors. By tracking values of contracts and purchase orders awarded to Nigerian companies vis-à-vis those awarded to foreign owned companies, the oil and gas company can assess its performance on local content development and the effectiveness of the local content strategies deployed. It is

however arguable if volume of spend on indigenous companies truly reflects the extent of local content development given that some respondents indicate that materials and services sourced from abroad are procured through Nigerian companies and such contracts are therefore captured as spend on local contractors even though most of the value might not be retained in Nigeria.

Local Jobs Created. The headcounts of additional Nigerians employed at various skills levels in the course of execution of projects and operations give indications of the effectiveness of local content development strategy deployed by the oil and gas companies. Based on the Nigerian local content law, projects in the oil and gas companies are to be executed with 100% Nigerians for work that require semiskilled and unskilled labor and no less than 60% Nigerians for work that require skilled labor. Twenty-five percent of the respondents (Respondents A1, and A2) emphasized this performance criteria, which is monitored through quarterly reports submitted by projects contractors. Compared to volume of spend on indigenous companies, local jobs created could be a more effective indicator of growth in local content since it focuses on Nigerians that are engaged in value creation. However, in terms of overall value of inputs into producing a unit of hydrocarbon molecules, local jobs created could be small and perhaps insignificant when compared to other inputs such as capital equipment and spares and expert services that are not locally available.

Nigerians Trained on Back of Projects. The Nigerian content law requires companies that execute projects in the oil and gas industry to devote certain percentage of the total project manhours to training of Nigerians in order to increase their skills levels

and thus close local capacity gaps. Per the NCDMB guidelines on human capital development, the buying company is required to invest 1% of capital project value on human capital development for project contract value that exceed 500 million United States dollars, 2% for project contracts between 100 million and 500 million United States dollars, and 3% for project contracts between 1 million and 100 million United States dollars. This requirement forms part of criteria for the NCDMB's approval of contracts and its implementation is monitored by the NCDMB post contract award. Only Respondent A2 mentioned Nigerians trained on back of projects as key criteria used in monitoring effectiveness of Company A's local content development strategies.

Visible Increase in Local Capacity. Thirty-eight percent of the respondents (Respondents A1, B1, and E1) mentioned visible increase in local capacity as metric for assessing effectiveness of local content strategies deployed. An example of performance against this indicator is deliberate steps, which Company A took to identify Nigerian experts for critical equipment maintenance and to facilitate their investment of facilities in Nigeria that now provide maintenance services previously carried out abroad resulting in significant savings on cost and time. Similarly, Company B tracks multinational contractors' support to local subcontractors to increase capacities over given period of time such as handholding local companies to learn services so that the local companies are able to take over in future. Likewise, Company E tracks number and value of in-country capabilities developed through local content strategy interventions.

Host Community Participation in Business Delivery. Only Respondent A2 mentioned this KPI. Company A tracks effectiveness of local content development

strategy by considering the increase in community participation in business delivery. This includes number of personnel employed from the local community and percentage value of procurement carried out through community contractors. The NCDMB Community Content guidelines requires the oil and gas companies to source from the host communities 100% of unskilled labor, 50% of semiskilled labor, and 10% of skilled personnel during project execution, and engage 20% of personnel from the host communities during the operations phase. The guidelines also require the buying company to award a minimum of 30% of contracts value for goods and services to host community contractors.

Number of Partnerships and Alliances with Foreign Companies. Partnerships and alliances between local contractors and foreign companies are encouraged by many oil and gas companies as this enables local contractors to participate in tenders and contracts execution where they otherwise lacked capacity. Only Respondent E1 mentioned this KPI. Company E assesses effectiveness of strategy for local content development from perspective of alliances and partnerships that the local contractors and suppliers form with foreign companies as a result of the Company E's intervention. Although Respondent A2 mentioned that Company A, on exceptional basis, encourages local companies to partner with OEMs, this effort was not indicated as a metric for assessing effectiveness of local content development strategies.

Goodwill Resulting from Local Content Development Initiatives. Thirty-eight percent of the respondents (Respondents A1, A3, and B1) mentioned this KPI. According to Respondents A1 and A3, the level of peace and freedom to operate in project and

operational areas is an indicator of effectiveness of Company A's local content development strategies. Respondent B1 stated that as a result of local content strategy of engaging the community using global memorandum of understanding that includes procurement of goods and services from host communities, Company B enjoys more freedom to operate compared to other operators such that one can hardly hear of community disturbances around its facilities. Similarly, Company A assesses the effectiveness of its local content development strategies on basis of local content stakeholder recognitions, such as awards from NCDMB and PETAN.

Input Cost Savings and Value Improvement That Accrue From

Interventions. The savings in terms of cost and time that accrue from local content development strategy implementation is also an indication of effectiveness of the strategy. Only Respondent A1 mentioned this KPI. Respondent A1 opined that effectiveness of Company A's strategy of supporting local manufacturing for bolts and nuts is indicated by the 55% cost savings that was recorded through local procurement of these materials from the local manufacturer instead of importing them as was previously the case. Similarly, Company A considers the support of a local manufacturer of split clamps effective because this resulted in 12% cost savings and reduction of lead-time by 3 months.

Alignment of Findings With Conceptual Framework

The findings from the study generally align with Kazzazi and Nouri's (2012) local content development framework, which conceptualized four dominant factors that drive local content development namely local policies, local capability, local infrastructure, and

local environment. Local content public policies as contained in the NOGICDA, implementation guidelines issued by the NCDMB, and the organizations' own policies are most dominant drivers for local content development initiatives that are carried out by multinational oil and gas companies. The need to close gaps in local capabilities for local contractors and individuals vis-à-vis the resource requirements of the oil and gas business influence the oil and gas companies' capacity development initiatives such as personnel training and support for local contractors' equipment and asset acquisitions. Some oil and gas companies embark on the provision of public infrastructure such as roads, jetties, electricity, pipe borne water, and so forth, as both local content initiative and CSR, while other companies strive to grow local content by influencing OEM's domestication using as incentive the provision of physical infrastructure and facilities to augment shortfalls in the country. Similarly, some multinational oil and gas companies have addressed the challenge of difficult access to commercial loans, which is a key local environmental factor that hinder participation of small local companies in the oil and gas industry, by entering into special loan financing arrangement with major commercial banks.

The findings from the study include business value drivers that motivate organizations to embark on local content development. This key variable was omitted by Kazzazi and Nouri (2012) in their local content conceptual framework. By clearly articulating and documenting the business value drivers that justify the pursuit of local content development, the supply chain manager will demonstrate the positive impact of local content development to the organization's bottom-line and therefore have strong grounds to convince the senior leadership of the organization to support successful

implementation of effective local content development strategies. The value drivers are also key indictors to measure and monitor the effectiveness of the local content development strategies deployed by the organization.

The findings from the study support the idea that supplier development is a dominant strategy for developing local suppliers (Kumar & Routroy, 2017a, 2017b) and generally align with Krause et al.'s (2000) mediated impact model of supplier development, which states that when the buying firm combines supplier assessment, supplier incentivization, and direct buying firm involvement, a significant improvement in supplier performance can result. The oil and gas companies assess and select candidate contractors for supplier development through the tendering process, which often include evaluation of contractors' technical and commercial proposals against set criteria. Supplier incentives include execution of contracts on basis of which the buying firm and supplier consummate the benefits of the supplier development, and likelihood of increased patronage and repeat purchase from local contractors and suppliers whose capacities are developed. Some oil and gas companies have made direct commitments towards supplier capacity development by assisting them with funding and technical support that enabled the local companies to increase their capacities, achieve international certification, and become regional players.

Howbeit, except for Company A, which has actively pursued sorts of proactive supplier development programs such as encouraging Nigerian entrepreneurs in the diaspora to return and establish facilities, and collaboration with local contractors that show growth potentials to expand their capacities, the findings from the study do not

reveal consistent purposeful pursuit of supplier development by the oil and gas companies as strategy to improve supply chain value and create competitive advantage for their organizations (Kumar & Routroy, 2017b). The supplier development initiatives of the multinational oil and gas companies are generally driven by need to comply with statutory requirements and to secure freedom to operate, which posture aligns with Ngoasong's (2014) findings that multinational oil and gas companies adopt proactive measures to ensure compliance with local content requirements as specified in the statutes. The success stories that emerge from the study indicates that structured and consistent approach to local content development can indeed contribute significant value to the oil and gas business delivery.

Alignment of Findings With Existing Literature on Local Content Development Strategies

The findings from the study generally agree with existing body of knowledge on local content development as found from review of professional and academic literature. Local content development initiatives are mostly driven by need to secure freedom to operate from host communities and stakeholders and to comply with public policies per the NOGICDA and local content guidelines issued by the NCDMB. The dominant local content strategy seems to be a mixture of legal compliance and local content responsiveness, which align with Hansen (2020). Supply chain managers in the Nigeria oil and gas industry pursue forms of supplier development as part of suite of strategies to improve local content development. However, while some companies have recorded modest business value improvement that accrued from supplier development initiatives,

others are yet to see significant business benefits and nonetheless anticipate prospects of the initiatives contributing to competitive advantage in the long term. The findings from the study further reveal deliberate strategy of the multinational oil and gas companies giving opportunities to minority businesses owned by individuals from the host communities, which is consistent with the supplier diversity program as practiced in the United States of America (Klocek et al., 2014).

From the study, the key gap found from the literature being absence of research on actionable strategies that supply chain managers in the Nigeria oil and gas industry are using to increase local content development and how such strategies are linked to overarching supply chain management strategies have been addressed. Consistent with the findings of Ngoasong (2014) the multinational oil and gas companies in response to the NOGICDA carry out technical capacity development and human capacity development of local companies and individuals. The technical capacity activities include financial and technical support for production assets acquisition, facilities improvement, and international certification of local suppliers and their products. Human capacity development activities comprise sponsorship of vocational training, provision of university scholarships, endowment of professorial chairs, and so forth.

The findings from the study also align with Owusu and Vaaland (2016b) on the antecedents of local content development: the key actors and necessary interrelationships. Active collaborations among the multinational oil and gas companies and the NCDMB through workshops, symposia, exhibitions, and so forth, are vital in stimulating local content local content development. Also, collaboration among the oil and gas companies

under the auspices of OPTS in developing local capacities where there are significant spillover benefits for the organizations have proved vital in growing local contents. By actively sharing the cost and resources for development of local suppliers, the key setback to supplier development, which is buyers' concern that the competition would reap benefits of their supplier development efforts, is mitigated (Friedl & Wagner, 2016).

Applications to Professional Practice

This research study is of potential value to supply chain managers in the Nigeria oil and gas industry and other sectors of the Nigerian economy who desire to replicate tested strategies for improving local content in an organization's processes and products. The outcome of the study is a taxonomy of various actionable strategies that supply chain managers in the multinational oil and gas companies have successfully used in growing local content in their processes and products. The outcome of the study also includes the imperatives for the supply chain manager to pursue local content development in their organizations as an integral part of supply chain management strategy. Besides assuring freedom to operate, which saves the buying company additional costs due to disruptions from dissatisfied host communities or sanction from the regulators, the pursuit of local content development can yield competitive advantage in the long run through lower commodity costs, lower labor costs, and security of supply.

The outcome of the study could be useful to supply chain managers of the indigenous oil and gas companies who desire to put in place corporate policies, frameworks, and strategies for complying with the requirements of the NOGICDA and to achieve sustainable supply chain value delivery in the long term by optimizing local

content value. The insights from the study could also be useful in other sectors of the Nigerian economy where supply chain managers wish to build resilient and sustainable supply chain value delivery through local sourcing of inputs.

Implications for Social Change

The implication for social change is motivation and drive for leaders in oil and gas companies to take more decisive actions towards achieving the objectives of the local content policy. The development of local entrepreneurs and individuals through the local content development initiatives of the oil and gas companies will grow local companies' capacities and capabilities, enabling them to meaningfully participate in the oil and gas business. The increase in local content development, which could result from adoption of the local content development strategies identified in this study may significantly increase the utilization of locally sourced inputs by companies in the oil and gas industry. This will in turn create employment opportunities for Nigerian youths and could contribute to the reduction of youth restiveness in the Niger Delta region where oil and gas resources are mined (Agbaji et al., 2018). As reported by Respondent B1, the deliberate strategy of engaging resources from host communities and creating business opportunities for communities' owned enterprises contributes to harmonious relationship that fosters trust and peace and safeguards the oil and gas company's assets. The reduction of youth restiveness and expansion of business opportunities for indigenes will imply a more conducive social environment and reduce incentives for Nigerians to migrate to other countries while attracting more foreign direct investment to the country.

Recommendations for Action

I will share with the multinational oil and gas companies that participated in the study, a summary outcome of the study and also provide link to the published version in ProQuest. I will further make available the outcome of the study to other interested supply chain managers in the Nigeria oil and gas industry. The results of the study offer an in-depth information to assist supply chain managers in shaping the local content development strategies for their organizations. The insights from this study could be useful for articulating business imperatives for local content development, formulating overarching corporate local content development policies, strategies, tactics, and actions plans, and driving their effective implementation, including monitoring and performance measurement. In response to the Nigerian content policy that targets 70% local content in the oil and gas industry by year 2027, I recommend that supply chain managers use this work as benchmark for developing and implementing strategic approaches to local content development along the identified three themes. In particular, I recommend that supply chain managers document clear and concise business value drivers that underpin the selection and implementation of appropriate local content development strategies.

I will share a summary copy of the study with the NCDMB and offer to make presentations to the board on the findings. The insights from the study will potentially provide the NCDMB with valuable perspective on how the multinational oil and gas companies formulate and execute of strategies for local content development. Also, the findings could be useful inputs in the NCDMB's tactical and operational action plans for engaging with the oil and gas industry players with objective of achieving the targeted

70% local content by year 2027. Finally, I will seek opportunities to present insights from the study for publication in academic and professional journals such as ResearchGate, Supply Management, and Africa Journal of Management.

Recommendations for Further Research

Through the study, I have identified strategies that supply chain managers have used in effort to increase the local contents in their processes and products. The strategies have varying degrees of effectiveness as reported by the respondents. It is necessary to further review and rank the strategies in order of effectiveness using a quantitative methodology. The outcome of the further study will be a recommendation of shortlist of most effective local content development strategies for supply chain managers to pursue. Another area of further research is an assessment of the relationship between local content development expenditure and tangible business value created for the buying companies in Nigeria. The outcome of this study will provide stronger impetus for the oil and gas companies to sufficiently invest resources into local content development as lever for business performance improvement and competitive advantage.

Reflections

The information from this study might be useful to supply chain managers in pursuing initiatives to increase local contents of their processes and products. The data I collected, and the analysis thereof reinforced my view that qualitative multiple case study approach was an effective method to explore the strategies that supply chain managers use to increase local contents of their processes and products. The study covered five case companies and eight respondents who are subject matter experts in their organizations

and therefore able to share useful lived experiences on local content development strategy.

I underestimated the bureaucracies in the multinational oil and gas companies, which made it difficult to secure necessary supports and cooperation. Through persistent follow up I was only able to secure approvals from five out of seven case study companies of which only eight out of the 10 respondents I recruited eventually provided data. I followed the approved data collection and analysis process and was strictly guided by the ethical research procedure. The participants exhibited professional depth in answering the interview questions.

Conclusion

The purpose of this qualitative multiple case study was to explore the strategies that supply chain managers in the oil and gas industry use to increase the local contents in their processes and products. The oil and gas companies are under statutory obligation to increase local contents of their products and processes per the NOGICDA and the NCDMB guidelines. The local content conceptual framework developed by Kazzazi and Nouri (2012) and the mediated impact model of supplier development by Krause et al. (2000) were useful lenses for the research as these enabled me to focus of the literature review, and the themes that emerged therefrom were basis for data collection and analysis. The respondents were supply chain professionals and business leaders actively involved in local content development in their organizations. I achieved data saturation using the interview data and data extracted from secondary materials that I collected.

The main strategy themes for increasing local content development, which I identified from the study are (a) business value drivers for local content development, (b) the overarching local content development strategies deployed, (c) monitoring and measurement of local content development effectiveness. Three key business value drivers that influence oil and gas companies to pursue local content development are (a) need for license or freedom to operate, (b) goodwill and recognition for local content performance, and (c) input cost savings. The overarching local content development strategies include (a) corporate local content policies and framework, (b) capacity development initiatives, (c) supplier development, (d) financial support to indigenous companies, (e) collaboration among oil and gas companies, (f) OEM domestication, and (g) research and development. The recommendations for action and future research are based on the findings from the study.

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Appendix A: Bracketing of Personal Biases

In order to avoid the interference of my personal biases in the process of data collection

and analysis, I hereby document my biases as a supply chain management professional

who had been involved in local content development initiatives as an employee of the

Shell Petroleum Development Company of Nigeria Limited, one of the case study

companies selected for the research.

1. I view the Nigerian content requirements as in many respects unrealistic and could

   be counterproductive. This includes schedules of Nigerian content performance

   targets as per the NOGICDA which stipulates certain percentages of local sourcing

   for items where local capacity is mostly deficient, for example 100% local sourcing

   of linepipes of various makes.

2. The buying firms are required by NCDMB to import through local contractors, items

   that are not made in Nigeria, including proprietary items such as turbines, pumps,

   valves, etc. In my view, doing so mostly adds cost and little or no in country value. I

   strongly believe that oil and gas companies being also registered Nigerian companies

   can import items directly where importation is permitted rather than going through

   some other local companies.

3. I believe the oil and gas companies are largely paying lips service to the issue of

   local content development. In my view, simply awarding contracts to local

   companies in Nigerian Naira does not translate into local content development.

Appendix B: Interview Protocol

Participant Pseudonym   _____

Participant Code   _____

Interview Date   _____

Total Time   _____

What I will do	What I will say
1. Welcome participant and introduce the interview session with greetings and introduce self. 2. Give participant a copy of the consent form to go over the contents, and ask him if there are questions and or concerns. If he raises questions or questions, address them before proceeding.	1. Good day Mr. / Mrs. xxxx, My name is Ukaegbu Onwuka, a doctoral student in the department of Business Administration of Walden University with specialization in global supply chain management. I am, conducting a doctoral study on strategies for improving local content development in Nigeria oil and gas industry. 2. Thank you for your time and for agreeing to participate in this study. 3. Here is the fully signed copy of the signed consent form for your record. The interview and its subsequent treatment will be strictly in line with the provisions and commitments made on the consent form. I will be pleased to discuss any questions or concerns you may have on the consent form before we proceed.
3. Turn on the recorder 4. Introduce participant(s) with the coded identification and note date and time in the journal. 5. Begin interview with question #1, and follow through to the last question. 6. During interview, observe non-verbal cues and paraphrase as appropriate. 7. Follow up with additional questions – probe questions for more depth	1. What overarching strategies are in place for increasing local content in your company's processes and products? 2. How does your organization measure and monitor the effectiveness of local content development strategies? 3. What local content development strategies have been most effective? Explain why, based upon your experience, they have been effective.

8. End interview. 9. Discuss member checking with participant(s). 10. Thank the participant(s) for taking part in the interview. Give contact numbers to participants for follow up questions and concerns if need be.	4. What local content development strategies have been least effective? Explain why, based upon your experience, they were not effective. 5. What are your company's annual expenditures on the implementation of local content development strategies over the past 10 years? 5. In what ways, if any, is the process of local supplier development linked to local content development strategies in your company? 7. What strategies, if any, have your company used to influence original equipment manufacturers to establish facilities in Nigeria? 8. In what ways, if any, do corporate social responsibility programs in your company relate with the strategies for increasing local content? 9. In what ways, if any, does the implementation of local content development strategies influence competitive advantage for your organization? . 10. What other information might be relevant in explaining the strategies that supply chain managers in the Nigerian oil and gas industry use to increase local content in their companies' processes and products?
Wrap up interview and thank the participant for sharing his experience and time	Thank you for sparing time to share your experiences with me. I will transcribe and analyse the interview data and would like to return to review the synthesis with you to ensure that I correctly represented your inputs.
Schedule follow-up member checking interview	I would appreciate we agree on the date and time for the follow up review meeting which should not exceed 30 minutes.

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Appendix C: Themes from Data Analysis

	Theme	Responses								Total Responses	% Response
		A1	A2	A3	B1	B2	C1	D1	E1		
1	**Business imperative for local content development**									**6**	75%
1.1	Freedom to operate	☞		☞	☞		☞		☞	5	63%
1.2	Local content recognition	☞		☞					☞	3	38%
1.3	Input cost savings and value improvement	☞		☞	☞		☞	☞		5	63%
2	**Overarching local content development strategies**									**8**	100%
2.1	Corporate local content policies and framework									8	100%
2.1.1	*Local content development function*	☞	☞							2	25%
2.1.2	*Compliance with NOGICD 2010 Act*	☞	☞	☞	☞	☞	☞	☞	☞	8	100%
2.1.3	*Nigerian content planning*	☞			☞	☞		☞		4	50%
2.1.4	*Category management strategy development*			☞						1	13%
2.1.5	*Deliberate creation of business opportunities for local contractors*			☞			☞		☞	3	38%
2.2	Capacity development initiatives									8	100%
2.2.1	*Support of indigenous companies' asset ownership and enhancement of indigenous companies' infrastructure*	☞	☞				☞	☞	☞	5	63%
2.2.2	*Support for in-country manufacturing*	☞	☞				☞			3	38%
2.2.3	*Human capital development*	☞	☞		☞	☞	☞		☞	6	75%

		Responses								Total Responses	% Response
	Theme	A1	A2	A3	B1	B2	C1	D1	E1		
2.2.4	*Facilitating technical skills transfer through partnerships and alliance between local companies and foreign firms*			☞				☞	☞	3	38%
2.3	Supplier development	☞	☞	☞	☞	☞	☞	☞	☞	8	100%
2.4	Financial support to indigenous companies	☞	☞				☞			3	38%
2.5	Facilitating OEM domestication									8	100%
2.5.1	*Inform OEMs about local content statutory requirements*	☞	☞	☞						3	38%
2.5.2	*Share business demand forecasts with OEMs*		☞							1	13%
2.5.3	*Road Shows to OEMs*						☞			1	13%
2.5.4	*Encouraging alliances between local contractors and OEMs*	☞		☞			☞	☞	☞	5	63%
2.5.5	*In-country support to OEMs*						☞			1	13%
2.6	Research and development	☞	☞		☞	☞				4	50%
2.7	Collaboration among oil and gas companies to develop local content		☞			☞		☞		3	38%
3	**Measurement and monitoring effectiveness of local content development strategy**									**8**	100%
3.1	Nigerian content plan	☞			☞			☞		3	38%
3.2	Review of contractor local content performance			☞	☞	☞	☞			4	50%
3.3	Use of KPIs									5	63%
3.3.1	*Volume of spend on indigenous contractors*	☞	☞						☞	3	38%
3.3.2	*Local jobs created on back of projects*	☞	☞							2	25%

	Theme	A1	A2	A3	B1	B2	C1	D1	E1	Total Responses	% Response
					Responses						
3.3.3	*Nigerians trained on back of projects*		☞							1	13%
3.3.4	*Visible increase in local capability*	☞			☞				☞	3	38%
3.3.5	*Community participation in business delivery*		☞							1	13%
3.3.6	*Number of partnerships and alliances formed with foreign firms*								☞	1	13%
3.3.7	*Goodwill resulting from LCD interventions*	☞		☞	☞					3	38%
3.3.8	*Savings accrued from interventions*	☞								1	13%