NTNU – Trondheim
Norwegian University of
Science and Technology

Local Content Strategy, solution for successful global oil and gas projects in emerging economies

Seyed pedram Mireftekhari

MASTER THESIS
Spring 2013
for
Seyed Pedram Mireftekhari

Local content management in global oil and gas projects

(Lokalt innhold i globale olje og gass prosjekter)

High percentages of emerging economies use local content regulation in their global projects' contracts (which most of them are oil and gas projects) to boost their economy and develop their industry. In addition stakeholders' requirements like local content expectations are among the most unforeseen risk of global projects based on literature which shows the importance of this issue and how relevant it is to manage in real life.

In this master thesis the student will study how expatriate project managers of some case companies organize to ensure local content in their global projects (oil, gas and mineral projects) in emerging economies and what are the main factors of their local content management process. The master thesis will be in cooperation with some oil and gas companies if possible; otherwise the student will make some interviewee with possible project managers or make an online survey to find data. The result of the master thesis will be an overview of the main practical factors to ensure local content and how to manage it in real life in this specific sector and economies.

The methodology for this thesis will be qualitative and based on interviews or a survey amongst related project managers who have experience from managing local content and its regulation in global projects.

The student shall perform the following tasks:
1) Describe the topic and problem statement more thoroughly
2) Conduct a comprehensive literature review covering relevant literature about local content, global projects, country risk and stakeholder management in global projects
3) Conduct a case study with interviews in some oil and gas companies to examine how the local content management process are organized and how it can be improved in the global projects
4) Compare the findings from the literature review with the results from the empirical study and suggest improvements

The literature study will cover the theoretical foundations of the problem and the context.

The literature search will be conducted in databases such as Scopus, Google Scholar and Bibsys. In total about 30-40 articles will be reviewed and analyzed.

The preliminary investigation in some oil and gas companies will be conducted by use of interviews. The interview objects will be chosen based on relevance for this research. It is desirable that the interviewees have experience from global projects so that the information provided is not based on opinion but on actual experience. About 10 – 12 interviews in total will be carried out.

The results from the empirical study will be compared to those from the literature study. Suggestions for improvement will be made based on this.

The results of the project shall be documented in a final report. This report shall be written as a research report containing a summary, conclusion, literature list, table of contents, and a main section documenting the results of the work. In preparing the report, it should be emphasized to make the text perspicuous and well written. There should be references in the text to tables and figures in the final evaluation. It will be emphasized that the results are thoroughly prepared and discussed, and that all sources used are referred to.

Within three weeks after the date of the task handout, a pre-study report shall be prepared. The report shall cover the following:

- An analysis of the work task's content with specific emphasis of the areas where new knowledge has to be gained.
- A description of the work packages that shall be performed. This description shall lead to a clear definition of the scope and extent of the total task to be performed.
- A time schedule for the project. The plan shall comprise a Gantt diagram with specification of the individual work packages, their scheduled start and end dates and a specification of project milestones.

Material, which is developed in connection with the project, like software, text and graphic files or physical equipment, is a part of the final report. Documentation for correct use of this shall also be enclosed in the report. Documentation, which is collected with the support from the institute during the project task, shall be handed in with the report.

If the project assignment requires contact with an enterprise and eventually work in this, the enterprise's regulations shall be adhered to. The student shall follow any orders given by the management and is not allowed to interfere with the production or other work without the

management's consent. Internal information about the enterprise, which the student obtains, shall not be given to persons outside the enterprise.

The student shall pay any travel expenses, printing and telephone expenses unless other agreements exist.

The assignment text (this text) shall be enclosed and be placed immediately after the title page.

Deadline: June 10th 2013.

Two bound copies of the final report and one electronic (pdf-format) version are required.

Responsible supervisor at NTNU: Wenche Aarseth
                                      Mobile phone: 975 24049
                                      E-mail: wenche.aarseth@ntnu.no

**DEPARTMENT OF PRODUCTION
AND QUALITY ENGINEERING**

Per Schjølberg
Associate Professor/Head of Department

Wenche Aarseth
Responsible Supervisor

"The days when oil companies could simply produce and export a country's oil are long gone companies need to give host countries more than revenue and royalties"

Claudio Descalzi, ENI
Financial Times interview, June 2010

Nomenclature

CSR	Corporate social responsibility
EE	Emerging economies
FDI	Foreign direct investment
GDP	Gross domestic product
HRM	Human resource management
IOCs	International oil companies
LCR	Local content regulation
LCS	Local content strategy
NOC	National oil companies
POC	Private oil companies
SME	Small-and medium-scale enterprise
TRIM	Trade-related investment measure
WTO	World Trade organization
IMF	International monetary fund
UNCTAD	United Nations conference on trade and development

Table of Contents

List of Figures

List of Tables

Summary

The main purpose of this thesis is to help international oil and gas companies to develop a better local content strategy in global oil and gas projects in emerging economies.

By checking the previous work in this field, some issues are still vague, it seems that there is not a unite definition for local content in literature. Not so many documents have been found about the effect of local content expectations on global projects and more importantly, few guidelines about how to progress a local content strategy in global projects in emerging economies exist in scientific resources.
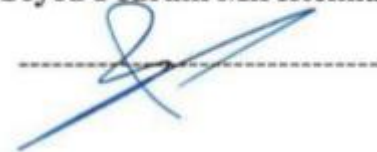
This issue is important because nowadays companies have projects abroad and more confronted with local content regulations and need to know how to answer them while it also has challenges by itself.

To find the research goal the writer built interviews and surveys and asked expatriate project managers and country managers to share their experience. The result is that if companies need to ensure the local content in global oil and gas projects in emerging economies first they need to know that the main stakeholders are national and local governments and the national oil companies. There are many challenges because of the emerging economies characteristics and the global project environment which are the lack of competent people and unrealistic local content expectations.

Based on this thesis work a local content strategy should have components like Joint venture with local firms, training and skill development of local workforce, developing local education and training institutions, industry collaboration, and local procurements and should plan and execute these strategies as soon as the project starts.

Keywords: Local content, global projects, emerging economies, international oil and gas companies

Seyed Pedram Mireftekhari

Acknowledgements

"Laudation of God of majesty and glory! Obedience to him is a cause of approach and gratitude in increase of benefits. Every inhalation of breath prolongs life and every expiration of it gladdens our nature; wherefore every breath confers two benefits and for every benefit gratitude is due."[1]

The author is grateful to the managers and scholars who anonymously co-operated with the survey. And the people who voluntarily participated in the interviews and answered the questions wisely.

To my supervisor Wenche Aarseth. who guided me a lot during my thesis and the specialization course. Her eager attitude motivated me during my research.

To my family, my mother and father who supported me, even when I was miles away from home.

To my fiancé, Zahra Ismaili, who gives me "hope" the important object to make this thesis.

And finally, I would also like to thank my friends, [I didn't want to name anyone, for risk of leaving someone out], without their suggestions, I would have been lost.

---

[1] World famous Persian - Iranian - 13th century poem
SAADI 1240. *The Golestan of Saadi*, Iran chamber society.

Chapter I Introduction

1.1. Background

Not so many years after the first oil explorations in the world, in 1933 agreement between The Iranian Government and Anglo-Iranian Oil Company (AIOC)[2], Rezā Shāh Pahlavi -king of Iran- asked for local content requirement in the oil explorations. Under the 1933 agreement with Reza Shah, AIOC had promised to give laborers better pay and more chance for advancement, and build schools, hospitals, roads and telephone system although it had not done so (Kinzer, 2008). However it caused to found Abadan Institute of Technology, the first Petroleum University in Iran to train new generation of Iranian managers, engineers and technicians (Vismeh, 2011).

This can be the first example of the local content expectation in the oil and gas industry, while later local content policies were introduced in the North Sea in the early 1970s and ranged from restrictions on imports to the creation of NOCs (Tordo et al., 2011).

The local content subject is nowadays more important to developing and emerging economies to be used it as a ladder for economic development of the country and bring more assets than just oil revenues and taxes. Local content is defined by IPIECA (2011):

> *Local content is the added value brought to a host nation (and regional and local areas in that country) through the activities of the oil and gas industry. This may be measured (by project, affiliate, and/or country aggregate) and undertaken through:*
>
> - *Workforce development:*
>   *Employment of local workforce; and*
>   *Training of local workforce*
> - *Investments in supplier development:*
>   *Developing supplies and services locally; and*
>   *Procuring supplies and services locally*

Local content requirements aim to create jobs, promote enterprise development and accelerate the transfer of skills and technologies (IPIECA, 2011) and it became a strategic issue for the oil and gas companies as local content policies affect both POCs and NOCs (Tordo et al., 2011). The major International oil companies (IOCs) have the capacity and the capabilities to be key players in developing a country's economy while smaller IOCs seldom have the capacity to get engaged in developing national content. So it is most seen in oil and gas industry because of its capabilities and wide ranges of projects in emerging economies. Local content requirement is not just for specific industry, automotive manufacturing industry for instance in Indonesia has been seeking to achieve 60% in 2010 is a good example (Maruli, 2010).

The importance of the issue of local content, force many companies to looking at it as a

---

[2] later called British Petroleum Company (BP)

strategic issue that can have a direct impact on a range of core business functions, such as business development, procurement and operations (IPIECA, 2011).

The original driver of this thesis is the gap in literature about local content strategy as the companies are pursuing solutions to answer local content request in their projects. That is why this thesis is trying to fill this gap of local content definition and local content strategy components.

1.2. Objectives and thesis scope

The thesis goal is to find the answer to the question of "how", rather than "what" or "why", and the question is: How IOCs develop strategies that can be used to manage local content in global oil and gas project in emerging economies. As mentioned earlier major IOCs have the capacity and the capabilities to be key players in developing a country's economy, so the strategy is more based on oil and gas global projects in emerging economies. In addition, finding what are the barriers against local content development in emerging economies, and how oil and gas companies can overcome these challenges are prerequisite.

The thesis reviews some emerging economies' specifications and local content requirements and their challenges. The countries that are going to be discussed like Brazil, Russia, and Nigeria are among emerging economies and nowadays they have local content requirements in country' laws or they use it as a part of the contract. The research scope and plan are depicted in Figure 1:

Figure 1 - Research scope
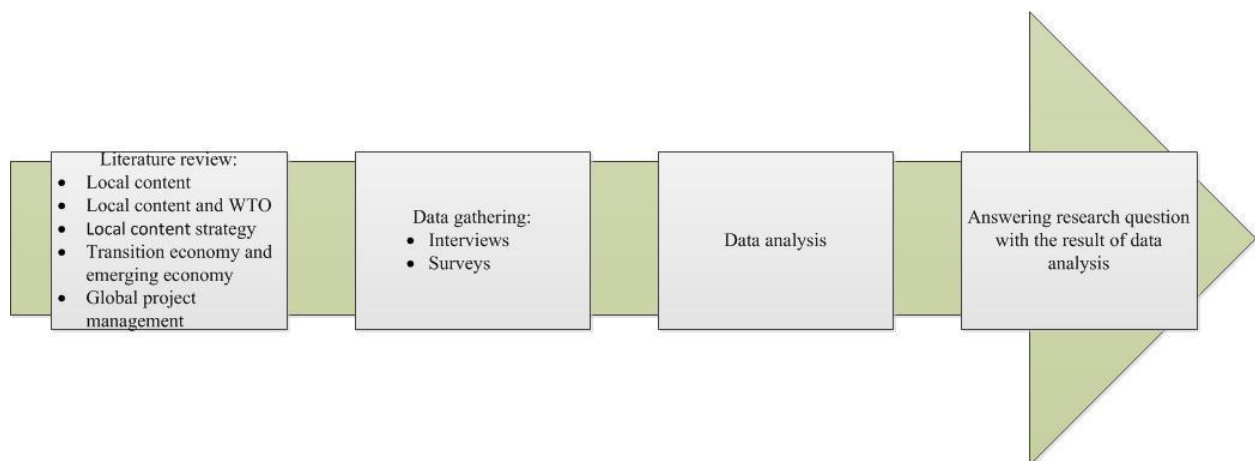
1.3. Approach

The thesis consists of extensive literature review of the local content field and looking at the some sample emerging economies as an example of this economy related to local content. To find more practical result writer has used both qualitative approach and quantitative, using 19 online surveys as quantitative approach and 3 cyber interviews as qualitative approach.

1.4. Limitations

Based on the study of this thesis there is a gap in literature about local content in organization and project management studies. Although local content issue is part of contracts in oil and gas projects in most of emerging economies but there is lack of information about local content issue in project management studies and organization field. There are a small number of books and articles that have talked about this issue but most of them are not qualified as a scientific document or do not talk about local content in project field.

The thesis can be perceived as a wide research but considering the insufficient data and literature in this field and its novelty it cannot be deeper than it is now. Simple inadequate unfinished works about local content definition and challenges of local content program led the writer to work on this subject. In addition, oil and gas companies' barriers for managing project in emerging economies as well as the emerging economies benefits that can gain from oil and gas companies were inspirations for this thesis.

1.5. Overall structure of thesis

The thesis has five chapters, in the first chapter the background and history of the subject is shown in addition to the objectives and a summary of the approaches to the thesis. Also the problem is described with the research questions and the thesis scope and objectives.

The second chapter, which is the main part of the thesis, is reviewing the previous work in this field. First with a table, all previous definitions of local content are summarized then their national regulations are compared with WTO rules. Then characters of emerging economies are depicted with some sample emerging economies showing that they have all the same common symptoms and local content regulation. Finally, in this chapter the global project is defined base on their specific characteristics and the reason for that is to show what characteristic of global project is important for a local content program.

In chapter three, the chosen methodologies and the reason for choosing them described. The way that data were gathered is also written in detail also the reliability and validity of data is going to be described in this chapter.

In chapter four, the result of both interviews and surveys are illustrated. Also, the results are argued and the summery of the outcomes are displayed in the discussion part. In the last chapter the conclusion is shown with the future possible research in this filed.

1.6. Problem description and research questions

In order to manage local content expectations in global oil and gas projects, local content strategy can be a solution for project managers and using it during the project phases can decrease its drawbacks as well as project risk. But there are barriers against it in emerging economies with their characteristics like unstable economy and weak financial basis or

unrealistic expectations (Crittenden and Crittenden, 2012). These barriers need specific and flexible strategies for each emerging country while they can be generalized to some extent. So the thesis is going to find is it appropriate to have local content strategy and address how to develop local content strategy in the global project management context in emerging economies and how companies used to do it.

So the research questions are:

1. What are challenges in emerging economies by considering local content requirements in oil and gas projects?

2. What kind of strategies companies should use to answer the local content expectations? And can these strategies be useful to answer local content expectations?

Chapter II Concept

Literature Review

It is vital to look around the previous scientific theories regarding local content and its aspects in project management as well as countries that have experienced the essential of local content's policy in their local laws. Coming next are the topics that are important to review to be able to answer the research questions. Figure 2 depicts the topics and relation among them which are going to be reviewed during this chapter. These subjects are: local content and local content strategy, sample emerging economies which experienced local content before, and global project management.

The literature was chosen among international recognized journals like International Journal of Project Management, Scandinavian Journal of Management, International Journal of Managing Projects in Business, Project Management Journal, The American Economic Review, Sloan Management Review, Strategic Management Journal, and others.

Also in case of checking the countries law and rules regarding local content, some statute books of countries also explored to find the business law of countries like Brazil, Nigeria, Russia and Norway. In addition to that, to see the companies' strategies about local content, some companies' manuals and websites are also visited.

The amount of literature around the local content topic is not as expected and makes us to look at some other institutes and companies' documents that are currently working on local content like IPIECA, Menas, INTSOK, and IFC which are not categorized as scientific work.
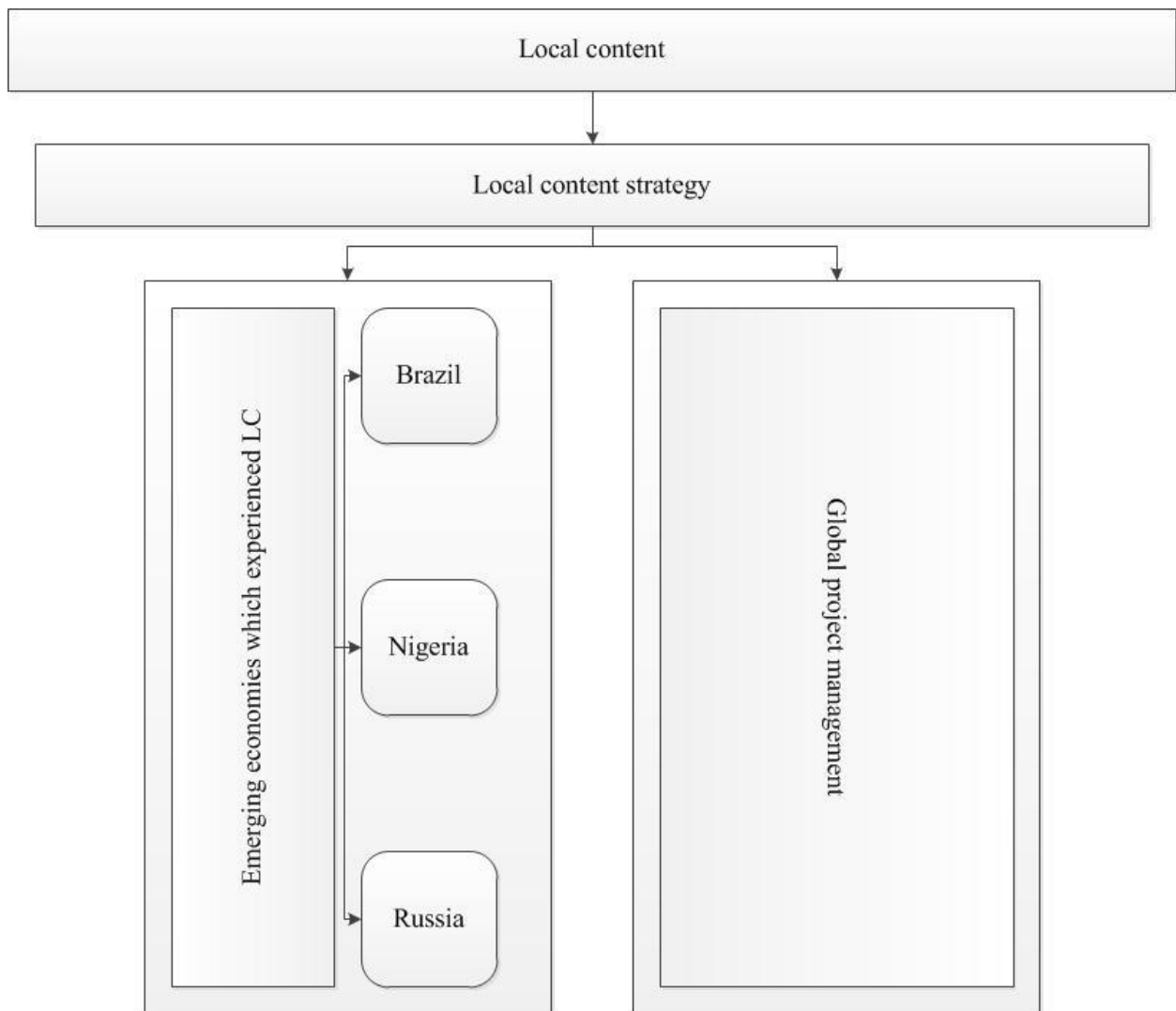
Figure 2 - Literature review keywords

2.1. Local content

In this section the local content literature will be presented and found how the researchers define local content. Nowadays local content expectations are used more and more not only in developing and emerging economies as well as developed economies like Norway and UK. For instance, in some African countries, up to 40% of the weighting in the award of public contracts are now assigned to the quality of a bidder's proposal on local content (Dynes, 2011) and for Norway and UK procedures see Appendix VI.

Local content is a complicated concept (Sigrid et al., 2011): also, there is a gap in the definition of local content in the theory. Most countries define local content by their own words, even some countries use other terms such as Oman, which uses "In-Country Value" (Muscatdaily, 2012) or Nigeria defines it with its own purpose:

> *"The quantum of composite value added to or created in Nigeria through utilization of Nigerian resources and services in the petroleum industry resulting in the development of indigenous capability without compromising quality, health, safety and environmental standards."(Menas, 2008)*

Or ministry of energy of Ghana defines local content to the level of using Ghanaian local expertise, goods and services people, business and financing in oil and gas activities (Ministry-of-energy, 2010).

The best mechanism is when discussing local content try not to use term at all and instead simply say what you mean (Warner, 2011). IPIECA (2011) define local content as:

> *"Local content is the added value brought to a host nation (and regional and local areas in that country) through the activities of the oil and gas industry. This may be measured (by project, affiliate, and/or country aggregate) and undertaken through:*
>
> - *Workforce development:*
> - *Employment of local workforce; and*
> - *Training of local workforce.*
> - *Investments in supplier development:*
> - *Developing supplies and services locally; and*
> - *Procuring supplies and services locally."*

But the general goal is to have a positive effect to the local economy and development of industrial basis of the country. Following Table 1 summarize the local content definition.

The table shows all the up to date definitions of local content across scholars in addition to the countries' definitions of local content in their current statute book. The aspects of the definitions that are important are either value[3] or physical[4] metric, such as what they mean about local content, whether the local content should contribute to the national economy or if the definition is just for petroleum industry.

---

[3] Value of locally manufactured components to be at least as large as a specified percentage of either the value of all purchased parts or of the final good's value (Munson and Rosenblatt, 1977)

[4] Requires a fraction of the total number of components or raw materials used to produce the final good to be of domestic origin (Munson and Rosenblatt, 1977)

Table 1 - local content definitions in literature

	Source	Value metric	Physical metric	Using local resources (domestically produced goods and services)	Contributed to the national economy	Peculiar to Petroleum industry
Scientific journals and books	(Warner, 2010) (Warner, 2011)	*		*	*	
	(Neff, 2005)	*				
	(Lahiri and Ono, 2003)		*	*		
	(Aarseth, 2011)		*	*		
	(IPIECA, 2011)	*	*	*	*	*
	(Secretariat, 1999)			*		
	(Veloso, 2001)	*	*	*		
	(Tordo et al., 2011)			*	*	
Countries point of view	Nigeria • (Menas, 2008) • (Balouga, 2012b) • (Stephen, 2011)	*		*		*
	Brazil • (Prominp, 2008) • (ONIP, 2011) • (Oxford-Analytica, 2010) • (Guedes et al., 2009)	*		*	*	*
	Ghana • (Ministry-of-energy, 2010)		*	*		*
	Oman • (Muscatdaily, 2012) • (Oman, 2012)	*	*	*	*	*
	Russia • (Menas, 2008)	There is no mention of any time frame set for meeting local content requirements, nor any definition of Local Content and how it is calculated in production sharing agreements. But most of them are physical metrics for using local equipment and labor content.				
	China • (Menas, 2008)	Local content provisions do not exist in the published legislation, only in secret internal directives known as *Neibu*.				
	Kazakhstan • (Menas, 2008)		*	*		*

The table shows that not all definitions concern that local content should contribute to the national economy and most of them –countries point of view- are just industry specific definitions. It shows that all definitions are unique or some countries have vague definition. But all the definitions seem to have the common agenda, that local content means using local resources or domestically produced goods and services.

In this thesis the nations' expectations are not concern however, example of various mechanisms to implement local content policies can show us what kind of expectations are important as well as the definition of local content based on nations prospects (Tordo et al., 2011):

- Simple contractual requirements that favor the use of local goods and services or impose training obligations,
- Regulation and taxation that discriminate in favor of local industries, and other protectionist measures,
- Regulation or contractual obligations that foster the transfer of technology from international to domestic companies,
- Bidding parameters that include local content among the criteria for winning oil and gas exploration and production licenses and contracts,
- Incentives to foreign investors to reinvest their profits domestically,
- Investment in infrastructure and education,
- The mandatory incorporation of foreign companies,
- Local ownership requirements,
- Direct government intervention through state owned enterprises (SOEs).

2.2. Local content and WTO

Acts like local content requirements and export performance requirements[5], etc which can have adverse effects on trade, are known as trade-related investment measures (TRIMs) (Secretariat, 1999). The full list of TRIMs is presented in the Table 2.

---

[5] governments compel the investor to undertake to export a certain proportion of its output

Table 2 - An illustrative list of TRIMs adopted from (Secretariat, 1999)

Local content requirements (LCRs)	Impose the use of a certain amount of local inputs in production.
Trade-balancing requirements	Oblige imports to be equivalent to a certain proportion of exports.
Foreign exchange balancing requirements	Stipulate that the foreign exchange made available for imports should be a certain proportion of the value of foreign exchange brought in by the firm from exports and other sources.
Exchange restrictions	Restrict access to foreign exchange and hence restrict imports
Domestic sales requirements	Require a company to sell a certain proportion of its output locally, which amounts to a restriction on exportation.
Manufacturing requirements	Require certain products to be manufactured locally
Export performance requirements (EPRs)	Stipulate that a certain proportion of production should be exported
Product mandating requirements	Oblige an investor to supply certain markets with a designated product or products manufactured from a specified facility or operation.
Manufacturing limitations	Prevent companies from manufacturing certain products or product lines in the host country.
Technology transfer requirements	Require specified technologies to be transferred on non-commercial terms and/or specific levels and types of research and development (R & D) to be conducted locally.
Licensing requirements	Oblige the investor to license technologies similar or unrelated to those it uses in the home country to host country firms
Remittance restrictions	Restrict the right of a foreign investor to repatriate returns from an investment.
Local equity requirements	Specify that a certain percentage of a firm's equity should be held by local investors

TRIMs have been used mainly, if not exclusively, by developing countries to promote development objectives (Secretariat, 1999). Because five of the TRIMs from the list in Table 2 are inconsistent with GATT rules on national treatment and rules are against the use of quantitative restrictions, and are prohibiting countries from using them. TRIMs considered inconsistent with the provisions of Article XI of GATT and against the use of quantitative restrictions on imports and exports (Secretariat, 1999). Five of the TRIMs that are prohibited by WTO are:

- Purchase or use by an enterprise of products of domestic origin or from any domestic source (local content requirements),
- That an enterprise's purchase or use of imported products should be limited to an amount related to the volume or value of the local products it exports (trade-balancing requirements).
- Restrict imports to an amount related to the quantity or value of the product exported (i.e. trade-balancing requirements constituting restrictions on imports);
- Restrict access to foreign exchange to an amount of foreign exchange attributable to the enterprise (i.e. exchange restrictions resulting in restrictions on imports);
- Specify exports in terms of the volume or value of local production (i.e. domestic sales requirements involving restrictions on exports).

As we can see a local content requirement is one of the banned rules for the WTO members (are shown in the map). The map shows that most of the countries in the world are members of WTO and 148 members of the WTO account for approximately 95 percent of world trade, and another 30 countries applying for membership as of 2005 (Jain, 2006); consequently, they should ban local content rules in their international trade.
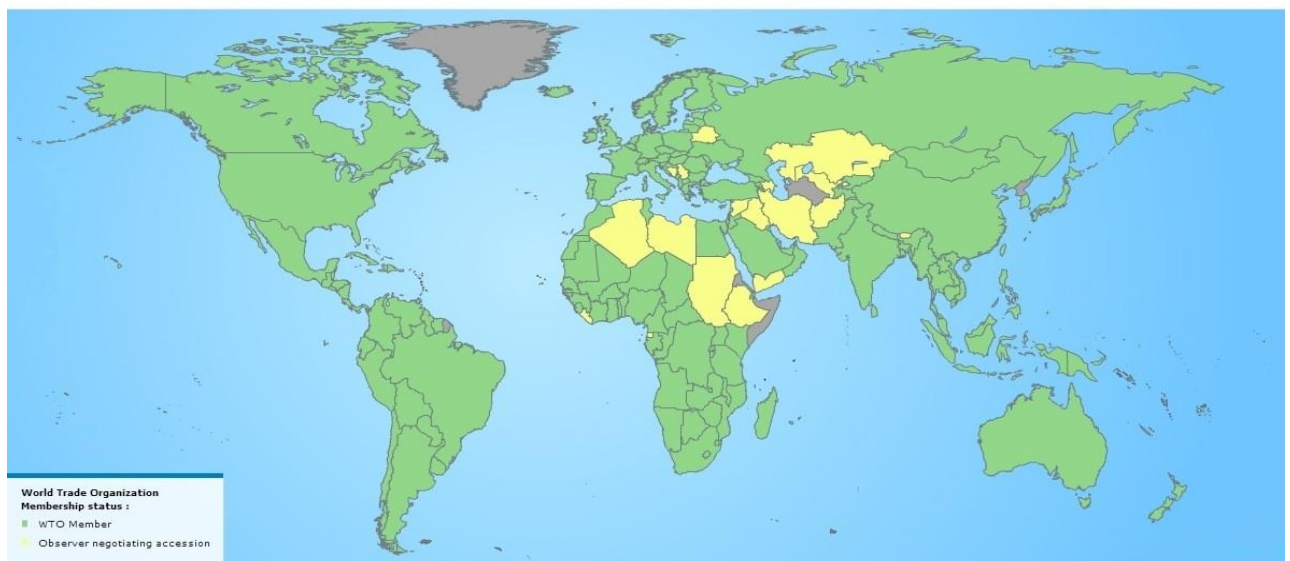
Figure 3 - WTO members, obsevers and non-memebers adopted from ((WTO), 2013)

Not only WTO but also other International organizations have strongly attacked local content requirement. Content requirements may formally disappear at a national level because of WTO regulations on Trade Related Investment Measures but local content requirements are likely to continue on an informal basis, at a supra-national basis and explicitly in developing countries, which have been given some latitude in the adoption of these regulations (Veloso, 2001).

2.3. Local content strategy

International oil companies (IOCs) are looking for a way to answer local content needs in the countries that they have projects on them. Some examples of oil companies' local content strategies are in the following table:

Table 3 - Oil & gas companies local content strategy

Company	Strategy name	Main components
ExxonMobil • (ExxonMobil, 2008)	National content strategy	• Workforce development • Supplier development • Strategic community investments
Statoil • (Statoil, 2010 - 2011)	Positive local impacts – Local content	• Local recruiting • Local procurement • Local supplier development • Education and training
Total • (Total, 2012)	Local content programs	• Local Training and Recruitment • Increase the Number of Nationals in the Workforce • Supporting Local Entrepreneurs • Supporting Small and Medium-Sized Businesses
BP • (2005) • (BP, 2009)	Local content development strategies	• Local supplier development • Develop local expertise • Local supplier participation
Shell • (Shell, 2013)	Impact on local communities	• Creating jobs • Capacity and technology building • Contracting and business opportunities • Social investment.

According to the literature, it is better to look at this issue in a strategic way. There are some reasons to look at local content as a strategic issue in global projects:

First, it was a requirement from governments or national oil and gas companies that IOCs should have a plan to ensuring local content in their project like Nigeria that required a 40 percent local content component for all oil and gas projects in its jurisdiction by the end of 2007. This component was increased to 70 percent by the end of 2010 (Australia, 2011). In addition, every multinational oil companies in Nigeria must place a minimum of 10 percent of their annual profit in Nigerian banks. Also at least 50 percent of the asset of any companies that are seeking to execute oil and gas contract in Nigeria must domicile in Nigeria (Menas, 2008). So it is more than a business compliment and it is part of obligation that governments force companies to ensure it in their projects.

Second, nowadays, local content is considered as corporate social responsibility in emerging

and undeveloped economies. For instance, Statoil enjoys a positive reputation among NGOs and IOCs alike as one of the more responsible operators in Nigeria (Menas, 2008). Statoil (2010 - 2011) describes in its website about local content:

> *"We aim to make investments that create and maximize shared value for the benefit of both our shareholders and the countries in which we operate"*

Or Statoil Nigeria's Corporate Social Responsibility program in the Akassa Community has received a good deal of positive coverage, culminating in the project earning Statoil the 2005 World Petroleum Congress award for Best Social Project (Menas, 2008). Or Total (2012) oil and gas company talks about it as:

> *"Increasing the local content of our projects is a way of sustainably enhancing skills and building industrial capacity in host countries. This in turn spurs economic and social growth."*

Finally, local content can have positive impact for both company and country. More recently, local content has come to include wider economic diversification, thus going beyond the oil and gas sector value chain (Tordo et al., 2011). For instance, it can bring:

- *reductions in operational costs by keeping expatriate staff to a minimum;*
- *smoother flowing supplies of goods and services;*
- *a consistently renewed license to operate*
- *enhanced engagement with stakeholders(IPIECA, 2011)*

Or what Statoil (2010 - 2011) confess about it:

> *"Investing in local content helps us to mitigate risks, while enhancing the benefits both to our business and the societies in which we operate. Ultimately, we believe it helps to drive efficiency, reduce costs and improve project execution"*

So given the growing importance of local content, many companies see it as a strategic issue that can have a direct impact on a range of core business functions, such as business development, procurement and operations (IPIECA, 2011). Furthermore, local content requirements that reduce taxation and import duties can force companies to rearrange their supply lines (Koudal and Engel, 2007).

In addition to the above reasons, Warner (2011) provide some theories behind the role of contracting and procurement strategy in effective local content management. The five mutual exclusive "rights" of procurement process (Emmett, 2008) are seek to secure equipment, materials and services at the right price, at the right time, to the right quality, in the right quantity and from right place, in pressure they can make trade-offs. And to minimize these tradeoffs the clients (like IOCs) need to be strategic in their procurement planning for a particular investment, project or operation (Warner, 2011).

2.4.   Local content challenges and opportunities

There is not so many articles or books to show what kind of opportunities local content can have as well as what kind of drawbacks it can bring to the projects. In addition, not so many articles exist which can shows what kind of challenges can happen during development of local content strategy in oil and gas projects in emerging economies.

But there are some indications based on some oil and gas institution, IPIECA (2011) saying that there is some benefits regarding local content programs which are:

- reductions in operational costs by keeping
- expatriate staff to a minimum;
- smoother flowing supplies of goods and services;
- a consistently renewed license to operate; and
- Enhanced engagement with stakeholders.

It is important to mention that these opportunities are for the companies like IOCs, not for the country and government, because the host government can gain other benefits from the local content programs which are not the concern of this study. Also most of documents are concern about government point of view about local content.

In other situations challenges that may occur during the local content development program are (IPIECA, 2011, Sigrid et al., 2011):

- Lack of qualify labor
- Lack of basic infrastructure
- Low quality of educational systems
- Unavailability of finance and the condition of infrastructure
- Unsecure contracts and tendering

To sum up, there is not extensive article about this area and this may not let us to show the exact opportunities and challenges which can bring along with local content strategies. This is important for IOCs because they should be aware of the benefits and drawbacks of such local content strategies in their projects.

2.5. Transition economy and emerging economy

In this part we will give the definition of two terms that are called emerging economies and transition economy. They are important for this research goal because most of global oil and gas project are in this kind of economies because of their fertile natural resources like oil, gas and mineral fuels (Crittenden and Crittenden, 2012) and because of their common route of both emerging and transition economy. Both terms are well defined in this section and their characteristics are reviewed to know them better and see why local content strategy developer should be aware of the characteristics of these countries.

2.5.1. Emerging economies

The rise of emerging economies in the global economy, cause many scholars to become interested in these countries (Hitt et al., 2004, Hitt et al., 2000, Meyer, 2004, Newman, 2000, Peng and Heath, 1996, Ramamurti, 2004, Peng et al., 2008, Crittenden and Crittenden, 2012, Arnold and Quelch, 1998, Chacar and Vissa, 2005, IFC, 2007, Koudal and Engel, 2007, Wright et al., 2005).

Emerging economies have liberalized their economies by launching upon an economic reform program to move from a command toward a more free-market economy. Such transformations tend to break up oligopolistic control and create a shift to the buyer's market, which in turn fosters a competitive business environment (Filatotchev et al., 2001).

By the end of Cold War and resulting in reduce of aid from superpowers or by the downfall of communist governments cause emergence of economic liberalization or generating emerging markets (Arnold and Quelch, 1998). Some scholars discuss that terms of emerging markets and emerging economies should distinguish from each other.

Two characteristic of emerging economies, rapid pace of development and government policies that favor economic liberalization, make them differ among other developing economies (Wright et al., 2005). Emerging economies received significant amounts of foreign direct investment (FDI) inflows and also accounted for 12 per cents of the world's FDI outflows, which grew from $1.15 billion in 1970 to $ 207.2 billion in 2011(UNCTAD, 2011) (See Appendix III and Appendix IV). On the other side emerging markets tend to have volatile business cycles and experience economic crises more frequently than developed economies (Arellano, 2008). This issue is even worst in major reserves developing countries (look at Appendix V)(ONIP, 2011).

The emerging economies characteristics can be summarized in the following Table 4 but it is important to know that all the emerging economies are not same (Hitt et al., 2004)

Table 4 - Emerging economies characteristics

Source	Emerging economies characteristics
(Crittenden and Crittenden, 2012)	Demographic trends, Technological development, Natural resources, and Political/Legal unease
(Arellano, 2008)	have volatile business cycles and experience economic crises more frequently than developed economies
(Hoskisson et al., 2000)	Emerging economies, characterized by trends towards "marketization" and privatization
(Guillén, 2000)	in emerging economies, foreign trade and investment policies are far more momentous
(Hitt et al., 2000)	A high potential for economic growth may exist-perhaps greater than that in many developed countries-but volatility and high risks are also present. Given poorly developed financial markets, weak institutions for distribution of capital, and volatility in economic development, capital generally has low availability and high cost in emerging market countries.
(Hoskisson et al., 2000, Narula and Dunning, 2000, Meyer, 2004)	Emerging economies are middle- or low-income economies with growth potential that makes them attractive for foreign investors. These economies typically have less sophisticated market supporting institutions and fewer locational advantages based on created assets, such as infrastructure and human capital
(Peng et al., 2008)	in emerging economies, country effects, which are proxies for institutional differences, are more salient
(Arnold and Quelch, 1998)	Have the absolute level of economic development, Most EMs have average annual GDP of more than 5 percent since 1990, with rates nearer 10 percent in East Asia. Several countries frequently described as EMs fail this test, Have a tendency to the extent and stability of a free-market system, Have the of lack of basic marketing infrastructure: there is little or no market data, nonexistent or poorly developed distribution systems, relatively few communication channels, and both a lack of regulatory discipline and a propensity to change business regulations frequently and unpredictably, EMs are characterized by high levels of product diversion within or between countries, widespread product counterfeiting, and opaque power and loyalty structures within complex networks of local business and political players, EMs are high-risk environments for entrant corporations, both because of their heritage of political and economic instability, and because of the current stresses resulting from the rapid implementation of economic reform programs, National and local governments and other regulatory bodies are far more influential in EMs than in developed-country market systems, The great importance of personal relationships with key local players, in both the public and private sectors,

	Low advertising rates per capita in EMs enable companies to launch brands and build brand awareness very economically, Consequent learning and opportunities for innovation in marketing or operations.
(Wright et al., 2005)	Rapid pace of development and government policies that favor economic liberalization

2.5.2. Transition economy

The relation between two terms "transition" and "emerging" economies need to clarify but totally emerging economies is a broader classification than transition. Sometimes these nations are transitioning to an open market economy with an increase in working age population so a country may be both emerging and transitional.

Transition economy expression has been used worldwide after the collapse of Communism in central and Eastern Europe. Transition economies are defined by four characteristics which make them differ a little from emerging economies (IMF, 2000):

- **Liberalization:** price determination can be done in free markets and lowering trade barriers.
- **Macroeconomic stabilization:** under control decreasing inflation. This process requires discipline over the government budget, the growth of money and credit and progress toward sustainable balance of payments.
- **Restructuring and privatization:** developing viable financial sector and reforming the enterprises in these economies to deliver them capable of producing goods that could be sold in free markets and ownership transfer into private hands.
- **Legal and institutional reforms:** redefine the role of the state in these economies, establish the rule of law, and have tendency to competition policies.

While an emerging economy is moving from developing to developed (or industrial) economy, a transition economy is one evolving from a planned economy (meaning one controlled by the government, as in the former Soviet bloc countries) to a free market economy like those in North America and Europe. So a country can be both emerging and transition. The following countries called transition economies (IMF, 2000):

Albania, Armenia, Azerbaijan, Belarus, Bulgaria, Cambodia, China, Croatia, Czech Republic, Estonia, Georgia, Hungary, Latvia, Lithuania, Kazakhstan, Kyrgyz Republic, Laos, Republic of Macedonia, Moldova, Poland, Romania, Russia, Slovak Republic, Slovenia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan and Vietnam.

Finally, by looking at emerging economies characteristics in Table 4 as well as similar pattern in transition economy, companies can make their local content strategy more to the point and specific. Local content strategy should be flexible to the economy of the local country and not just look them as a challenging environment but consider them as opportunities that they have such as their fertile market and competitive situation.

2.5.3. Countries' local content's laws and in practice:

The other part of local content issue related more to the government of the countries which make regulations and requirements for the oil and gas companies, in the following part some specific countries will be explained about their local content laws and their local content in practice.

Because of the following reason these countries have been chosen:

- They are from emerging economies,
- They all required local content in their oil and gas projects,
- They are from three different continents (South America, Africa and Europe),
- Their local content's requirement brings a lot of discussion, opportunities and challenges for all parties of contracts,
- They can be a sample for other countries that are just think to have local content requirement in their project,
- The companies that were interviewed and people who answered the survey have enough information about these countries and their local content regulations.

Brazil

Brazil is largest, most populous country in the Latin America and the Caribbean (WorldBank, 2013) and called "Latin America's China" by Menas (2008). Despite of the new global slowdown Brazil's strong internal market is less vulnerable to outer crisis, and Brazilians are profiting from stable economic growth, relatively low inflation rates and improvements in social well-being(WorldBank, 2013). The following table of 2013 – 2017 Business & Management Plan of national oil company – PETROBRAS shows in which segments they are invest more, this issue is going to discuss during our survey as well.

Table 5 - 2013-2017 Business & Management Plan (PETROBRAS, 2013)

Segments	Investments - US$bn	%
Exploration & Production (E&P)	147.5	62
Downstream	64.8	27
Gas & Power (G&P)	9.9	4
International	5.1	2
PBio - Petrobras Biocombustíveis	2.9	1
BR Distribuidora	3.2	1
ETP - Engineering, Technology and Procurement Area	2.3	1
Other areas - Finance, Strategic and Corporate-Services Areas	1.0	0.4
Total	**236.7**	**100**

Previous president, Lula de Silva has a quote that is "Everything which can be done in Brazil should be done in Brazil"(Menas, 2008) which shows Brazilian interest to localization of their industries and why they are among the best local content developers in the world. They define their LC objectives:

> *"Maximize goods and services national industry content, within competitive and sustainable basis, in the implantation of oil and gas projects in Brazil and abroad."(Prominp, 2008)*

And their regulation seems effective after the creation of Prominp (Program of the National Oil and Gas, coordinated by the Ministry of Mines and Energy), which has a result of industry participation in national sector investment that increased from 57% in 2003 to 77% in the first quarter of 2010, representing a significant additional amount of U.S. $ 19.6 billion of goods and services contracted national market and generate additional 815,000 jobs in this period (Prominp, 2008, Guedes et al., 2009).

Also Petrobras aims to create some new 100,000 jobs by 2010 through ratcheting up local content requirements and implementation, and its 2006-2010 Petrobras strategic investment plan calls for 65% of equipment and services to be sourced from domestic suppliers (Menas, 2008).

Brazil as an emerging economy:

By reviewing the four characteristics[6] of emerging economies of Crittenden and Crittenden (2012) research, Brazil is an oil producer since the beginning of the 1930s, ranks 6th in world proven oil reserves and oil production (Menas, 2008) while it is 69th (out of 176 countries) in the corruption perceptions index 2012 (International, 2012) and ranked 87 among other 143 countries for its Safety and security (Legatum, 2012) which shows the complexity of environment and market.

Brazil Local content requirements:

Petrobras took power in 1953, and during 60s and 70s with discovery of the first offshore fields drove the development of the country's offshore oil and gas industry, mainly in deep and ultra-deep fields (Klueh et al., 2007). In 1997, Brazil's petroleum sector was deregulated and opened to foreign participant by the Petroleum Law 1997. This law ended Petrobras' monopoly and created an industry regulatory agency by the name of National Petroleum Agency (ANP)(Australia, 2011); nevertheless in 2003, the Brazilian Government has decided to revitalize this industry, including minimum Local Content requirements in the offshore development Projects(Guedes et al., 2009). One of the main goals of developing mechanisms for maximizing local content is making a temporary tool for the supply chain to achieve the learning curve and be able to compete in an environment without incentives (ONIP, 2011) as it has been claimed shown in ONIP (2011) as one of the suggested policies for the development of the offshore goods and services chain (see Figure 4).

---

[6] Demographic trends, Technology development, Natural resources and Political/Legal unease

Figure 4 - 5th suggested policies for the development of the offshore goods and services chain in Brazil by simplifying and increaseing transparency regarding the policies of local content (ONIP, 2011)

Average local content commitments in Round 5 licensing, in August 2003 were: 78-100% in exploration activities, 30-55% in drilling, and 5-90% in development.(Klueh et al., 2007) and Local Content clause requires that such contracts to be given preference to hiring Brazilian suppliers submit their bids whenever possible price, time and quality equivalent to other vendors to submit bids, thus increasing the share of domestic industry in competitive basis projects and in exploration and development of oil and natural gas (Prominp, 2008).

The goals of the local content policy (there is some overlap between them) are as follows (Menas, 2008):

- To reduce the technological shortcomings of Brazilian suppliers by fostering partnerships between foreign and Brazilian companies (using the resources of PROMINP and Petrobras)
- To increase the skill-set of the workforce generally and accelerate the knowledge transfer process
- To implement PROMINP's National Professional Qualification Plan of Prominp (PNQP): increase the number of skilled Brazilian employees in the oil and gas sector to 70,000 workers by 2008
- To create some 100, 000 new jobs by 2010

Measuring Local Content

Local content will be measured according to the following formula (Prominp, 2004):

$LC = \left(1 - \frac{X}{Y}\right) \times 100$ where: X = Value of the imported components

These include:

a) Values of materials and equipment directly imported by the oil company, including

---

importation tax

b) Values of materials and equipment directly imported by the main contractor, including importation tax

c) Values of imported materials and equipment purchased by the main contractor in the local market, excluding internal tax

d) Values of imported materials and equipment purchased by the oil company in the local market, excluding internal tax

e) Values of foreign services needed for the project

Y = Total value of the project, excluding internal tax

While it can be argued that Brazil's local content policy has led to growth and diversity in the Brazilian petroleum services sector, its prices tend to be relatively high(Australia, 2011).

Nigeria

Nigeria is described by the World Bank:

> *"With a population of 158 million people, Nigeria is the largest country in Africa and accounts for 47 percent of West Africa's population. It is also the biggest oil exporter in Africa, with the largest natural gas reserves in the continent. With these large reserves of human and natural resources, Nigeria is poised to build a prosperous economy, significantly reduce poverty, and provide health, education and infrastructure services to its population needs."(WorldBank, 2013)*

Nigeria is the most populous country in Africa, and a demographic growth rate of 2%: clearly, the potential market – of consumers and workers – is huge. GDP growth has stayed above 5% since 2004, giving Nigeria a GDP in 2008 of $220.3 billion, the second largest in the continent behind South Africa(Menas, 2008).

Nigeria oil and gas industry began in the 1930 when Royal/Dutch Shell began exploration in Nigeria's onshore areas, primarily the Niger Delta region. By 1972, Nigeria's onshore and shallow waters oil production had reached 2 million barrels per day. In 1995, Shell discovered the massive offshore Bonga field that led to a move from onshore to offshore operations in Nigeria(Klueh et al., 2007).

Nigeria as an emerging economy:

Nigeria like other emerging countries has its own characteristics and like other African oil states has followed a similar pattern: corruption, opaque governance, the centralization of political and economic power in the hands of the elite, and a failure to diversify of the economy away from 'black gold'(Menas, 2008, Otaha, 2012).

Experts believe that Nigeria have two important cases to look at. First Nigeria exhibits a clear case of 'Dutch Disease', but it is clear that the focus on oil has increased rent-seeking, eroded institutional legitimacy and weakened non-oil sectors of the economy. The conflict in the Niger Delta is arguably the logical conclusion of this process (Menas, 2008, Ahunwan, 2002, Otaha, 2012).

Nigeria Local content requirements:

In order to meet the concerns of communities located on its oil rich Niger Delta, in 2006 Nigeria initiated a Local Content Policy to increase local capacity in the petroleum industry(Australia, 2011). Targets of the local content policy as set out by the Federal Government of Nigeria as by 2006 are the local content of the petroleum industry in Nigeria be 45% and by 2010, 70% have been attained. In monetary terms, it is expected that over US$4 billion worth of oil contracts are to be handled by indigenous oil companies in Nigeria within the relevant period(Menas, 2008).

There are a number of provisions in existing legislations and regulations that give some normative forces and statutory backing to local content policies. Key foundations of the LC rules are (Menas, 2008, Nigeria-Minister-of-Petroleum-Resources, 2009):

> *"Paragraph 38, Schedule 1 of the Petroleum Act, provides that the holder of an Oil Mining Lease shall within ten years from the grant of his lease ensure that (a) the number of Nigerians employed by him in connection with the lease in a managerial, professional and supervisory grades shall reach at least 75% of the total number of persons employed by him in those grades, and (b) the number of Nigerians in any one such grade shall be not less than 60%, and (c) all skilled, semi-skilled and unskilled workers are Nigerians."*

However, in the following areas and from the Nigerian perspective, more or less, projects fail to meet or exceed provisions (Menas, 2008):

- Over dependence on raw materials imported from foreign countries;
- Use of expatriate staff in top level positions in the industry;
- Jobs and contracts still being performed by multi-national oil companies or subsidiaries of foreign companies
- Inadequate funding for indigenous operators' bottlenecks

In addition, there are some limitation to the local capacity by (Menas, 2008, Balouga, 2012a):

- A low level infrastructure and industrial base
- High charges of funding oil and gas projects
- Inaccessibility of funds from financial institutions/ high rate of interest rate
- Growing concerns regarding security of life and investment
- Lack of experienced personnel with adequate technical competency to carry out complex and highly technical assignments.

In recognition of the bottlenecks to local content development highlighted above, the NNPC in conjunction with the oil majors have supported the Nigerian Content Fund which has been set up to make funds available to local companies at affordable rates(Menas, 2008).

Measuring Local Content

In addition to the 40 per cent local content component for all oil and gas projects and increased to 70 per cent by the end of 2010, they need every multinational oil companies in Nigeria must place a minimum of 10 percent of its annual profit in Nigerian's banks. Also at least 50 per cent of the asset of any companies that was seeking to execute oil and gas contract in Nigeria must domicile in Nigeria. This is to ensure that a large chunk of the

payment for the contract resides in Nigeria (Australia, 2011).

Russia

Largest country in the world with population of 141.9 million[7] and 1.858 billion GDP[8] (WorldBank, 2013) can bring more opportunities to the Russia than challenges. Russia's economy, although based on strong traditional sectors such as the defense industry and the oil and gas industry. The country is the world's largest natural gas supplier and exercises control over a vast network of pipelines stretching from Europe to China (Menas, 2008).

Russia an emerging economy

Russia is a part of BRIC countries and by looking at its characteristics we can find why it is called as both emerging and transition economy. Russia is one of the world richest countries in raw materials and contains around 20 percent of the world's production of oil and natural gas and also possesses large reserves of both fuels.

The World Bank has described six major component of governance which are: voice and accountability, political stability, government effectiveness, regulatory quality, rule of law, and control of corruption. Table 6 indicates percentile rank of BRIC countries as well as some developed countries.

Table 6 - Components of governance 2004

Country	Voice and accountability	Political stability	Government effectiveness	Regulatory quality	Rule of law	Control of corruption
Brazil	55.8	43.7	58.2	58.1	46.9	53.2
Russia	25.7	21.8	48.1	30.5	29.5	29.1
India	53.9	24.3	55.8	26.6	50.7	47.3
China	7.3	46.6	60.1	35.0	40.6	39.9
France	90.8	63.1	90.4	77.3	88.9	88.7
Italy	82.0	56.3	70.2	81.8	71.0	74.9
USA	89.3	60.7	93.8	86.7	92.3	92.6
UK	94.2	71.4	94.2	94.1	93.7	94.6
Germany	94.7	79.1	88.5	88.7	93.2	93.1
Japan	78.2	83.5	86.5	83.7	89.9	86.2

According to the table, Russia has very low control on corruption especially among other emerging economies. In addition, Russia has unstable politics among other countries in this experiment.

---

[7] 2011
[8] 2011

Russia Local content requirements:

While Russia is under an obligation to abolish the WTO-inconsistent aspects of its investment-incentive scheme by July 2018, there exists no legal definition, nor any agreed method for calculating overall levels. Consequently, there are a whole range of different methods employed – man hours, finance, even volume or weight of goods supplied (Menas, 2008).

The local content policies that being used up to now in Russian's oil and gas projects can be grouped into two broad strategies: Price referencing and modification to the procurement policy.

Procurement policy

Major component of the local content program in oil and gas projects has been an attempt to render the procurement process more simple, cheap and accessible to indigenous SME's than before. This has entailed: The creation of a Joint Committee for Russian Content, training and Development Programs aimed at strengthening small firms' qualifications for large projects, the launch of a website providing information to contractors and vendors on upcoming tenders and opportunities, providing feedback to existing SME's on which firms met the criteria and those who needed to alter their existing works' programs, increasing vendor databases, and Russian Design Institutes have been brought on board to raise client's local content levels and help SME's standardize their activities(Menas, 2008).

Price Preferencing

Price preferencing is a more direct and simplistic alternative to change in procurement policy. Under a price preferencing strategy, local and Russian firms are preferred and selected over international suppliers in the allocation of contracts, regardless of the lower price that multinational's one can offer on account of their economies of scale (Menas, 2008).

2.6. Global oil and gas projects management strategies

There are numerous literature about global project management, and global project strategies. This issue is important for us since managing the project stakeholders by taking into account their needs. Requirements are an essential part of project success (Bryde and Robinson, 2005, Cleland, 1986, Diallo and Thuillier, 2005, Olander and Landin, 2005, Olander, 2007) and local content is one of the important and complicated expectations of global oil and gas projects in numerous economies and depend on contracts it can be categorized as one-dimensional quality[9] factor of bidders offer. Also Salazar-Aramayo et al. (2013) mentioned that, the global oil and gas project characteristics like global presence, economic importance and environmental sensitivity, the oil and gas sector are subject to force from diverse stakeholders cause to increase its complexity.

---

[9] If the penalty equals the reward, then it is classified as a one-dimensional factor in Kano quality attributes CHEN, L.-F. 2012. A novel approach to regression analysis for the classification of quality attributes in the Kano model: an empirical test in the food and beverage industry. *Omega,* 40**,** 651-659.

On the other hand an example of complex and high-risk projects is the exploration and production (E&P) of oil and gas, occurring global in diverse geographical and socioeconomic environments (Salazar-Aramayo et al., 2013). The difficulty of this kind of project comes from its economic threat as a consequence of ambiguous cash flow (future cost and prices) and the possibility of finding and producing inadequate volume (Motta et al., 2000, Suslick and Schiozer, 2004, Weijermars, 2009).

Global projects have the characteristics of international, distributed and virtual projects. This term include people from different organizations working in various countries across the world (Binder, 2007).

To manage a global project, looking at factors that affect performance of global projects can be a solution. In the previous studies the following factors are introduced as factors of influence on performance of global projects:

Table 7 - Factors of influence on performance of global projects by (Anantatmula and Thomas, 2010)

Influencing factors	explanation	Sources
Communication	Language and associated cultural differences, an obvious obstacle to communication, but its importance is apparent with the increasing use of the World Wide Web.	Beranek et al. (2005), Diallo and Thuillier (2005), Dodson (1998), Grosse (2002), Jarvenpaa and Leidner (1999), Khazanchi and Zigurs (2006), Lientz B. P. and Pea K. P. (2003), Lin and Berg (2001), Nidiffer and Dolan (2005), Rad and Anantatmula (2009), Sarker and Sahay (2002)
Cultural Values	Religion has an impact on a project in terms of work ethics, values, and holidays. Who will work with whom, and the like. Beliefs. An outcome of culture, can influence work practices Local, regional. And national management practices can vary from country to country and could be different from Western nomrs such as time off from work. Hierarchical authority, gender issues. And the like.	Dubé and Paré (2001), (Grosse, 2002), (Horii et al., 2005), (Jarvenpaa and Leidner, 1999), (Lientz B. P. and Pea K. P., 2003), (Nidiffer and Dolan, 2005)
Global Business	International market. International economics, international finance.	(Lientz B. P. and Pea K. P., 2003), (Yasin M M et al., 2000),

Environment	And currency—an understanding of all these global business environmental issues will facilitate making better project decisions throughout the project life cycle.	
Legal and Political Issues	Country-specific laws. Environmental regulations, political issues, and acceptable standards can impact a global project.	(Halpin and Huang, 1995), (Kerzner, 1989), (Lientz B. P. and Pea K. P., 2003), (Yasin M M et al., 2000)
Integration Management	Vertical [within the organization] and horizontal [External to the organization] integration are critical and can become difficult across regions and countries.	(Kini, 2000), (Erickson and Ranganathan, 2006), (Lientz B. P. and Pea K. P., 2003), (Nidiffer and Dolan, 2005), (Yasin M M et al., 2000)
Project Organizational Structure	A cost-effective organizational structure will be decentralized and flexible to collaborate and manage global projects successfully to meet customer needs	(Kini, 2000), (Erickson and Ranganathan, 2006), (Yasin M M et al., 2000)
Global Procurement Management	Procurement management in global projects will have no geographical boundaries. Therefore, it is a challenge to possess the knowledge of the best places to go for materials and labor which can impact global project success.	(Kini, 2000), (Erickson and Ranganathan, 2006), (Lee-Kelley, 2006), (Yasin M M et al., 2000), (Mona Sennara and Francis Hartman, 2002)
Leadership and Establishing Trust	Treating a global project as a standard project can lead to problems. Leadership and people skills are more important for global projects. They help in establishing trust. Micromanaging is a temptation in global projects because of a lack of understanding	(Anantatmula, 2008), (Kini, 2000), (Dodson, 1998) (Erickson and Ranganathan, 2006), (Grabowski and Roberts, 1998), (Jarvenpaa and Leidner, 1999), (Kanawattanachai and Yoo, 2002), (Lientz B. P. and Pea K. P., 2003), (Majchrzak et al., 2000), (Nidiffer and Dolan, 2005), (Mona

	of the capabilities of the project team members including contractors. And the absence of trust.	Sennara and Francis Hartman, 2002), (Yasin M M et al., 2000)
Planning, Execution, and Control	Planning, execution and control—which include risk management—are impacted by cultural differences. Varying working conditions, and local issues.	(Erickson and Ranganathan, 2006), (Yasin M M et al., 2000), (Nidiffer and Dolan, 2005), (Mona Sennara and Francis Hartman, 2002)
Stakeholder and Customer Satisfaction	Stakeholder and customer satisfaction-cultural, financial, and communication complications can occur in terms of determining what the customer considers to be a successful project. Stakeholders need to be part of the global project process and should be made to feel that they are in a win-win situation with respect to the project outcomes.	(Nidiffer and Dolan, 2005), (Yasin M M et al., 2000)
Fast and Reliable Information Systems	Fast and reliable information systems are essential for success in global projects. Communication and control systems that are standard, compatible and reliable are essential for knowledge sharing and those that can be used in participating countries are essential.	(Adenfelt and Lagerström, 2006), (Dubé and Paré, 2001), (Lehmann, 2004), (Lientz B. P. and Pea K. P., 2003), (Mona Sennara and Francis Hartman, 2002), (Yasin M M et al., 2000)
Time-Zone Differences	Time zone differences can create communication [meetings] problems, specifically in synchronous mode. However, time zone differences can also allow work to proceed Z4 hours a day	(Lientz B. P. and Pea K. P., 2003), (Nidiffer and Dolan, 2005), (Yasin M M et al., 2000)

In addition to that, by the survey of Anantatmula and Thomas (2010) Stakeholder and customer satisfaction, global business environment and legal and political issues are among 4th, 7th and 9th rank in the success factors (see Table 8). Also they mentioned that the performance of global projects vary depending upon the industry in which they are executed (Anantatmula and Thomas, 2010).

Table 8 - Success factors and their impact (Anantatmula and Thomas, 2010)

Global Project Performance Factor	N = 76	
	Mean value (Impact)	SD
Communication	4.86	0.34
Leadership and establishing trust	4.76	0.49
Planning, execution and control	4.67	0.53
Stakeholders and customer satisfaction	4.47	0.70
Fast and reliable information system	4.16	0.86
Culture	4.13	0.83
Global business environment	3.95	0.97
Integration management	3.92	0.83
Legal and political issues	3.81	1.01
Organization structure	3.79	0.87
Global procurement management	3.78	0.99
Time-zone differences	3.60	1.00

It shows that the best way toward successful global project is to manage the stakeholders and customers besides considering the situation and business environment of that country. Also a project creates a dynamic context for stakeholder management because a project moves through different phases during its lifecycle (Kelley, 1982).

The importance of stakeholder management appears when project stakeholders' potential to take action and their ability to influence the project management's decision making changes over the project lifecycle, as the project proceeds from the investment preparation phase through the project execution phase to the operations phase (Aaltonen and Kujala, 2010).

However, the majority of prior project research have focused on the management of primary stakeholders[10] that are important with regard to the project's economic interests but current researches try to explore the secondary stakeholders[11] as well (Aaltonen and Kujala, 2010). It is project management responsibility to balance different demands of various stakeholders in their decision making process.

To sum up, it is why in this thesis, the global project management factors have shown to describe that stakeholder's management, both primary and secondary stakeholders are important when trying to develop a local content strategy and successful local content strategy need to have stakeholders management in hand.

The thesis is not going to review the strategic project management theories because it is out of the scope of this study. But showing that stakeholder management is one of the main success factors in global projects and understanding of their expectations like local content can cause a successful project is a main reason to bring this part.

2.7. Literature review result

By looking at the previous work in project management and organizational studies in previous years on local content in projects the following results are clear to us now:

- Local content definition does not have a unique definition and its definition varies by countries, scholars and industries,
- There was not any work on the effect of local content requirement on global projects neither in emerging economies nor in any other economies,
- None of the previous works about stakeholder management studies are concerned about local content expectations during project phases,
- There is evidence of having local content strategies in IOCs but most of them are unique for that particular project and country,
- There is not any pattern which can show how to see local content in organizational and project context.

---

[10] Primary stakeholders are organizations that are in a contractual relationship with the project such as customers or suppliers or have direct legal authority over the project such as governmental organizations (Eesley, 2006).
[11] Secondary stakeholders do not have a formal contractual bond with the project or direct legal authority over the project, but they can influence the project (Eesley, 2006, Clarkson, 1995).

Chapter III Data collecting

The data collation chapter starts with methodology part to show that by using which kind of research methodology the thesis is going to find the solution of the research gap and an answer to the research question. In this chapter the gap in literature that is introduced in previous chapter is going to be answered using practical results.

In next section the mix research methods that were used to gain practical results will be described in detail. Firstly the qualitative research with three standard open-ended interviews will be represented, showing how the data of interviews are analyzed and secondly using the surveys as a quantitative method to conclude in the discussion part follows.

3.1. Methodology

Organizational studies usually obey casual relationships in which it is anticipated that one factor influences another (Schwab, 1999). In organization studies both qualitative and quantitative research can be applied depending on the research goals and questions. This study tries to be an empirical research and like many of empirical researches it is not quantitative. In this thesis both qualitative and quantitative methodologies have been used as qualitative research is common to all traditions of scholarships across the humanities and the sciences (Bernard and Ryan, 2010). The fundamental differences between these two research methods are depicted in Table 9.

Table 9 - Fundamental differences between quantitative and qualitative research strategies (Bryman, 2008)

	Qualitative	Quantitative
Principal orientation to the role of theory in relation to research	Deductive, testing of theory	Inductive, generation of theory
Epistemological orientation	Natural science model, in particular positivism	Interpretivism
Ontological orientation	Objectivism	Constructionism

As Bryman (2008) describe quantitative method in positivism and qualitative method in interpretivism way it is wise to show ontological and epistemological differences of each paradigm (see Table 10):

Table 10 - Broad definitions/explanations of positivism, interpretivism, ontology, epistemology and methodology (Bryman, 2008)

	Positivism	Interpretivism
Ontology		
Nature of "being" nature of the world	Have direct access to the real world	No direct to the real world
Reality	Single external reality	No single external reality
Epistemology		
"Grounds of knowledge" relationship between reality and research	Possible to obtain hard, secure objective knowledge	Understood through "perceived" knowledge
	Research focuses on generalization and abstraction	Research focuses on the specific and the concrete
	Thought governed by hypotheses and stated theories	Seeking to understand specific context
Methodology		
Focus of research	Concentrates on description and explanation	Concentrates on understanding and interpretation
Role of researcher	Detached, external observer	Researcher wants to experience what they are studying
	Clear distinction between reason and feeling	Allow feelings and reason to govern actions
	Aim to discover external reality rather than creating the object of the study	Partially created what is studies, the meaning od phenomena
	Strive to use rational, consistent, verbal, logical approach	Use of pre-understanding is important
	Seek to maintain clear distinction between facts and value judgments	Distinction between facts and value judgments are less clear
	Distinction between science and personal experience	Accept influence from both science and personal experience
Techniques used by researches	Formalized statistical and mathematical methods predominate	Primarily non-quantitative

On the other side, mixed methods research is characterized as research that contains elements of both qualitative and quantitative approaches (Rocco et al., 2003) the benefit of mixing method makes room for both the exploratory inductive process that begins with empirical evidence of the particular and proceeds to a level of abstracting/theorizing/generalizing and the confirmatory deductive process of hypothesis testing of theories (Rocco et al., 2003).

Mixing method can happen at any point or at multiple points within a research project, from the purpose statement and statement of the research question, to the data collection and management, to data analysis, to drawing inferences. Or from the interpretation of the findings and data collection and analysis can be mixed between and within levels (Rocco et al., 2003). Tashakkori and Teddlie (1998) have developed a framework of six types of mixed methods studies which are shown in Table 11.

Table 11 - Summary of Mixed Methods Types

I. Confirmatory investigation Qualitative data Statistical Analysis	II. Confirmatory investigation Qualitative data Qualitative analysis
III. Exploratory investigation Quantitative data Statistical analysis	IV. Exploratory investigation Qualitative data Statistical analysis
V. Confirmatory investigation Quantitative data Qualitative analysis	VI. Exploratory investigation Quantitative data Qualitative analysis

As this research is a mix method both qualitative and quantitative way will be discusesed but before going deep in each method first we should know what is the purpose of this research in the context of a scientific writing, Patton (2001) summarizes some of the major differences among the different kinds of research (Table 12).

Table 12 - Typology of Research Purposes (Patton, 2001)

Types of Research	Purpose	Focus of Research	Desired Results	Desired Level of Generalization	Key Assumptions	Publication Mode	Standard for Judging
Basic research	Knowledge as an end in itself; discover truth	Questions deemed important by one's discipline or personal intellectual interests	Contribution to theory	Across time and space (ideal)	The world is patterned; those patterns are knowable and explainable	Major refereed scholarly journals in one's discipline, scholarly books	Rigor of research, verifiability of theory
Applied research	Understand the nature and sources of human and societal problems	Questions deemed important by an organization, community, or society	Contributions to theories that can be used to formulate problem-solving programs and interventions	Within as general a time and space as possible, but clearly limited application context	Human and societal problems can be understood and solved with knowledge	Specialized academic journals, applied research journals within disciplines, interdisciplinary problem-focused journals	Rigor and theoretical insight into the problem
Summative evaluation	Determine effectiveness of human interventions and actions (programs, policies, personnel, products)	Goals of the intervention	Judgments and generalizations about effective types of interventions and conditions under which those efforts are effective	All interventions with similar goals	What works one place under specified conditions should work elsewhere	Evaluation reports for program funders and policymakers, specialized journals	Generalizability to future efforts and to other programs and policy issues
Formative Evaluation	Improve an intervention: A program, policy, organization, or product	Strengths and weaknesses of the specific program, policy, product, or personnel being studied	Recommendations for improvements	Limited to specific setting studied	People can and will use information to improve what they're doing	Oral briefings; conferences; internal report; limited circulation to similar programs, other evaluators	Usefulness to and actual use by intended users in the setting studied
Action research	Solve problems in a program, organization, or community	Organization and community problems	Immediate action; solving problems as quickly as possible.	Here and now	People in a setting can solve problems by studying themselves	Interpersonal interactions among research participants; informal unpublished	Feelings about the process among research participants, feasibility of the solution generated

Based on Patton (2001) segmentation of research purposes, this thesis is a formative evaluation which is going to improve a policy or program through finding its strengths and weaknesses. The result will be some recommendations for improvements.

Qualitative methods are first and foremost research methods, they are ways of finding out what people do, know, think, and feel by observing, interviewing, and analyzing documents (Patton, 2001) and it usually emphasizes words rather than quantification in collection and analysis of data (Bryman, 2008). Qualitative research methods are:

> "techniques involving small numbers of respondents who provide information about their thoughts and feelings that are not easily projected to the whole population"*(Dillon et al., 1993)*

However, a big obstacle is that, as qualitative research is based on small number of respondents, the result cannot generalize to the whole population (Polonsky and Waller, 2005). There are three well known qualitative methods: focus group, in-depth interviews, and projective techniques (Polonsky and Waller, 2005) and the purpose of the qualitative interviewing is (Patton, 2001):

- to capture how those being interviewed view their world,
- to learn their terminology and judgments,
- and to capture the complexities of their individual perceptions and experiences

This thesis uses interviewing as one of its methodologies. There are three basic approaches to collecting qualitative data through open - ended interviews plus combining approaches (Patton, 2001):

- the informal conversational interview: also called "unstructured interviewing" (Fontana and Frey), it has maximum flexibility to pursue information by the conditions of the interview and the data gathered from this kind of interviews will be different for each person interviewed (Patton, 2001).
- the general interview guide approach: the interviewer will make a list of questions or issues that are to be explored in the course of interview while he/she remains free to explore, probe, and ask questions that will elucidate and illuminate particular subject (Patton, 2001).
- the standardized open-ended interview: this approach need completely structured questions before the interview (Patton, 2001). And Patton (2001) have four major reasons to use this kind of interview:
  - the exact instrument used in the evaluation is available for inspection by those who will use the findings of the study
  - Variation among interviewers can be minimized where a number of different interviewers must used
  - The interview is highly focused so that interviewee time is used efficiently
  - Analysis is facilitate by making responses easy to find and compare
- Combining approaches: the above all strategies are definitely not mutually

exclusive and be used together and this combined strategy offers the interviewer flexibility in probing and in determining when it is appropriate to explore certain subject (Patton, 2001)

Based on above discussion the standard open-ended interview is used because of the following reasons:

- The purpose of the research is highly focused and the interviewee time is limited because of their positions at the companies and the interview time should be used carefully.
- The time limit needs more flexible method to fasten the analysis process.
- Because of the limitation in interviewees time the other methods cannot be used which may take more time than mentioned to the interviewees.

In total 30 emails were sent for inviting potential interviewees to participate in interviews but just three interviews were conducted, two of them with FMC technologies (one person is project director/manager for international project and another person is a Global MPS Africa Development Manager). First person has 25 years experience and second person has two years experience in his current position. The third interviewee was with AkerSolutions and vice president for project execution also the third interview was finished sooner because of the technical problem but most important questions were asked.

Another approach that is used in this thesis is in quantitative way and using mail-surveys. In quantitative method numerical approach is used rather than analyzing words, sounds etc. This kind of research is (Bryman and Burgess, 1999):

- An inductive approach to relationship between theory and research, in which it aimed more on the generation of theories.
- More in positivism ontological and epistemological for and emphasis on the ways in which individuals interpret their social world
- Represent a view of social reality as a constantly shifting emergent property of individuals' creation.

> *"Relatively large numbers of respondents designed to generate information that can be projected to the whole population"(Dillon et al., 1993)*

By using a representative sample and various statistical analysis techniques of the gathered data, the whole population of research focus can be presented (Polonsky and Waller, 2005). The frequent quantitative approaches are: surveys (personal, telephone electronic and mail), observation, and experimentation (Polonsky and Waller, 2005).

Survey: a survey consists of questions that are structured and are presented to a sample of population and used to elicit specific information from respondents. Warwick and Lininger (1975) point out that there are two basic goals in questionnaire design: first, to obtain information relevant to the purposes of the survey, second, to collect this information with maximal reliability and validity. The question can be present in person,

over the telephone, electronically, or by mail (Polonsky and Waller, 2005). Appendix VII summarizes the evaluation of various survey methods.

Observation methods: observing and recording subject's actions and behaviors to certain stimuli or situations. Observation can be conducted via personal or mechanical observation, audit, content analysis, or trace analysis(Polonsky and Waller, 2005)

Experimentation: it consists of collection of primary data where the researcher changes one variable and measures the effect on the other variable(s) which can be done in a laboratory or in the field (Brown and Melamed, 1990, Polonsky and Waller, 2005)

This study also consists of electronic survey which uses an electronic questionnaire with Google online forum to send to people who are competent to answer the questions. This kind of method has some advantages (Polonsky and Waller, 2005, Kiesler and Sproull, 1986, Malhotra et al., 2010):

- Inexpensive
- Highly targeted and less intrusive and even interesting for the respondents
- Respondents can do it in their own time
- Electronic survey was returned more quickly than was the paper survey
- Gender and time spent using the computer did not affect response rates or response times.
- Respondents who answered the electronic survey made fewer item completion mistakes
- Electronic survey respondents also left fewer items blank and refused to answer fewer questions than did paper survey respondents

While it can also have some drawbacks like you do not know who is answering and how many times and respondents may have security/privacy concerns (Polonsky and Waller, 2005) however to conquest to the drawbacks the survey was presented by email to specific people and groups which have related to the thesis topic and research focus.

The electronic survey was added to the thesis to enhance the reliability of the results and cover the problems of qualitative method. Also because of the low number of interviews and time limitation, electronic survey was chosen to make the process more flexible. Although sending the survey to numerous online societies related to project management and local content the survey have 19 feedbacks.

So this research uses both qualitative and quantitative research methods which can be called as a mix method. The reason is to avoid drawbacks of each method and fulfill the limitation of responses and gain a more valuable result. The standard open-ended interview and electronic survey was chosen to gather data and information.

3.2. Data gathering

As described in the methodology part this thesis uses standard open-ended interviews, in these interviews the interviewees were chosen from experienced people in the field of oil and gas. The reason of choosing people from oil and gas industry is that the local content issue is more in concern in this field and local content requirements are more usable in oil and gas industry in emerging and transition economies. So the findings of the thesis are mostly related to the oil and gas industry and generalization of it across other industries like production industry should be done carefully and requires further research.

The reason that the number of interviews are less than expected is that there are less people in this field that are available to interview. All people that have knowledge related to the topic are expatriate who are in their projects abroad and have less time to participate in this study. Although the topic was interesting for the companies the people who can contribute are few.

The interviews were done through Skype and recorded by the permission of the interviewees. The questions of the interviews are available in the appendix I. The Interviewees are from two different oil service companies and all Interviewees have worked or are currently working in this field. The interviewees are introduced in methodology part.

There is not any formula or recipe to transform qualitative data to the findings (Patton, 2001) but there are many guidance between scholars like Patton (2001), Miles and Huberman (1994), Bryman and Burgess (1999), Bernard and Ryan (2010), Dierckx de Casterlé et al. (2012), and etc.

There are three main phases in the qualitative content analysis process: preparation, organizing and reporting, despite the two inductive and deductive analysis processes (Elo and Kyngäs, 2008). The preparation phase starts with selecting the unit (word or a theme) of analysis (McCain, 1988, Cavanagh, 1997, Guthrie et al., Elo and Kyngäs, 2008) which in this study is local content and local content strategy. Since this research is theory building it requires inductive content analysis.

As mentioned earlier another approach to find valuable and practical result is using an electronic survey. The surveys were sent with emails to companies and scholars who have experience and knowledge about local content. The survey has 19 answers and the survey questions are depicted in Appendix II and the result are shown in detail under Findings sections.

3.3. Reliability and validity

A scientific study should be reliable and valid if it wants to be acceptable and usable for future researches. All research findings should be as trustworthy as possible and the procedures used to generate the findings need to be evaluated (Graneheim and Lundman, 2004). The result of a reliable study should be repeatable. The validity of a study concerns the integrity of the conclusions. Does the construct reflect what it is supposed to? Validity

also presumes reliability; if a construct is not reliable it cannot be valid (Bryman, 2008).

There are three basic approaches to the validity of tests and measures as suggested by Mason and Bramble (1989) which are content validity, construct validity, and criterion-related validity.

Content validity: This method measures the degree to which the test items represent the domain or universe of the trait or property being measured. The survey of this study is valid based on its content because the audiences are randomly chosen that will accurately represent the information in all areas that are concerned in the research.

Construct validity: The construct validity approach concerns the degree to which the test measures the construct it was designed to measure. The survey is based on a well-known theory around local content and its definition and global project.

Criterion-related validity: this approach is concerned with detecting the presence or absence of one or more criteria considered to represent traits or constructs of interest. This issue is out of concern of the writer.

In addition to the validity approaches there are four common tests in order to measure the reliability of the survey: Retest Method, Alternative Form Method, Split-Halves Method, Internal Consistency Method. The use of reliability types (test-retest, split half, alternate form, internal consistency) depends on the nature of data (nominal, ordinal, interval/ratio) and the data of this survey are nominal and knowledge questions and retest or split-half method is appropriate (Radhakrishna, 2007). But based on the capacity of our interviewee the writer is unable to perform any reliability test.

Chapter IV Discussion and finding

4.1. Findings

All the findings form both interviews and surveys are presented in this part and the analysis of whether they obey a same pattern compared to the literature or they are different from literature will be presented in the discussion part.

4.1.1. Interview results

The number of the interviews is less than common average so both the surveys and interviews have been analyzed together but in the summery the interviews contribution is in Table 13.

Table 13 - Interviews' summary

Industry	Position	LC measurements	Challenges	Advantages	Stakeholders	Timing
Oil and gas services	Project director/FMC technologies	• Portion of works to be executed by local • Fabrication hours by local • Engineering hours by local • Administrative hours by local • Value of money to be spent in country • Using local natural resources	• Lack of relevant knowledge • Lack of capability and capacity for special area or fabrication • Expensive and costly to execute local fabrication • Few amount of players which cause to low competitiveness among suppliers • High amount of risk in projects	• Money certain with taxation • Improve national knowledge	Oil companies	Early phase
	Global MPS Africa Development Manager /FMC technologies	• Using local supply chain, local personnel • Perform executable process in country	• Corruption • Not developed countries • Lack of skilled level and technical expertise required • Costly processes • Unstable economy • Low quality engineering schools • Cultural differences	• Trained people • Transfer knowledge	shareholders	

	VP for project execution/Aker Solutions	• Financial expectations • Local contract holder and owners	• Nothing			

4.1.2. Survey results

On the other hand, the surveys (see Appendix II) have shown a more bright answer to the research question. Totally 19 electronic survey have been collected while the number is low also the number of people who have the competent to answer the survey is not so much. The focus group was the project or country manager who have ever confronted with local content expectation in their project.

Around 80% of the answerers are among the project/country managers and local content coordinator also more than 50% of them have higher education in management which shows that they have enough knowledge to show the real situation. In addition, most of respondents have been working in their current positions between 2 – 5 years and some of them have worked more than 10 years in this field.

The respondents have been mostly asked about local content requirements in oil and gas related industries like drilling, field exploration and services, field and mining machinery and equipment. Other industries that are asked about are services-engineering and accounting. Also, the two main countries that they are asked about local content are Brazil and Indonesia while other countries are involved such as China, Nigeria, Ghana, Uganda, South Africa, Malaysia, Angola, Kazakhstan, Oman, Saudi Arabia, USA, Canada, Singapore, Australia, Sierra Leone, Mexico, Philippines, East Timor. It shows that most of the audience is from emerging economies which is the scope of this research.

The most frequent expectation from the companies in emerging economies are employing local workforce, as well as training of local workforce, developing suppliers and services locally and procuring suppliers and services locally and very low percent of them were asked for financial value of the project (9%).

It seems that most of the local content requirements described in the contract or in the local trade, some of them respond that they may confront with some hidden expectations. Most of the answerer (65%) find it hard to involve local suppliers in their global projects.

The focus of this study is on the petroleum industry. Hence and important question was asked in the survey that "In which phase/es of Petroleum value chain, local content were asked?" And the answers ordered by frequency were Upstream (E&P) then Midstream and finally Downstream (R&M).

This has relation that the answerer think that also Upstream (E&P) local content requirement are more viable compare to Midstream and Downstream (R&M). This issue is in line with for

instance Petrobras business and management plan for 2013-2017 that they invest more in E&P segments than other segments as it is shown in Table 5.

The examples of the metrics of local content that the respondents describe are:

- Participation (time, man-hours),
- Distribution of budget,
- Task distribution,
- Amount of shared R&D activity,
- Joint publication,
- Percentages of bought material from local suppliers,
- Tax paid in country,
- Workforce percentages (citizenship) payroll,
- Training hours,
- Monetary value,
- Local content percentage of local employees in staff,
- Local content percentage in goods, works & services in procurement for the oilfield operations,
- Assessment of local content for materials based on country of origin,
- Assessment of local content for tools and work facilities based on ownership,
- Assessment of local content for labor based on nationality,
- Financial goals achieved,
- Operational effectiveness,
- Place where the product was manufactured,
- Number of components coming from a certain place

Metrics measures in both physical and value sense based on the survey respondents.

More than 80% of the respondents admit that local content expectations from host country, add value to their national economy in terms of developing the industrial infrastructure and skills of the people in countries that host projects but it need more time and efforts than expected.

About the barriers that can affect the process of local content development Figure 5 shows the answers:

Barrier	Count	%
Lack of competent labour	14	16%
Lack basic infrastructure (Power supplies, water resources etc.)	10	11%
Communication problems	4	4%
Unstable economy	5	6%
Unstable political structure	6	7%
Unrealistic local content expectations	12	13%
Lack of internal(company) local content strategy	11	12%
Weak financial basis	6	7%
Quality of educational systems	11	12%
Business regulatory environment	7	8%
Other	4	4%

Figure 5 - Barriers that can affect local content strategy in emerging economies/survey

As we can see that "lack of competent labor" is more in concern in emerging economies, and

after that "unrealistic local content expectations", "lack of internal local content strategy" and "quality of education" are the other barriers in order to answer the local content requirements. The next challenges that they have is lack of basic infrastructure like power suppliers, water resources or even in some countries the transportation systems does not support the need of the oil and gas companies.

Another issue was which stakeholders were more important than others to focus more in this countries, Figure 6 shows that most important stakeholder are national and local governments. This external stakeholders as described before use the local trade law of the country to affect the oil and gas compa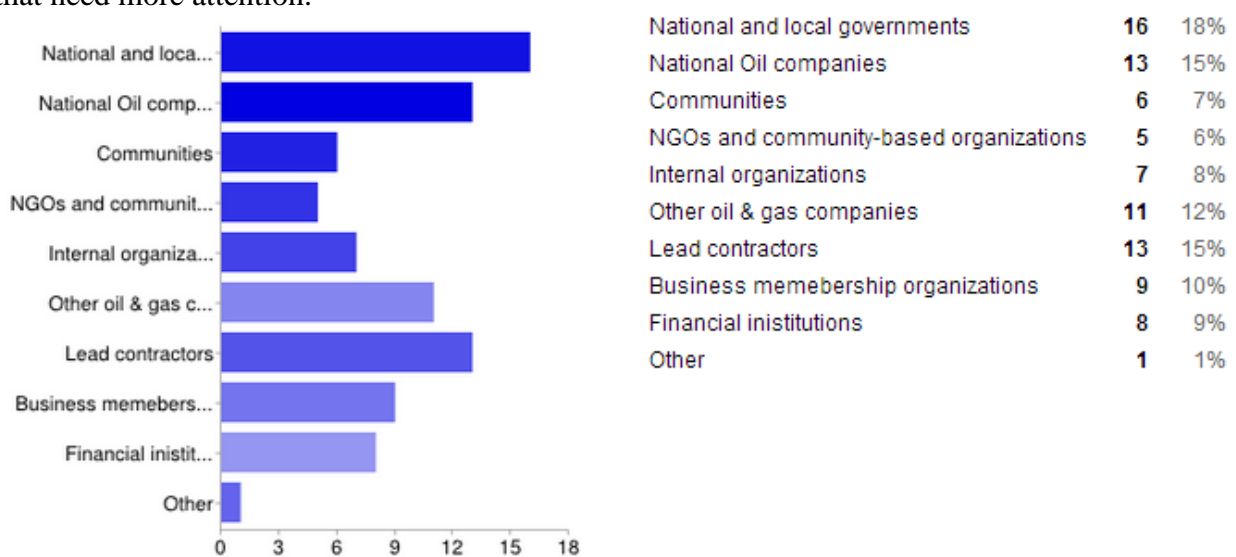nies to gain more from these companies. After it, National Oil Company, Lead contractors and other oil & gas companies are the stakeholders that need more attention.

National and local governments	16	18%
National Oil companies	13	15%
Communities	6	7%
NGOs and community-based organizations	5	6%
Internal organizations	7	8%
Other oil & gas companies	11	12%
Lead contractors	13	15%
Business memebership organizations	9	10%
Financial inistitutions	8	9%
Other	1	1%

Figure 6 - Important external stakeholders in global projects/Survey

Around 83% of the respondents said that their company has strategy to manage local content expectations. In addition, 89% think that it is also vital to have local content strategy.

Another important aspect that the surveys cover is that what kinds of opportunities are brought to the companies if they do right local content. The most important opportunities are: making competitive advantages, reducing cost with the help of local suppliers, meeting legal or contractual obligations and building reputation. The responsible people for this issue as they answered the survey are the first top Level of Management then, project and procurement management also human resource management.

The analysis that should be done in order to find more realistic baseline for developing local content based on the survey are: local capabilities study, Cost-benefit analysis and supply chain mapping and analysis. Also other studies are important which are depicted in Figure 7.

Analysis of national development priorities	8	9%
local capabilities study	17	18%
supply chain mapping and analysis	16	17%
Environmental and social risk assessment	8	9%
Cost-benefit analysis	17	18%
barriers analysis	7	7%
Financial and economical analysis	8	9%
Infrastructure analysis	11	12%
Other	2	2%
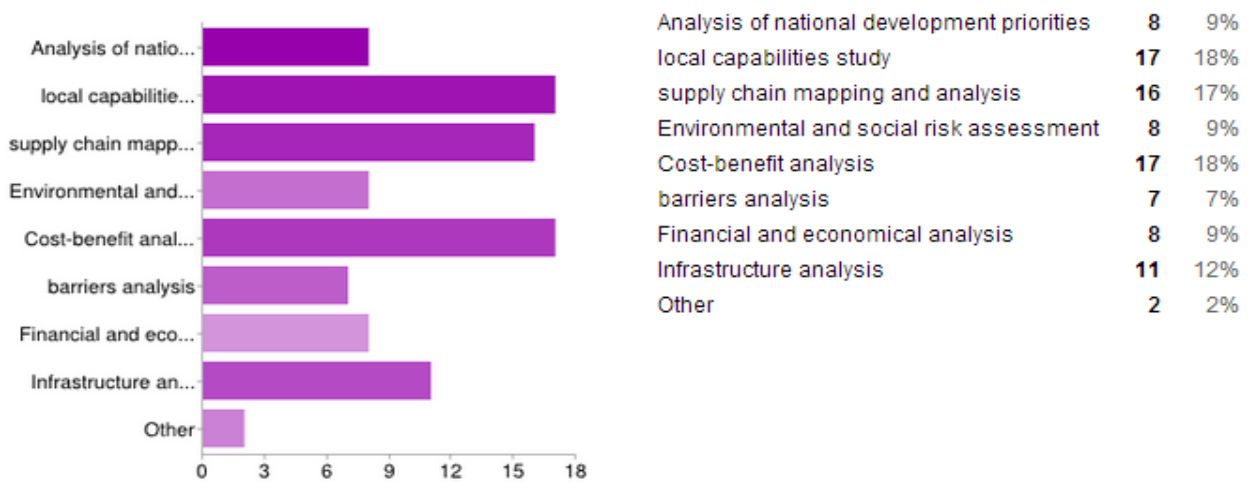
Figure 7 - Pre analysis for better local content strategy/Survey

Based on the PMI (2008) there are four phases in managing the project which are: project conception and initiation, project definition and planning, project launch or execution and project performance and control and project close. The respondents agreed that local content happen more in all of the phases and start when project start also it would be more important during project definition and planning.

The important part of the survey is what are the best strategies to ensure local content in global project in an emerging economy which resulted in Figure 8.

Training and skills development of local workforce	15	18%
Local procurments	11	13%
Improving local SMEs(small and medium sized enterprises)	9	11%
Industry collaboration	11	13%
Developing local education and training institutions	11	13%
Financial and banking help	7	8%
Joint venture with local firms	15	18%
Internal education to make relationship intelligence among global project managers	5	6%
Other	1	1%

Figure 8 - Suggested local content strategy/Survey

As we can see that based on the previous questions the answers of this question seems logical as the two most important strategies are training and skills development of local workforce and joint venture with local firms.

Also it is important that how the audience see the local content in an organizational context, and it is well known as Corporate social responsibility or Human resource development or Stakeholder management (Figure 9).

Figure 9 - Local content in organization context/Survey

4.2. Discussion

In this section all the surveys and interviews will be analyzed in order to make a conclusion and answer to the research questions. In addition to that the result of survey will be compared with the literature and previous studies which was described in Chapter II Concept.

As it had been reviewed previously and compare to survey and interview results about local content and its definition, it can be defined: Set of actions such as local recruitment, training, purchases of local goods and services related to target sectors of the economy which has the goal to add value to the national economy in terms of developing the industrial infrastructure and skills of the people in countries that host projects.

Extensive use of local content requirements in emerging economies in comparison with the WTO rules which are against each other can make crucial circumstances. Moreover, North American Trade agreement blocks local content as well as European countries decisions in 1993. Emerging economies need to make job so local content play the main rule in this scenario. These kind of economies same as their relatives – transition economies – have some challenges which made this inflexible for businesses to reply local content requests. Based on the literature and our survey the challenges in these countries could be described as follows in next section.

4.2.1. Challenges

Most of emerging economies suffer from volatile business, economic crises, high risks, poorly developed financial markets and lack of basic marketing infrastructure. The results of the survey and interviews are in agreement with scenarios shown in Figure 5 that the most important challenge are lack of competent people and unrealistic local content expectations.

a. **Lack of competent people:** it is the main challenge in emerging economies based on both theories and survey. For instance, it causes to make a university program

(Bachelor of Business Administration degree focusing on petroleum management) in Russia with the help of Statoil and Norwegian University of Science and Technology (NTNU) (IPIECA, 2011). So when companies try to make strategy about local content, they should consider that the human labor in that countries are not as competent as they want and it is now their responsibilities to transfer knowledge to this economies in terms of schools and training sessions.

b. **Unrealistic local content expectations:** this issue was mentioned in most of theories as well as survey and interviews. The requirements that countries oblige to the companies are not based on capability of these countries which makes companies unable to pursue them and unable to satisfy governments. For instance, asking to make the fabrication inland when the country does not have enough transportation facilities does not make sense.

4.2.2. Stakeholders

There are a lot of important external stakeholders in global project in emerging economies, but the most important one is the national and local government also the national oil company based on the empirical study. Based on the previous studies managing stakeholders is one of the challenging points of the project but knowing which stakeholders are important can make the problem easier to solve. The two external stakeholders, national and local government and the national oil company should see their expectations at first and cooperate with them more than others.

4.2.3. Opportunities

Scholars debate about some advantages for oil and gas companies regarding the local content in emerging economies like reductions in operational costs by keeping expatriate staff to a minimum; smoother flowing supplies of goods and services; a consistently renewed license to operate; and enhanced engagement with stakeholders. Also this research empirical study sum up with the same conclusion as the main opportunities are making competitive advantages and reducing cost with the help of local suppliers. Opportunities motivate companies toward superior local content plan as this issue is a win-win strategy and can lead to better project for all stakeholders.

4.2.4. Project

Most of the people in survey see local content as corporate social responsibility. Based on the interviews project managers are responsible for executing the project within time and budget limits though at the same time local content requirement affect projects that can increase the

risk of projects. Also it is important that in which phase the local content issue should be seen, as most of literature are sure that it should be seen in the beginning phases of the project as well as the thesis practical result.

The planning of local content development for sure should be in concern during the beginning phases; the following figure based on the Willy H Olsen shows at which phases of the contract strategy of projects it could be.

Figure 10 - Local content in project phase (adopted from Willy Olsen)
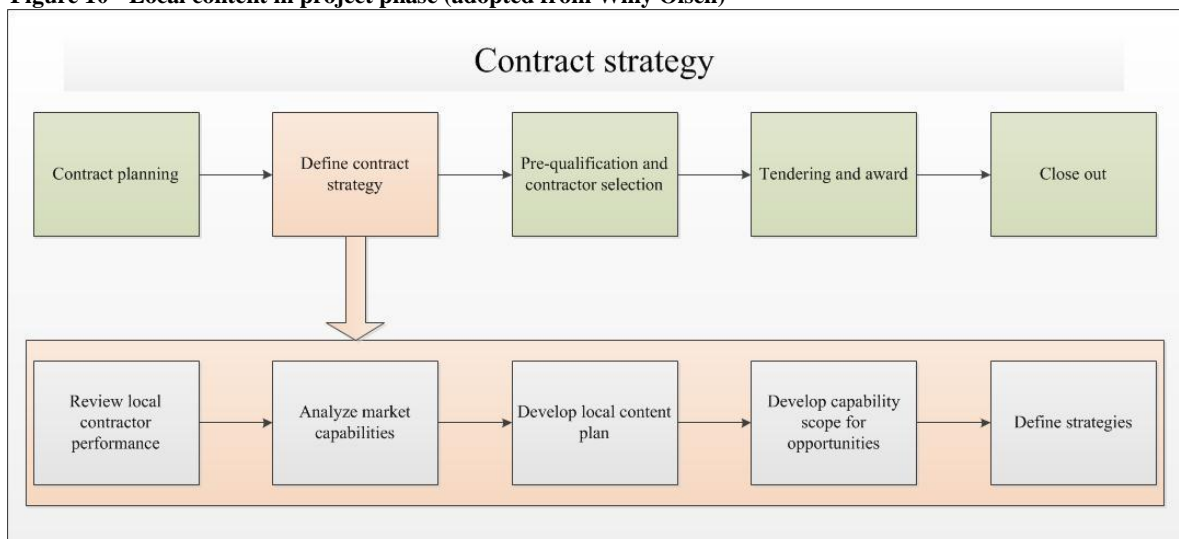
4.2.5. Pre-analysis

Before going for the strategies, knowing what kind of analysis should be done as a pre-study of the local content strategy is essential. As discussed earlier the following are among the most important one based on survey result:

Table 14 - Types of analyzing local context and capabilities, adapted from IPIECA (2011)

Important type of analysis based on the survey	Description
Cost benefit analysis	Quantification and study of the different levels of benefits, costs and risks related with different local employment and supply options. It is essential to take a long-term perspective on the potential benefits.
Local capabilities study	This look at existing and potential capabilities is particularly important when operating in new areas. The study can draw on local expertise and market intelligence, and may be completed in partnership with government and other stakeholders to enhance the quality and credibility of the outcomes. Such partnerships can be especially useful when there are gaps between the health

	and safety capabilities of local workers and the standards for technical and operational integrity set by international oil and gas operators.
Supply chain mapping and analysis	These processes enable companies to identify opportunities for local participation. Analyses may include examination of the local content implications of different options in design and procurement, particularly at the conceptual design stage.
Infrastructure analysis	Infrastructure needs can be directly tied to local business participation. A lack of infrastructure can be a barrier to the provision of local services, and can increase the cost of doing business. For example, unreliable power suppliers may force suppliers to invest in generators and fuel, which increases local cost; poor or non-existent shipyard facilities can significantly limit contributions to offshore operations; and poor transport links can add to the cost of importing components. All these factors can combine to make local firms uncompetitive.

There was not any evidence of pre analysis systems in literature but in companies manuals or oil and gas institutes there are some suggestions.

4.2.6. Strategy

The important part of the research is about how to answer local content in emerging economies. Training and skills development of local workforce is among the most supported ones in survey while it is also recognized in literature. Another item that is not talked about in theories is joint venture with local firms.

Five best strategies that are suggested are: Joint venture with local firms, Training and skills development of local workforce, Developing local education and training institutions, Industry collaboration, and Local procurements. However some theories talk about improving local SMEs (small and medium sized enterprises) but it is not rated as high compared to other strategies.

    a. **Joint venture with local firms:** local firms can gain substantial capacity development benefits through working as a partner or subcontractor with international firms in addition it can increase opportunities for knowledge and technology transfer.

    b. **Training and skills development of local workforce:** Both general education and specialist skills are usable but it should be based on a detailed analysis of local capabilities and a schedule of the skill requirements over the life of the asset. Such a strategy can consist programs about: basic education, language training, locally-appropriate methods, practical experience, flexibility**,** and scholarship schemes. For instance, Total LNG project in Yemen led to hiring of 200 Yemenis

and training them with an intensive three-month English programme, followed by eight months of training in oil and gas techniques, after that 13 months of hands-on training.

c. **Developing local education and training institutions:** Making local institute has more effect than it seems, it has the added advantages of supporting wider skills development in the local economy and promoting the companies' long-term reputation as a good corporate citizen. Statoil prize for World Petroleum Council Excellence Awards 2005 on Social Responsibility is a good example.

d. **Industry collaboration:** industry collaboration can cause enterprise development. For instance The CAE - Business Support Centre is a part of the Angolan Ministry of Petroleum which has the objective to promote the participation and sustainable development of Small and Medium Enterprises (SMEs) in the Angolan Oil Industry. CAE was initiated in partnership with Sonangol, BP, Chevron, ExxonMobil and Total and has the following result (Angola, 2013):

   ▪ 348 contracts and extensions worth over $ 241,633,229.26
   ▪ Database with more than 1490 national SMEs
   ▪ 4809 new jobs that helped developing the national economy
   ▪ 224 business training to more than 3386 participants representing over 2151 Angolan companies

e. **Local procurements**: it can be part of procurement strategy in these countries and they can improve possibility of local procurement by providing additional information, reducing the size and complexity of the scope, or simplifying procedures or processes to make it more likely that local firms will participate in the procurement process.

Chapter V Closing

5.1. Conclusion

As described in 1.6 and 2.7 sections about the research questions and literature gap, this thesis was meant to fulfill very simple gaps in the project management studies about local content. Local content strategy usage is more than simple contract advantages and its part of companies' social responsibilities. As it was mentioned earlier none of the previous works about stakeholder management studies are concerned about local content expectations during project phases and neglecting a very important part of projects "stakeholder expectations" is not rational in project studies.

The definition of local content can be summarized in the following statement based on well reviewing of other definition across countries and scholars:

"Set of actions such as local recruitment, training, purchase of local goods and services related to target sectors of the economy which has the goal to add value to the national economy in terms of developing the industrial infrastructure and skills of the people in countries that host projects." But every country defines it by using its own word and cannot expect a unit definition.

Countries especially in emerging economies, force oil and gas companies to employ more local workforce, and develop the local suppliers and services but **lack of competent labor** and **unrealistic expectations** are barriers to that and causes that companies are unable to ensure local content in these countries.

National and local governments, Lead contractors, National and other Oil companies should engage in the process of local content development as main stakeholders. In the organizational context, top level managers in addition to the project and procurement managers should be involved in the local content strategy.

The effect of local content requirement is still unknown but by survey result IOCs can have opportunities like: making competitive advantages and reducing cost with the help of local suppliers, smoother flowing supplies of goods and services, a consistently renewed license to operate, and enhanced engagement with stakeholders but what kind of difficulties it can cause is out of scope of this thesis and it needs further research.

In summery a reliable local content development program or strategy should consist of the following agendas: training and skills development of local workforce, joint venture with local firms, local procurements, Industry collaboration, developing local education and training institutions and improving local SMEs.

Local content development is part of companies' social responsibilities but it is the project manager's duty to ensure its development in company. Local content development should start in early phase of project and continue throughout all the project duration.

In summary, local content strategy is a way to have successful oil and gas projects as well as

respecting the country that the project takes place in.

5.2. Future research

It is vital that scholars and researchers look at local content as corporate social responsibility and add this issue to this aspect of organizational concept. Most of industrial people see local content as CSR and this can be another aspect that needs more research.

By reviewing literature finding what kind of difficulties could be caused by answering local content requirement is still unknown and need further work in project management studies.

References

2005. BP Trinidad and Tobago Ltd. Arthur Lok Jack Graduate School of Business: Arthur Lok Jack Graduate School of Business.

(WTO), T. W. T. O. 2013. *World Trade Organization* [Online]. World Trade Organization webpage: World Trade Organization. Available: http://www.wto.org/.

AALTONEN, K. & KUJALA, J. 2010. A project lifecycle perspective on stakeholder influence strategies in global projects. *Scandinavian Journal of Management,* 26**,** 381-397.

AARSETH, W. 2011. Global project leadership: Managing organizational challenges through RQ. *Nordic Academy of Management conferance 2011.*

ADENFELT, M. & LAGERSTRÖM, K. 2006. Enabling knowledge creation and sharing in transnational projects. *International Journal of Project Management,* 24**,** 191-198.

AHUNWAN, B. 2002. Corporate Governance in Nigeria. *Journal of Business Ethics,* 37**,** 269-287.

ANANTATMULA, V. & THOMAS, M. 2010. Managing global projects: A structured approach for better performance. *Project Management Journal,* 41**,** 60-72.

ANANTATMULA, V. S. 2008. The role of technology in the project manager performance model. *Project Management Journal,* 39**,** 34-48.

ANGOLA, C. 2013. *CAE - Business Support Centre* [Online]. CEA Angola: caeangola.org. Available: http://www.caeangola.org/en/cae-en/about-us.

ARELLANO, C. 2008. Default Risk and Income Fluctuations in Emerging Economies. *The American Economic Review,* 98**,** 690-712.

ARNOLD, D. J. & QUELCH, J. A. 1998. New Strategies in Emerging Markets. *Sloan Management Review,* 40 (1)**,** 13.

AUSTRALIA, C. O. C. A. I. O. W. 2011. Local Content Policy Position.

BALOUGA, J. 2012a. Nigerian Local Content: Challenges and Prospects. International Association for Energy Economics International Association for Energy Economics

BALOUGA, J. 2012b. Nigerian Local Content: Challenges and Prospects.

BERANEK, P., BRODER, J., REINEG, B., ROMANO, N. & SUMP, S. 2005. Management of virtual project teams: Guidelines for team leaders. *Communications for the Association for Information Systems,* 16.

BERNARD, H. R. & RYAN, G. W. 2010. *Analyzing qualitative data : systematic approaches,* Thousand Oaks, Calif. ; London, SAGE.

BINDER, J. 2007. *Global Project Management: Communication, Collaboration and Management Across Borders,* Gower Publishing Company, Gower.

BP. 2009. *Reaching one billion dollars in local content* [Online]. bp.com: BP. Available: http://www.bp.com/genericarticle.do?categoryId=9012063&contentId=7052253 [Accessed 06 April 2009 2009].

BROWN, S. R. & MELAMED, L. E. 1990. *Experimental design and analysis,* Newbury Park, Calif., Sage Publications.

BRYDE, D. J. & ROBINSON, L. 2005. Client versus contractor perspectives on project success criteria. *International Journal of Project Management,* 23**,** 622-629.

BRYMAN, A. 2008. *Social research methods*, Oxford university press.

BRYMAN, A. & BURGESS, R. G. 1999. *Qualitative Research*, SAGE Publications.

CAVANAGH, S. 1997. Content analysis: concepts, methods and applications. *Nurse Researcher,* 4**,** 5-16.

CHACAR, A. & VISSA, B. 2005. Are emerging economies less efficient? Performance persistence and the impact of business group affiliation. *Strategic Management Journal,* 26**,** 933-946.

CHEN, L.-F. 2012. A novel approach to regression analysis for the classification of quality attributes in the Kano model: an empirical test in the food and beverage industry. *Omega,* 40**,** 651-659.

CLARKSON, M. B. E. 1995. A Stakeholder Framework for Analyzing and Evaluating Corporate Social Performance. *The Academy of Management Review,* 20**,** 92-117.

CLELAND, D. I. 1986. Project stakeholder management. *Project Management Journal,* 17.

CRITTENDEN, V. L. & CRITTENDEN, W. F. 2012. Corporate governance in emerging economies: Understanding the game. *Business Horizons,* 55**,** 567-574.

DIALLO, A. & THUILLIER, D. 2005. The success of international development projects, trust and communication: an African perspective. *International Journal of Project Management,* 23**,** 237-252.

DIERCKX DE CASTERLÉ, B., GASTMANS, C., BRYON, E. & DENIER, Y. 2012. QUAGOL: A guide for qualitative data analysis. *International Journal of Nursing Studies,* 49**,** 360-371.

DILLON, W. R., MADDEN, T. J. & FIRTLE, N. H. 1993. *Essentials of Marketing Research,* Irwin: Homewood, IL. .

DODSON, W. R. 1998. Virtually international: managing globalized project *PM network,* 12.

DUBÉ, L. & PARÉ, G. 2001. Global virtual teams. *Communications of the ACM,* 44**,** 3.

DYNES, M. 2011. Local content. *Africainvestor***,** 3.

EESLEY, C. 2006. Firm responses to secondary stakeholder action. 27.

ELO, S. & KYNGÄS, H. 2008. The qualitative content analysis process. *Journal of Advanced Nursing,* 62**,** 107-115.

EMMETT, S. 2008. *Excellence in Procurement: How to Optimise Costs and Add Value*, Liverpool Academic Press.

ERICKSON, J. M. & RANGANATHAN, C. Project Management Capabilities: Key to Application Development Offshore Outsourcing. System Sciences, 2006. HICSS '06. Proceedings of the 39th Annual Hawaii International Conference on, 04-07 Jan. 2006 2006. 199b-199b.

EXXONMOBIL 2008. National content - it's the way we do business. ExxonMobil.com: ExxonMobil.

FILATOTCHEV, I., DYOMINA, N., WRIGHT, M. & BUCK, T. 2001. Effects of Post-Privatization Governance and Strategies on Export Intensity in the Former Soviet Union. *Journal of International Business Studies,* 32**,** 853-871.

FONTANA, A. & FREY, J. The interview: from structured questions to negotiated text. 61-106.

GRABOWSKI, M. & ROBERTS, K. H. 1998. Risk Mitigation in Virtual Organizations. *Journal of Computer-Mediated Communication,* 3**,** 0-0.

GRANEHEIM, U. H. & LUNDMAN, B. 2004. Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse Education Today,* 24**,** 105-112.

GROSSE, C. U. 2002. Managing Communication within Virtual Intercultural Teams. *Business Communication Quarterly,* 65**,** 22-38.

GUEDES, A. C. A. J. F. P., FILHO, J. C. A., ALMEIDA, J. R. F., VALLE, M. R., GONÇALVES, R., MORO, R. & ALMEIDA, A. B. S. 2009. Pre-Salt: the Brazilian opportunity to take local industry to the next level. *Offshore Technology Conference* Houston, Texas, USA.

GUILLÉN, M. F. 2000. Business Groups in Emerging Economies: A Resource-Based View. *The Academy of Management Journal,* 43**,** 362-380.

GUTHRIE, J., PETTY, R., YONGVANICH, K. & RICCERI, F. Using content analysis as a research method to inquire into intellectual capital reporting.

HALPIN, D. & HUANG, R. 1995. Competition and Future Needs of International Clients. *Journal of Professional Issues in Engineering Education and Practice,* 121**,** 191-196.

HITT, M. A., AHLSTROM, D., DACIN, M. T., LEVITAS, E. & SVOBODINA, L. 2004. The Institutional Effects on Strategic Alliance Partner Selection in Transition Economies: China vs. Russia. *Organization Science,* 15**,** 173-185.

HITT, M. A., DACIN, M. T., LEVITAS, E., ARREGLE, J.-L. & BORZA, A. 2000. Partner Selection in Emerging and Developed Market Contexts: Resource-Based and Organizational Learning Perspectives. *The Academy of Management Journal,* 43**,** 449-467.

HORII, T., JIN, Y. & LEVITT, R. E. 2005. Modeling and Analyzing Cultural Influences on Project Team Performance. *Comput. Math. Organ. Theory,* 10**,** 305-321.

HOSKISSON, R. E., EDEN, L., LAU, C. M. & WRIGHT, M. 2000. Strategy in Emerging Economies. *The Academy of Management Journal,* 43**,** 249-267.

IFC 2007. *Stakeholder Engagement: A Good Practice Handbook for Companies Doing Business in Emerging Markets*, International Finance Corporation.

IMF 2000. Transition Economies: An IMF Perspective on Progress and Prospects IMF webpage: The International Monetary Fund.

INTERNATIONAL, T. 2012. *CORRUPTION PERCEPTIONS INDEX* [Online]. Transparency International webpage: Transparency International. Available: http://www.transparency.org/.

IPIECA 2011. Local content strategy, A guidance document for the oil and gas industry. IPIECA webpage: IPIECA.

JAIN, S. C. 2006. *Emerging Economies and the Transformation of International Business: Brazil, Russia, India and China (Brics)*, Edward Elgar.

JARVENPAA, S. L. & LEIDNER, D. E. 1999. Communication and Trust in Global Virtual Teams. *Journal of Computer-Mediated Communication,* 3**,** 0-0.

KANAWATTANACHAI, P. & YOO, Y. 2002. Dynamic nature of trust in virtual teams. *The Journal of Strategic Information Systems,* 11**,** 187-213.

KELLEY, A. J. 1982. *New Dimensions of Project Management*, LexingtonBooks.

KERZNER, H. 1989. *Project management: a systems approach to planning, scheduling, and controlling*, Van Nostrand Reinhold.

KHAZANCHI, D. & ZIGURS, I. 2006. *Patterns of Effective Management of Virtual Projects: An Exploratory Study*, Project Management Institute.

KIESLER, S. & SPROULL, L. S. 1986. Response Effects in the Electronic Survey. *Public Opinion Quarterly,* 50**,** 402-413.

KINI, D. U. 2000. Global Project Management – Not Business As Usual. *Journal of Management in Engineering,* 16**,** 29-33.

KINZER, S. 2008. *All the Shah's Men: An American Coup and the Roots of Middle East Terror*, Wiley.

KLUEH, U., PASTOR, G., SEGURA, A. & ZARATE, W. 2007. Inter-sectoral Linkages and Local Content in Extractive Industries and Beyond – The Case of São Tomé and Príncipe. The International Monetary Fund (IMF) web page: The International Monetary Fund (IMF).

KOUDAL, P. & ENGEL, D. 2007. Globalization and Emerging Markets. *In:* LEE, H. & LEE, C.-Y. (eds.) *Building Supply Chain Excellence in Emerging Economies.* Springer US.

LAHIRI, S. & ONO, Y. 2003. Export-Oriented Foreign Direct Investment and Local Content Requirement. *Pacific Economic Review,* 8**,** 14.

LEE-KELLEY, L. 2006. Locus of control and attitudes to working in virtual teams. *International Journal of Project Management,* 24**,** 234-243.

LEGATUM. 2012. *THE 2012 LEGATUM PROSPERITY INDEX* [Online]. The Legatum Institute webpage: The Legatum Institute. Available: http://www.prosperity.com.

LEHMANN, H. 2004. The Australasian Produce Cooperative: a Global Information Systems Project. *Communications of the Association for Information Systems,* 13.

LIENTZ B. P. & PEA K. P. 2003. *International Project Management*.

LIN, B.-W. & BERG, D. 2001. Effects of cultural difference on technology transfer projects: an empirical study of Taiwanese manufacturing companies. *International Journal of Project Management,* 19**,** 287-293.

MAJCHRZAK, A., RICE, R. E., MALHOTRA, A., NELSON, K. & BA, S. 2000. Technology Adaptation: The Case of a Computer-Supported Inter-Organizational Virtual Team. *MIS Quarterly,* 24**,** 569-600.

MALHOTRA, N., JOHN HALL, MIKE SHAW & OPPENHEIM, P. 2010. *Essentials of Marketing Research: An Applied Orientation*, Pearson Education Australia.

MARULI, A. 2010. *RI wants local content in automotive products increased* [Online]. antaranews.com/: ANTARA News. Available: http://www.antaranews.com/en/news/1263219454/ri-wants-local-content-in-automotive-

products-increased [Accessed January 11 2010 2010].

MASON, E. J. & BRAMBLE, W. J. 1989. *Understanding and conducting research: applications in education and the behavioral sciences*, McGraw-Hill Book Co.

MCCAIN, G. C. 1988. Content analysis: a method for studying clinical nursing problems. *Appl Nurs Res,* 1**,** 146-7.

MENAS. 2008. *Menas local content online website* [Online]. Menas webpage: Menas Associates. Available: http://www.menas.co.uk/home.aspx [Accessed 2008 2008].

MEYER, K. E. 2004. Perspectives on multinational enterprises in emerging economies. *Journal of International Business Studies,* 35**,** 259-276.

MILES, M. B. & HUBERMAN, A. M. 1994. *Qualitative data analysis : an expanded sourcebook,* Thousand Oaks, Sage Publications.

MINISTRY-OF-ENERGY 2010. Local Content and Local Participation in Petroleum Activities – Policy Framework. *In:* ENERGY, M. O. (ed.). Ministry of energy webpage: Ministry of energy.

MONA SENNARA & FRANCIS HARTMAN 2002. Managing Cultural Risks on International Projects. *Project Management Institute Annual Seminars & Symposium.* San Antonio,Texas, USA.

MOTTA, R., CALOBA, G., ALMEIDA, L., MOREIRA, A., NOGUEIRA, M., CARDOSO, L. & BERLINK, L. 2000. Investment and Risk Analysis Applied to the Petroleum Industry. *SPE Asia Pacific Oil and Gas Conference and Exhibition held in Brisbane, Australia, 16-18 October 2000***,** 1-9.

MUNSON, C. L. & ROSENBLATT, M. J. 1997. The Impact of Local Content Rules on Global Sourcing Decisions. *Production and Operations Management,* 6**,** 277-290.

MUSCATDAILY. 2012. *RESEARCH BEGINS ON NEW TOGY OMAN REPORT* [Online]. http://www.muscatdaily.com: muscatdaily news agancy. [Accessed 2012 2012].

NARULA, R. & DUNNING, J. 2000. Industrial Development, Globalization and Multinational Enterprises: New Realities for Developing Countries. 28**,** 141-167.

NEFF, S. 2005. Memorandum on International Best Practice in Development of Local Content in the Energy Sector Nigerian Extractive Industries Transparency Initiative webpage: GOLDWYN international strategies, LLC.

NEWMAN, K. L. 2000. Organizational transformation during institutional upheaval. *Academy of Management Review,* 25**,** 602-619.

NIDIFFER, K. E. & DOLAN, D. 2005. Evolving distributed project management. *Software, IEEE,* 22**,** 63-72.

NIGERIA-MINISTER-OF-PETROLEUM-RESOURCES. 2009. *Local content acts* [Online]. Nigeria Minister of Petroleum Resources. Available: http://www.dprnigeria.com/home.html 2009].

OLANDER, S. 2007. Stakeholder impact analysis in construction project management. *Construction Management and Economics,* 25**,** 277-287.

OLANDER, S. & LANDIN, A. 2005. Evaluation of stakeholder influence in the implementation of construction projects. *International Journal of Project Management,* 23**,** 321-328.

OMAN, P. D. 2012. *In-Country Value* [Online]. http://pdointernet.pdo.co.om: Petroleum Development Oman (PDO). Available: http://pdointernet.pdo.co.om/Pages/SustainableDev.aspx 2012].

ONIP, T. B. N. O. O. T. P. I.-. 2011. Competitive agenda for offshore oil and gas supply chain in Brazil ONIP - The Brazilian National Organization of the Petroleum Industry: ONIP - The Brazilian National Organization of the Petroleum Industry.

OTAHA, J. I. 2012. Dutch Disease and Nigeria Oil Economy *An International Multidisciplinary Journal, Ethiopia* 6**,** 8.

OXFORD-ANALYTICA 2010. The Impact of Pre-Salt: A Long-Term Perspective. Oxford Analytica.

PATTON, M. Q. 2001. *Qualitative reserach and evaluation methods,* USA, Sage Publications, Inc.

PENG, M. W. & HEATH, P. S. 1996. The Growth of the Firm in Planned Economies in Transition: Institutions, Organizations, and Strategic Choice. *The Academy of Management Review,* 21**,** 492-528.

PENG, M. W., WANG, D. & JIANG, Y. 2008. An institution-based view of international business

strategy: A focus on emerging economies. *Journal of International Business Studies,* 39**,** 920-936.

PETROBRAS 2013. 2013 – 2017 Business & Management Plan. PETROBRAS.

PMI 2008. *A guide to the project management book of knowledge (PMBOK)*, Project Management Institute.

POLONSKY, M. J. & WALLER, D. S. 2005. *Designing and managing a research project : a business student's guide,* Thousand Oaks, Calif., Sage Publications, Inc.

PROMINP 2004. MANUAL FOR ASSESSMENT OF LOCAL CONTENT OF GOODS, SYSTEMS AND SERVICES RELATED TO THE PETROLEUM AND NATURAL GAS SECTOR. Prominp webpage: Prominp

PROMINP. 2008. *Prominp* [Online]. Petrobras - Todos os direitos reservados Available: http://www.prominp.com.br 2008].

RAD, P. F. & ANANTATMULA, V. S. 2009. Attributes of a Harmonious Project Team. *AACE International Transactions*.

RADHAKRISHNA, R. B. 2007. Tips for Developing and Testing Questionnaires/Instruments. *Extension Journal,* 45.

RAMAMURTI, R. 2004. Developing countries and MNEs: extending and enriching the research agenda. *Journal of International Business Studies,* 35**,** 277-283.

ROCCO, T., LINDA, GALLAGHER, S. & PÉREZ-PRADO, A. A. 2003. Taking the Next Step: Mixed Methods Research in Organizational Systems. *Information Technology, Learning, and Performance Journal,* 21**,** 11.

SAADI 1240. *The Golestan of Saadi*, Iran chamber society.

SALAZAR-ARAMAYO, J. L., RODRIGUES-DA-SILVEIRA, R., RODRIGUES-DE-ALMEIDA, M. & DE CASTRO-DANTAS, T. N. 2013. A conceptual model for project management of exploration and production in the oil and gas industry: The case of a Brazilian company. *International Journal of Project Management,* 31**,** 589-601.

SARKER, S. & SAHAY, S. Information systems development by US-Norwegian virtual teams: implications of time and space. System Sciences, 2002. HICSS. Proceedings of the 35th Annual Hawaii International Conference on, 7-10 Jan. 2002 2002. 10 pp.

SCHWAB, D. P. 1999. *Research methods for organizational studies,* Mahwah, N.J., Lawrence Erlbaum Associates.

SECRETARIAT, C. 1999. *Business Guide to the World Trading System*, International Trade Centre UNCTAD/WTO The Commonwealth Secretariat.

SHELL. 2013. *Our impact on local communities* [Online]. shell.com. Available: http://www.shell.com/global/environment-society/society/our-neighbours/impact.html.

SIGRID, D., AKON-YAMGA, G. & MOHAMMED, K. S. 2011. *Developing local content: Knowledge, Attitudes and Practices among Ghanaian supply companies* [Online]. SINTEF: SINTEF. [Accessed 16.08.2011.

STATOIL. 2010 - 2011. *Statoil annual report 2010 & 2011* [Online]. Statoil webpage: Statoil. [Accessed 2010 2010].

STEPHEN, B. A. 2011. LOCAL CONTENT POLICY IN OIL SECTOR AND THE CAPACITY UTILIZATION IN NIGERIAN MANUFACTURING INDUSTRY. *Business and Management Review* 1(6)**,** 10.

SUSLICK, S. B. & SCHIOZER, D. J. 2004. Risk analysis applied to petroleum exploration and production: an overview. *Journal of Petroleum Science and Engineering,* 44**,** 1-9.

TASHAKKORI, A. & TEDDLIE, C. 1998. *Mixed methodology : combining qualitative and quantitative approaches,* Thousand Oaks, Calif., Sage Publications.

TORDO, S., TRACY, B. & ARFAA, N. 2011. National Oil Companies and Value Creation.

TOTAL. 2012. *Expanding local content in our industrial projects* [Online]. Total webpage: Total. Available: http://www.total.com/en/our-challenges/driving-shared-development-/our-actions/employment-and-economic-development/local-content-201060.html.

UNCTAD 2011. Press Release 83. United Nations Conference on Trade and Development: UNCTAD.

VELOSO, F. 2001. *Local Content Requirements and Industrial Development Economic Analysis and Cost Modeling of the Automotive Supply Chain.* Doctor of Philosophy in Technology, Management and Policy, Massachusetts Institute of Technology.

VISMEH, A. 2011. New views of Sadegh Zibakalam about nationalizing oil industry in Iran. *khabaronline*, March 17, 2011.

WARNER, M. 2010. *Are Local Content Regulations a Pathway to Competitiveness or a Road to Protectionism?* [Online]. Local Content Solutions webpage: Local Content Solutions. Available: http://www.localcontentsolutions.com/pdf/CompetitivenessProtectionism.pdf.

WARNER, M. 2011. *Local content in Procurement, creating local jobs and competetive domestic industries in supply chains*, Greenleaf Publishing Limited.

WARWICK, D. P. & LININGER, C. A. 1975. *The sample survey: theory and practice*, McGraw-Hill.

WEIJERMARS, R. 2009. Accelerating the three dimensions of E&P clockspeed – A novel strategy for optimizing utility in the Oil & Gas industry. *Applied Energy,* 86**,** 2222-2243.

WORLDBANK. 2013. *Countries Overview* [Online]. World Bank Group webpage: World Bank Group. Available: http://www.worldbank.org/en/country/brazil/overview [Accessed 2011.

WRIGHT, M., FILATOTCHEV, I., HOSKISSON, R. E. & PENG, M. W. 2005. Strategy research in emerging economies: Challenging the conventional wisdom - Introduction. *Journal of Management Studies,* 42**,** 1-33.

YASIN M M, MARTIN J & CZUCHRY A 2000. An empirical investigation of international project management practices: the role of international experience. *Project Management Journal,* 31**,** 11.

Program list

Program	Edition	Year	Function
PDFexchange viewer	2.5	2012	PDF reading and editing
Microsoft office package	14.0.6129.5000	2010	Writing and calculation
EndNote X6	5091602647	2012	Helps with creating a references
Microsoft project	14.0.6129.5000	2010	Thesis planning and management
Skype	6.3.59.107	2013	Using for interviews
Google drive	1.9.4536.8202	2013	Making online survey

Appendix I

Interview questions:

Thank you to participate in this interview, If it is possible I am recording our interview and if you think any part of your speech should not be recorded just tell me to do that.

1. **Behaviors/experiences questions:**
   - What are you currently working on in your company? And what is your role in the project?
   - What was your experience in projects during your professional work? And in which industries?
   - What is your experience regarding local content in global projects?
   - What are the countries' expectations about local content in projects?
   - To what extend do you find it hard to involve local supply chain in your projects?
   - Is the local content expectations described in the contract or in another way?
   - How does it measure?
   - Is your company having any strategy to managing LC expectations?

2. **Opinions/Values questions:**
   - Do you think that local content expectations from host country, add value to their national economy in terms of develop the industrial infrastructure and skills of the people in countries that host projects?
   - What are the barriers for the project company in order to manage local content?
   - Which external stakeholders are important to consider in global projects except country government?
   - Do you think companies need more cooperation with host country?
   - What is the role of project managers in global projects to answer local content expectations?
   - Do you think that managing local content happen in which phases of projects management? (Project conception and initiation, Project definition and planning, Project launch or execution, Project performance and control and project close) or where project managers should decide about local content issue?

3. **Feeling/emotions questions:**
   - Do you think it is project manager's duty to answer local content expectations in global projects?

4. **Knowledge questions:**
   - What are the ways to ensuring local content in global project in an emerging economy like …?

- What is the best strategy to succeed in local content in global projects in emerging economies and why?
- What characteristics of an emerging economics can affect a global project?

5. **Sensory questions:**
   - Can you describe that in what ways stakeholders ask for local content in emerging economies?

6. **Background questions:**
   - Can I ask how many years are you working as a project manager/planner (country manager)?
   - What is your education background?

7. **Closing questions:**
   - That covers the things I wanted to ask. Anything you care to add? Or what should I have asked you that I didn't think to ask?

Appendix II

Survey invitation:

Survey - local content research

Thank you to participate in local content strategy development survey, it will take around 10 minutes to complete. After finishing the survey you will receive a confirmation message and you cannot edit your answers after submitting. The survey contains 24 questions in 2 pages. The goal of the study is about how to develop local content strategy to ensure its requirements in global project in emerging economies.

By participating in this survey you are acknowledging the following:

1. My participation is completely voluntary, however once the survey has started, all questions will need to be answered.

2. My identity will remain confidential, and only summary results will be reported in the final report.

3. I understand that I will not receive any direct personal rewards for participating in this survey and my participation will not affect my occupation or occupational standing.

4. I have the opportunity of seeing the results of this study if I so request.

5. There are no risks to the participant in answering questions in this survey.

If you need any assistance or want to ask more questions and send any comments feel free to call or email me: +4745766023 - seyedpm@stud.ntnu.no

Questions:

What is your current position in the company or in the project?

- Project manager
- Country manager
- Sales and marketing manager
- Global development manager
- Other

How long have you been working at your current job?

- 1 - 2 years
- 2 - 5 years
- 5 - 10 years
- More than 10 years
- Other

In which industries have you asked for local content requirements? (during your professional life), Based on Standard Industrial Classification (SIC) Code List

Oil & Gas related industry (Drilling, Field Exploration and services, Field and Mining Machinery & Equipment)

- Miscellaneous Products of Petroleum & Coal
- Petroleum Refining

- Paints, Varnishes, Lacquers, Enamels & Allied Prods
- Services-Management or Business Consulting Services
- Services-Engineering, Accounting, Research, Management
- Other

In which countries have you asked for local content requirements? (during your professional life)

- Nigeria
- Ghana
- China
- Brazil
- South Africa
- Uganda
- Malaysia
- Indonesia
- Russia
- Indonezia
- Angola
- Kazakhstan
- Oman
- Saudi arabia
- Other

What are emerging countries' expectations regarding local content requirements in global project? (Government of the country)

- Financial value of the project
- Employment of local workforce
- Training of local workforce
- Developing suppliers and services locally
- Procuring suppliers and services locally
- Other

Do you find it hard to involve local suppliers in your global projects? (By considering emerging economies local suppliers)

- Yes
- No
- Never been an issue
- Other

How is the local content expectations described?

- In contract
- In the local trade law of the country

- Hidden expectations
- Other

In which phase/es of Petroleum value chain, local content were asked?
- Upstream (E&P)
- Midstream
- Downstream (R&M)
- Not applicable for our business
- Other

Do think in which phase/es of Petroleum value chain local content requirements are viable?
- Upstream (E&P)
- Midstream
- Downstream (R&M)
- Not applicable for our business
- Other

What are the metrics to measure local content in your project?
How local content measured?
- In physical sense (like a fraction of the total number of components or raw materials used to produce the final good to be of domestic origin)
- In value sense (like value of all purchased parts or of the final good's value)
- Other

Do you think that local content expectations from host country, add value to their national economy in terms of develop the industrial infrastructure and skills of the people in countries that host projects?
- Yes
- No
- Yes, but it takes more time than expected
- Other

What are the barriers for the project company in order to manage local content? (Specifically in emerging economies)
- Lack of competent labour
- Lack basic infrastructure (Power supplies, water resources etc.)
- Communication problems
- Unstable economy
- Unstable political structure
- Unrealistic local content expectations
- Lack of internal(company) local content strategy
- Weak financial basis

- Quality of educational systems
- Business regulatory environment
- Other

Which external stakeholders are important to consider in global projects?

- National and local governments
- National Oil companies
- Communities
- NGOs and community-based organizations
- Internal organizations
- Other oil & gas companies
- Lead contractors
- Business membership organizations
- Financial institutions
- Other

Is your company having any strategy to manage local content expectations?

- Yes
- No
- Other

Do you think it is vital to have local content strategy?

- Very important
- To some extend
- Not essential
- Depend on countries
- Other

What are the opportunities in a successful local content strategy?

- Government relation
- Make a competetive advantages
- Reducing cost with the help of local suppliers
- Increasing workforce
- Build reputation
- Meeting legal or contractual obligations
- Other

Which people in an organization should be responsible for the successfulness of local content strategy?

- Project management
- Procurement management
- Human resources management
- Top Level of Management

- Other

What kind of analysis should be done in order to review the local content and develop a realistic baseline?
- Analysis of national development priorities
- local capabilities study
- supply chain mapping and analysis
- Environmental and social risk assessment
- Cost-benefit analysis
- barriers analysis
- Financial and economical analysis
- Infrastructure analysis
- Other

Do you think that managing local content happen in which phases of projects management?
- Project conception and initiation
- Project definition and planning
- Project launch or execution
- Project performance and control and project close
- All of above and start as project starts
- Other

What are best strategies to ensuring local content in global project in an emerging economy?
- Training and skills development of local workforce
- Local procurements
- Improving local SMEs(small and medium sized enterprises)
- Industry collaboration
- Developing local education and training institutions
- Financial and banking help
- Joint venture with local firms
- Internal education to make relationship intelligence among global project managers
- Other

How do you see local content strategy in an organizational context?
- Corporate social responsibility
- Sales and marketing
- Human resource development
- Project's phases
- Customer communication
- Stakeholder management
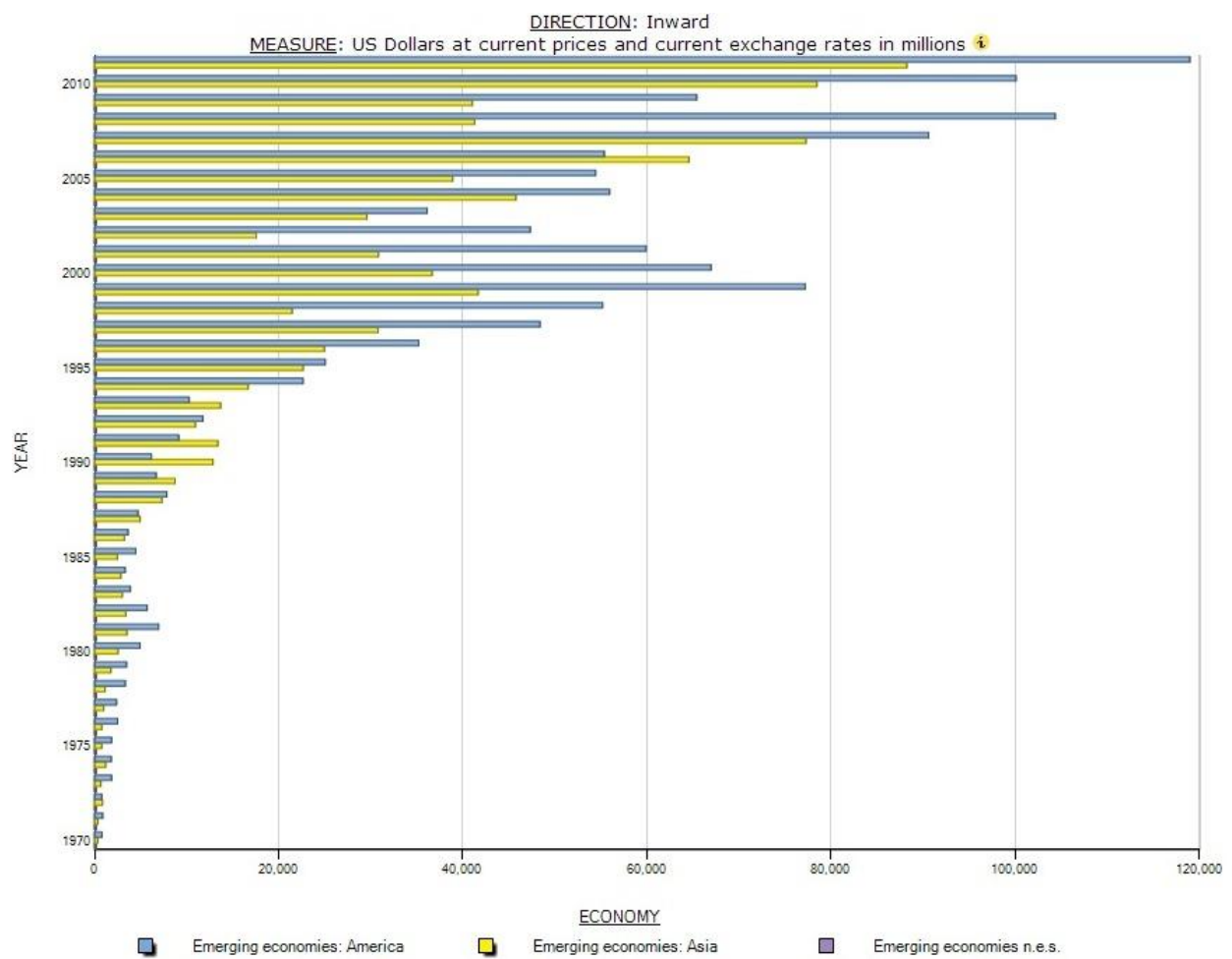
- Other

What is your education background?

- Project management
- Management studies
- Business studies
- Engineering
- Other

That covers the things I wanted to ask. Anything you care to add that I didn't think to ask?
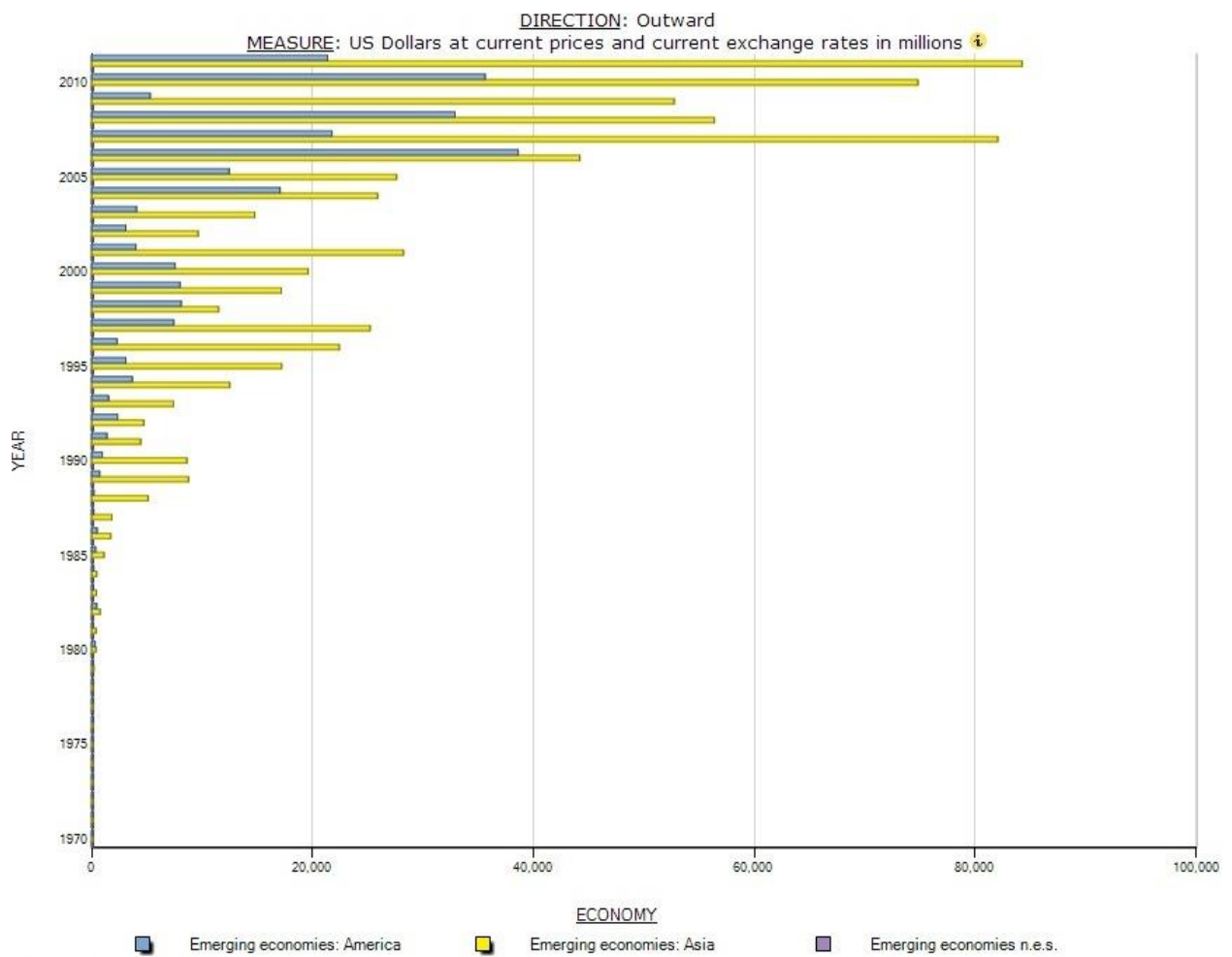
Your name - Company's name, Optional

Appendix III

Emerging economies inward foreign direct investment flows, annual, 1970-2011 (UNCTAD, 2011)
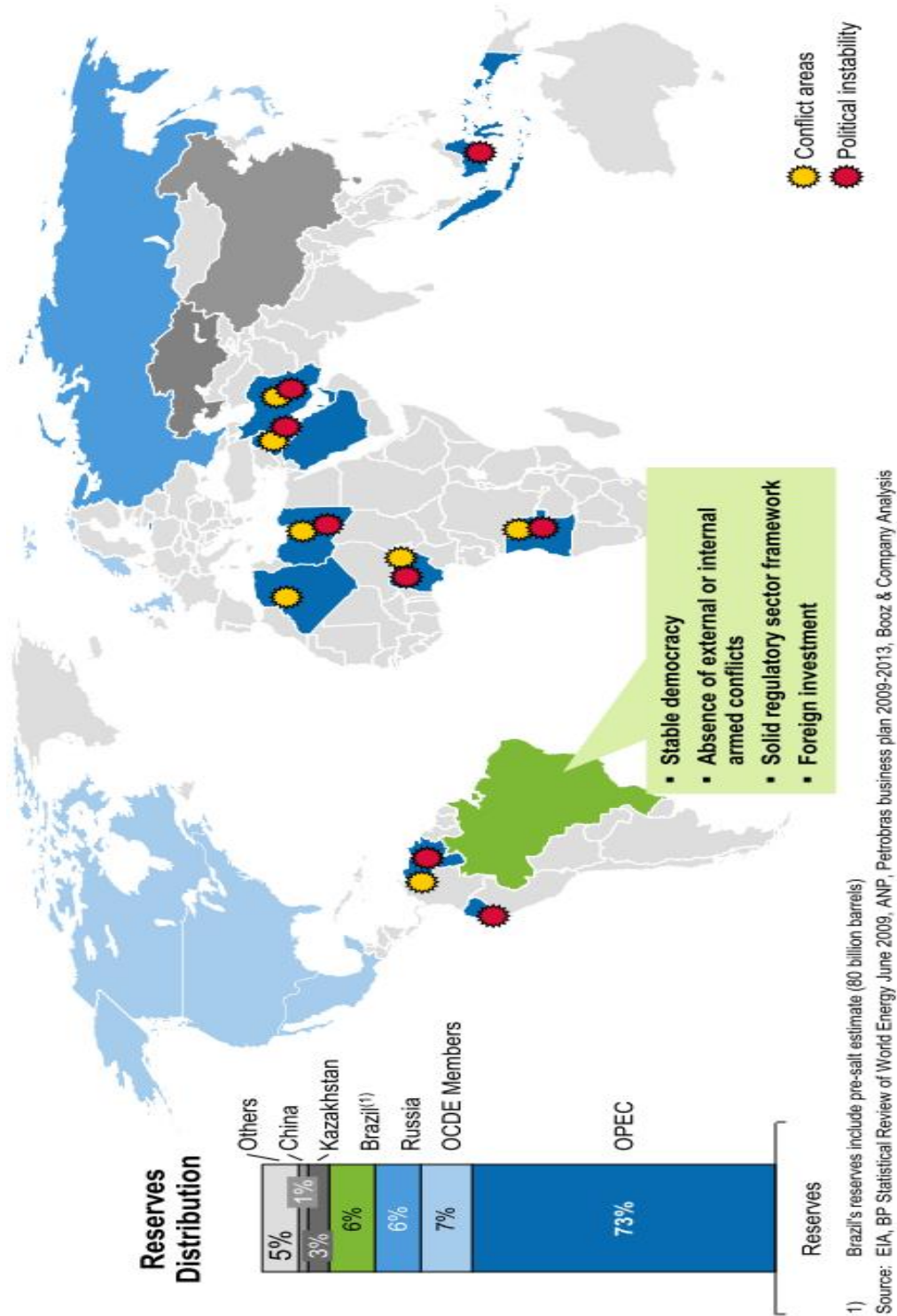
Appendix IV

Emerging economies outward foreign direct investment flows, annual, 1970-2011 (UNCTAD, 2011)

Appendix V

Situation of Major Reserves Countries (ONIP, 2011)

Appendix VI

Norway and the UK have mechanisms which focusing on the internationalization of the local supply chain (ONIP, 2011)

	Norway	United Kingdom
Attracting foreign companies with O&G know-how	Both countries have struggled to ensure the presence of the major international players in their countries - eg. all major operators and integrators are present in both regions	
Qualification of the local workforce	Foundation of Universities (ex. University of Stavanger) e Centers of Research	Already had important petroleum engineering courses due to the presence of BP and Shell
Formation of an industry cluster	Both countries formed an important cluster of O&G, which enabled the cooperation and collaboration in Norway, and the mobility of the workforce in the UK	
Internationalization of the local chain	With the presence of foreign companies, local firms were forced to reach levels of global competitiveness - access to world markets through operators and service providers	
Incentives to use the local content	Companies that had high local content were benefited by bid rounds for new fields	

Appendix VII

A comparative evaluation of survey methods (Malhotra et al., 2010)

Criteria	Telephone	In-Home Interviews	Central Location Interview	Computer Assisted Personal	Mail Surveys	Mail Panels	E-Mail	Internet Web
Flexibility of data collection	***	***	***	***	*	*	*	***
Diversity of questions	*	***	***	***	**	**	**	***
Use of physical stimuli	*	***	***	***	**	**	*	**
Sample control	***	***	**	**	*	***	*	**
Control of data collection	**	***	***	***	*	*	*	*
Control of field force	**	*	**	**	***	***	***	***
Quantity of data	*	***	**	**	**	***	**	**
Response rate	**	***	***	***	*	**	*	*
Perceived anonymity of the respondent	**	*	*	*	***	***	**	***
Social desirability	**	***	***	***	*	*	**	*
Obtaining sensitive information	***	*	*	*	***	***	**	***
Potential for interviewer bias	**	***	***	*	None	None	None	None
Speed	***	**	***	***	*	**	***	****
Cost	**	***	***	***	*	**	*	*

*** = High; ** = Medium; * = Low.