THE INFLUENCE OF THE INTERNATIONAL ENVIRONMENT ON OIL AND GAS INDUSTRY DEVELOPMENT, AS WELL AS ON THE RESTRUCTURING AND UPGRADING OF THE PETROLEUM REFINERY INDUSTRY IN THE DEMOCRATIC REPUBLIC OF CONGO

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ABSTRACT

This paper explored the influence of the international environment on oil and gas industry development, as well as on the restructuring and upgrading of the petroleum refinery industry in the Democratic Republic of Congo (DRC). It intended to unveil and increase the awareness of political leaders and Congolese people about the influence of the international environment on the national oil and gas industry's integration and development, as well as the restructuring and upgrading of the only oil refinery industry in the country. The PESTIE factors of the macro-environment were used to achieve the aim and objectives of this study. Accordingly, in order to address the influence of the international environment on oil and gas industry in the DRC, a mixed methods approach combining a quantitative survey with qualitative in-depth interviews was used to confirm the evidence obtained from the survey.

The results of this study revealed the (82%) oil and gas industry disintegration and the lack of oil refinery industry development in the DRC are mostly related to the influence or dominance of the international environment, as well as to the colonial economic model that kept the country reliant on the total export of natural mineral resources and the import of all essential finished product needs (oil products). This paper alerts the government of the DRC and the Congolese people to how the international environment is influencing the oil and gas industry in the DRC. Moreover, the paper addresses opportunities to review, monitor and ensure the best practice of policies, programmes and strategic plans that could help in minimising the dominance of a colonial economic model in the oil and gas industry of the DRC.

Keywords: PESTIE Factors, International Environment, Petroleum Industry, Oil Refinery Industry and DRC.

INTRODUCTION

"*The influence of the international environment on oil and gas industry development, as well as on the restructuring and upgrading of the petroleum refinery industry in the Democratic Republic of Cong"*

The petroleum industry worldwide plays an important role in line with sustainable socio-economic development in countries where natural mineral resources are genuinely and legally well managed. Globally, the oil and gas industry plays a significant role through international trade, oil prices in the macro-economic environment and the geopolitics of oil and gas Stevens (2018) & Smit (2016) purports that in most developing countries, including the DRC, the oil and gas industry is facing various and critical operational challenges caused generally by business environment instabilities and particularly by the international environment. Therefore, the international environment can be understood as an environment that is more complex, competitive, and susceptible to change and unpredictable than anything at the local level (Głodowska, 2017). Unfortunately, failed and collapsed states remain connected to the international environment through numerous licit and illicit transnational networks. Several businesses that involve the international environment in developing countries are based on natural mineral resources. These countries, including the DRC, are lacking in accurate mechanisms to promote policies and best practices (rules/regulations, strategies, plans, programmes, guidelines and procedures) to optimise the benefits of producing resources.

Policies governing socio-economic activities fail to be objectively re-framed and implemented, and are being strongly influenced by the opposite forces of globalisation and/or international oil and gas organisations based (operating) in these developing countries (DRC). In most cases, international oil organisations operating in developing countries are remiss in considering and implementing Corporate Social Responsibility (CSR) values. . According to the UNEP Report (2017), apart from the lack of CSR best practices by oil companies operating in the DRC, challenges affecting oil and gas industry integration and development in Africa and in a country like the DRC include several issues such as inadequate management tools; guidelines and resources to support legal, regulatory and institutional frameworks; inadequate capacity to address local content; exploration and production technology; research and development; insufficient levels of public awareness and participation with regard to the development of the oil and gas industry; inadequate capacity and skills/competence in managing the oil and gas value chain; inadequate environmental, safety, waste and resource management systems to ensure sustainable development of the oil and gas industry; inadequate dispute mechanisms to handle oil and gas related disputes; constraints in managing terrestrial and marine conservation areas, national parks and forest reserves including their constituent biodiversity.

In addition to the above enumerated operational challenges or barriers obstructing oil and gas industry development in most developing countries, there is the international factor and/or international oil and gas companies, which have extreme dominance and control over local economies of natural mineral resources production (oil and gas activities in the DRC). According to Smit (2016); Erasmus (2014), the international environment/factor includes issues through which foreign and local tendencies and actions drive the oil and gas industry (micro-environment) and the market environment. However, the international environment provides opportunities or threats if the global facet is considered. Therefore, the macro-environment factors of the PESTIE model influence, to a greater or lesser extent, the oil and gas industry in many ways. Particularly, this paper focuses only on the international environment factor by demonstrating how this single component of the PESTIE variables has caused more harm/threats than the socio-economic opportunities expected by the Congolese people from oil and gas industry activities, as well as from various other natural mineral resources exploitation in the country. This article begins by delineating the background of the oil and gas companies operating in the DRC since 1960 and thereafter discusses the international factors impeding oil and gas industry development, as well as the restructuring, upgrading and development of the petroleum refinery industry in the DRC. The research methodology, recommendations and findings are provided later in the article.

This study aimed to explore the influence of the international environment on oil and gas industry development, as well as on the restructuring and upgrading of the petroleum refinery industry in the Democratic Republic of Congo. The objective was to understand the role played by the international environment and/or international oil organisations in the DRC's oil and gas industry since exploration began in the 1960s and when its offshore fields came on stream in 1976, until today.

This paper aspired to unveil and increase the awareness of political leaders and the Congolese community (public and private stakeholders) about the influence of the international environment on the national oil and gas industry integration and development, as well as on the restructuring and upgrading of the sole oil refinery industry in the country. The research also intended to explore the possible opportunities for the government of the DRC to review, monitor and ensure the best practice of policies, programmes and strategic plans that could help in minimising the dominance of colonial economic models in the oil and gas industry of the DRC. The international environment component of the PESTIE factors was specifically examined in order to determine the causes of oil and gas industry disintegration and lack of development; the lack of petroleum refinery industry development; and the persistent approach of the colonial economic system, which is strongly ingrained in the DRC for many decades and which promotes external dependence (exports of all natural mineral resource outputs) instead of local processing industry development for natural mineral resources to be refined in the country.

The strategy of vertical integration for the DRC's oil industry development could be profitable in terms of evolving the oil refinery industry in the country. According to Erasmus (2014), the vertical-integration strategy refers to a situation where an organisation takes over other businesses, such as those providing raw materials or acting as channels, with the purpose of ensuring a supply source, processing and distribution channel.

"Background to the international environment and/or international organisations' involvement in the oil and gas industry of the DRC"

According to Głodowska (2017), businesses operating in international markets are susceptible to creating developmental opportunities for industries into which they are entering, allowing them on the one hand to benefit from many advantages, but on the other bringing significantly more serious threats than those occurring on local markets, if monitoring mechanisms in the country fail to be accurately implemented due to a lack of policies and best practices. This implies that the international environment has a strong influence on businesses in the local market. The international environment is more complex, competitive, susceptible to change and unpredictable than anything at the local level (Smit, 2016). In light of the aforementioned, since the independence of the country in 1960 until today, the economic situation of the DRC in general and that of natural mineral resources exploitation, including the oil and gas industry particularly, is strongly influenced by globalisation forces. Unfortunately, there is an antagonistic influence and more threats than developmental opportunities. Therefore, it is indeed deplorable to observe and point out that instead of socio-economic transformation, the DRC's socio-economic situation has critically downgraded in terms of developmental trends (production trends) and money-making, as well as in terms of societal and environmental development trends. Several oil activities are occurring in a very 'stronghold' situation (top secret) that nobody knows, except those that are in the corridors of the closed surroundings of business. For example, in Lake Albert (the eastern side of the DRC), a reportedly secret deal was revealed relating to oil exploration in Blocks 1 and 2 on the DRC side of Lake Albert (Litvinof, 2012). Many reports from the United Nation Security Council (UNSC) have revealed several illegal/illicit practices related to natural mineral resources exploitation and other forms of wealth of the Democratic Republic of Congo by foreign states and organisations, in an attempt to help bring to an end the plundering of the natural mineral resources of the DRC (UNSC Report S/2002/1146, 2002). These reports are powerful in revealing the socio-economic malpractices of international states and organisations in the DRC, but are powerless in actions that could eliminate or minimise the negative and destructive effects of international environment wrong-doing in the DRC.

Unfortunately, for many decades, the situation on the ground remains unchanged and no international assistance or drastic actions have been put in place to end the plundering and illegal practices of natural mineral resources exploitation in the DRC. With reference to the petroleum industry in the DRC, oil and gas exploration in the country began in the 1960s along the country's 22 km Atlantic Ocean coastline at the estuary of the Congo River (Congo), which is sandwiched between the prolific off-shore producing region of northern Angola and its oil-rich enclave of Cabinda. The DRC became a minor oil producer in 1976 when its off-shore fields came on stream (Resistance Oil Watch Net Work Bulletin, 2002). However, in the upstream oil and gas sub-sector, various foreign companies have been operating in partnership with the DRC's preceding governments. Furthermore, the most important consortium, which was actively operating in the offshore concessions of the DRC, comprised Congo Gulf Oil (Chevron), 50%, Teikoku Oil of Japan (Congo Petroleum Company) (32%) and Union Oil of California (Unocal) (18%).

Another company operating an onshore concession in the Congo River estuary is a consortium known as CongoP (Société de Recherche et d'Exploitation des Pétroles au Congo) which, until 1999, included Petrofina and Shell. Furthermore, in 1999, Ocelot International bought out Shell's interest in three on-shore production concessions. The Japan National Oil Company (JNOC) has also been involved in exploration activities. Nevertheless, several oil and gas activities have collapsed in the country due to several State structures' inefficiency and massive corruption, together with political instability, which have led to extreme problems/difficulties within the oil and gas industry (Resistance Oil Watch Net Work Bulletin, 2002). During the Kabila government era, like its predecessors, foreign interest in the on-shore was once again promoted in the east of the DRC through Tanganyika Graben blocks and Cuvette Centrale. According to Litvinof (2012), in the eastern region of the DRC, the DRC government has opened up to 16 exploration licences and has signed Production Sharing Agreements (PSAs) with at least two sets of companies: in 2006 with Tullow and Heritage and in 2008 with Divine Inspiration Consortium, H-Oil, Sud and Congo Petroleum & Gas.

Litvinof (2012) also indicated that oil exploration was expected to begin in 2010–2011, but disputes and controversy have surrounded the PSAs, and plans were affected by Ituri's instability. Oil companies such as CNOOC, Eni and Total were also interested in entering the DRC's oil sector, specifically on the eastern side (Litvinof, 2012). Currently, there are three major oil companies conducting extractive operations in the DRC, including the Anglo-French firm Perenco, which is conducting off-shore oil extraction in the Atlantic Ocean off the coast of Muanda in the Kongo Central province of the DRC, the French oil company Total and the DRC parastatal Cohydro, which are involved in conducting exploratory and preliminary extractive operations in the eastern region of the DRC (Privacy Shield, 2020). Unfortunately, despite the entry of numerous international oil companies operating in the upstream sector of the DRC's petroleum industry, the entire oil and gas industry in the country remains disintegrated and under-developed- no societal or environmental development plans have brought change to the country. The unique petroleum refinery industry (SOCIR) remains dysfunctional and there is a lack of operational oil refinery industry development, given that SOCIR has closed down its operations since 1998. Due to the lack of an operational oil refinery in the country until today, the DRC exports its total oil output and imports all of its refined petroleum fuels and lubricants.

According to Petitjean (2014), oil companies in the DRC, mainly those in the extractive industry (the upstream sector), are an example of how oil extraction is destroying the environment and the livelihoods of local communities, without giving them almost anything in return. As evidence of the deplorable socio-economic situation which the DRC is in, in the Kongo Central province where extraction and production began in the 1970s until today, the Anglo-French company Perenco, which is currently the major oil company operating in the DRC, has brought no real evidence of socio-economic development benefits to local communities and to the country as a whole. In addition, it is deplorable that the extraction activities have a significant environmental and social cost for local populations. For example, in Muanda, the poorest oil city in the world, in the coastal town where the petroleum deposits are located, the exploitation of oil is synonymous not with wealth but with human rights violations (Petitjean, 2014).

This is an alarming situation since the DRC has become a prime hunting ground for international oil companies. Yet, the entire history of the DRC has been marked by the lack of genuine CSR best practices and bloody exploitation of its natural mineral resources (conflict of natural mineral resources) by international businesses and foreign powers. An awareness effort and capacity to develop and implement the necessary legal and policy instruments to avoid history repeating itself will result in a greater socio-economic change, specifically at this time with 20 billion barrel of oil reserves discovered in the eastern side of the DRC (Bustin, 2019).

MATERIALS AND METHODS

"The influence of the international environment on oil and gas industry development, as well as on the restructuring and upgrading of the petroleum refinery industry in the Democratic Republic of Congo"

Materials

In addressing the influence of the international environment on oil and gas industry development, as well as on the restructuring and upgrading of the petroleum refinery industry in the Democratic Republic of Congo, the PESTIE variables of the macro-environmental factors were implemented. According to Smit (2016), the PESTIE variables stand for Political, Economic, Social, Technological, International and Ecological factors that influence the petroleum industry to a greater and lesser extent. According to Erasmus (2014), the petroleum industry, as well as several other businesses, is exposed to threats and opportunities that derive from macro-environmental factors. In most cases in the DRC, threats from international or foreign states are weightier than the socio-economic opportunities that the country is expected to gain from their operations (the oil industry has little or no control over the macro-environment factors, like the international environment). A threat from an international environment/factor can be described as an external variable that could cause critical harm to the petroleum industry, while an opportunity refers to a situation/occasion that allows the petroleum industry to generate more turnover or profits (Erasmus, 2014). According to Smit (2016) & Erasmus (2014), macro-environmental factors are characterised by the interrelatedness of the environmental variables, increasing instability, environmental uncertainty and the complexity of the environment. Therefore, Erasmus (2014) postulates that the influence of the PESTIE variables on the petroleum industry can be characterised as follow:

1. Firstly, the interrelatedness of environmental factors/variables consists of a situation where a change in one of the external factors may influence/cause a change in the micro-environment (petroleum industry) and similarly, any change in one external factor may influence/cause a change in the other external factors.
2. Secondly, the increasing instability and change comprises one of the consequences of interdependence in the environment. This means that although the general rate of change in the environmental accelerates, environmental fluctuation becomes greater for some industries than for others.
3. Thirdly, environmental uncertainty remains dependent on the information that management has about environmental variables, as well as on the confidence that management must have in such information. Therefore, if there is little information available, or if the value of the information is suspect, the uncertainty of management about the environment will increase, and vice versa.
4. Fourthly, the complexity of the environment can indicate the number of external variables to which a business organisation (petroleum industry) has to respond, as well as variations in the variables themselves.

An understanding of the characteristics of the macro-environment variables indicates that it is significant for the management of any organisation, including that of the petroleum industry in the DRC, to know and comprehend the environment within which the business organisation operates. Therefore, in this paper, only one of the PESTIE environmental factors is examined, namely the international environment. The arguments in examining this single factor relate to the influence of the international environment on oil and gas industry development, as well as on the restructuring and upgrading of the petroleum refinery industry in the Democratic Republic of Congo. In addition, an analysis of the international environment's role in the petroleum industry could enable the government and the oil industry to improve policies, which may assist in managing opportunities or minimising risks (threats) that exist in the external environment (Williams, 2014). However, it was stated earlier that business environment instabilities may cause threats or opportunities in the petroleum industry. This paper focuses on discussing the role played by the international environment in the DRC's petroleum industry.

"The role played by the international environment in oil and gas industry development, as well as in the restructuring and upgrading of the petroleum refinery industry in the Democratic Republic of Congo"

According to Smit (2016); Erasmus (2014), in discussing or referring to the petroleum industry, the role of the international environment refers to situation in which foreign political trends and actions/events affect or drive the oil and gas industry (micro-environment) and the market environment. It is certain that in some countries, the international dimension offers more socio-economic opportunities in the host country in terms of investments, societal and environment development. However, developing countries most often are attracted and led by the influence of the amount of investments that foreign or developed countries intend to bring, without evaluating the consequent costs of risks or threats that such investment could cause in the country. Unfortunately, in developing countries, Corruption is used as a fatal gun to silence decision-makers in a situation where the negative impacts of the investment should be evaluated in terms of socio-economic and environmental effects or in terms of CSR. Yet, in these countries, the significance of CSR values is mostly neglected before, during and after the completion of investment projects.

Smit (2016); Erasmus (2014) further postulate that businesses operating internationally find themselves in a more complex situation or environment because every country has its own peculiar environmental factors, technology, economy, laws, politics, markets and competitiveness; each different from those of every other country. This means that international organisations or multinational organisations should be susceptible to adapting themselves to all kinds of international currents and trends practicable in the host country. Unfortunately, when it comes to developing countries like the DRC, the opposite becomes the reality. Laws and politics are influenced by the power of influential multinational organisations. For example in the DRC, international businesses or organisations in the petroleum industry should find themselves led and influenced by local politics, laws and environment factors, but the inverse is what is happening, with oil companies powerfully influencing government politics, laws and environmental factors. The illustration of all oil companies named further above, including the Anglo-French firm Perenco which is currently the major oil company operating in the DRC, has brought no real socio-economic change or development benefits to local communities and to the country as a whole (Mayimona, 2012).

In Muanda, the poorest oil city in the world, in the coastal town where the petroleum deposits are located, the exploitation of oil is synonymous not with wealth, but with human rights violations (Petitjean, 2014). In reality, having an abundance of natural mineral resources is not a curse, but the curse on developing countries is related to the increasing one-way effects of globalisation that pose more threats than opportunities to developing countries. The colonial economic system of the exploitation of natural mineral resources without processing them in the host country constitutes a critical threat to socio-economic transformation process. Globalisation seems to be a blessing or opportunity for international organisations or powerful states to keep controlling and dominating, even the market of natural mineral resources. According to Erasmus (2014), globalisation or the international environment brings opportunity or poses threat. The sub-section that follows indicates the effects of the international environment or globalisation on the DRC's petroleum industry.

A. Opportunities from the International Environment for the Oil and Gas Industry of the DRC

Erasmus (2014) described an environmental opportunity as a favourable condition or trend in the market environment that can be exploited to the business's advantage by a deliberate management effort. In addition, the possibilities inherent in an opportunity should always be assessed against the background of the organisation's resources and capabilities, given that without the necessary capabilities and resources, an opportunity can be poorly or not properly exploited. This implies that any opportunity from the international environment in the oil and gas industry of the DRC, such as it can be seen in various other countries, should include oil and gas industry integration; direct, indirect and induced employment development; and various multiplier socio-economic impacts. The initial direct economic effects include employment, wages, profits and GDP growth associated with the activities of the oil refining industry itself and its main suppliers. The initial indirect effects include relative or dependent industries development, and the initial induced multiplier effect is associated with the extra economic activity involving local spend from wages and local profit generated and the overall impact through other economic sector effects such as the increase in public service needs, which will lead to socio-economic activities development (education, health and security services infrastructure improvement).

According to the Regeneris Consulting Report (2013), the expected multiplier effects from the international environment in the oil and gas industry of the DRC should include the provision of opportunities related to overall oil and gas industry activities development (including oil and services development); health, education, transport and roads; power supply; fresh water supply and community project activities support infrastructure; increased employment and extra public jobs; government's increased revenue; etc. In addition, the Regeneris Consulting Report (2013) emphasised that an integration of the petroleum industry with oil refinery industry development (SOCIR) in focus could offer positive socio-economic opportunities to the country through:

1. The promotion of employment and provision of comfortable housing for company employees;
2. The attraction of other industrial operations development in the country;
3. Increased employment of environmental, health and safety specialists during and after the upgrading and completion project of the oil refinery;
4. The attraction of operating specialists with specialised secondary or higher education;
5. The production of quality fuel which will meet the most stringent quality standards, including international norms;
6. The reduction in the air pollution level on a provincial scale due to the use of environmentally sound fuel and as a consequence of using advanced technology that lowers the risk level of pollution in terms of infection and death rates amongst the population;
7. The development of environmental protection measures with the objective to improve the overall environmental situation in the refinery environment, as well as in the extraction environment;
8. The development of transport networks (motor roads, railroad lines, petroleum products pipelines);
9. Competitive working conditions and the improvement of the skills and qualifications of the operating personnel; and
10. The improvement of the employment situation and development of the occupational education and training in the country.
11. Unfortunately, the background of the oil and gas industry in the DRC is characterised by a strong influence of the colonial economic system that impedes efforts for the oil industry's integration and development. The DRC has an important, proven oil and gas potential in three sedimentary basins, including the Coastal Basin (located in Kongo Central province extending off-shore past the Congo River estuary), the Central Basin and the Western branch of the East African Rift. Currently, oil production is estimated at around 25 000 barrels per day. However, estimations indicate that production could be extended up to 100 000 barrels per day once new blocs in the east of the DRC will move into the production phase (Bustin, 2019). In addition, the DRC's oil potential is estimated at 20 billion proven barrels reserves, which align the country as second behind Nigeria, which has an estimated 37 billion barrels proven reserves and remotely above Angola, which has currently around 9 billion proven barrels reserves (Titeca, 2019).
12. Despite the great opportunity that the petroleum industry is offering to the country, the DRC is still missing an occasion to develop a suitable oil refinery industry. Consequently, without improving policies and ensuring the best practice of the rule of law, opportunity can turn into threat, curse and risk to social and environmental deterioration. Therefore, the lack of an operational oil refinery industry should be seen as an opportunity for the government to put in place policies and strategies that promote oil and gas industry development and the vertical integration of the petroleum industry so that the country could have all sub-sectors of the petroleum industry operational. Furthermore, the good use of opportunity by having international oil companies on the ground should be a great opportunity to promote downstream oil and gas activities development and diversification in the country. The prospective of producing an estimated of 100 000 barrels per day could inspire the government to increase their ability to develop, improve and enforce policies that facilitate vertical and horizontal integration strategies for local market development.
13. According to Erasmus (2014), a vertical integration strategy consists of linking the upstream oil and gas industry to the downstream oil and gas industry via midstream industry operations. This means that the development of the oil refinery industry in the DRC will be an opportunity for organisations in the upstream to directly provide raw materials or crude oil produced in the country to the processing industry, with the purpose of ensuring a local supply source to the refining industry and facilitating distribution channel development in and around the country. The horizontal integration strategy will be an opportunity for grouping companies operating in the upstream under a consortium organisation involving similar organisations to constitute a unique source of production and supply. This strategy may give access to new markets of private oil refinery development, promote competition in the downstream and diversify markets of oil and gas products development in the country. If so, social and economic activities diversification in the country may possibly create and promote the opportunity for more job creation. If not, colonial economic system will remain strongly ingrained and no socio-economic competitive advantages may be expected or experienced by the Congolese people.

B. Threats from the International Environment to the Oil and Gas Industry of the DRC

An environmental threat may be understood as an unfavourable condition or trend in the market environment that can, in the absence of a deliberate effort by management, lead to the failure of the business, its products or its services (Erasmus, 2014). In the DRC, it is the responsibility of the government to evaluate possible opportunities and threats from companies operating in the petroleum industry. In view of the influence of the international environment on the oil and gas industry in the country, it is the task of the government to identify threats that affect the petroleum industry's integration and development (both actual and potential threats) and develop a counter-strategy to meet them. Knowledge of the opportunities and threats from the international environment or organisations intending to invest in any sector of the national socio-economic environment should assist to identify opportunities and threats with the purpose of maximising competitive advantages and minimising potential threats, or turning them into opportunities. According to Smit (2016); Erasmus (2014), the focus of the government in evaluating the impacts of investments, such as those of international oil companies in the country, should significantly involve CSR values best practices and environmental development in the operational zone or in the country as a whole.

Frynas (2014) describes CSR as an approach that addresses the social and environmental impact of company activities. However, despite this understanding, the reality is that international oil and gas companies exert incredible power over the government of countries like the DRC in such a way that CSR values are minimised and not taken much into consideration. The partnership between government and international oil and gas organisations in the DRC should provide equitable and safe job opportunities to the poor, investing in the education and health of the disadvantaged poor population through small and medium enterprises development, or through their supply chains (which are not exist), and building affordable socio-economic infrastructure (roads, schools, hospitals, etc.). The oil industry can even develop opportunities for new technology development that facilitate disadvantaged people having access to social development. However, currently, this type of project cannot even be part of the strategic plans of oil and gas companies operating in the DRC.

In light of the aforementioned, it is therefore simple to understand that in the DRC, oil and gas companies, mostly in the upstream, are careless and can even intensify their wrongdoing in societies and environments without any drastic interventions from local or national governments, despite the fact that they are causing more harm to human health, human society, political governance and the natural environment (Petijean, 2014). Oil organisations are not meeting essential needs and are not honouring communities' values. According to Erasmus (2014), corporate social responsibility is the responsibility of oil companies operating in the oil and gas industry for the impacts of their decisions and activities on society and on the environment, through transparent and ethical behaviour. Therefore, the expectation is that oil and gas companies operating in the country should be liable for:

1. Contributing to the sustainable development of the community, including the health and welfare of society;
2. Taking into account the legitimate interests and expectations of stakeholders; and
3. Considering their compliance with applicable laws and policies of local government and international norms of behaviour; etc.

Unfortunately and sadly in the DRC, the business interests of the oil companies named earlier are treated as being above the interest of the communities, in such a way that social/ethical and environmental values are not considered with care. Unemployment, socio-economic disturbances and human rights violations in the DRC are results not only of business environment instabilities, but also of the lack of CSR best practices, as well as of government's inability to enforce the rule of law; policies, programmes and strategic plans and best practices that could guide organisations in all socio-economic sectors to comply with doing right or minimising their wrong doings.

C. The Influence of the International Environment on Restructuring and Upgrading the Oil Refinery Industry in the DRC

It was stated earlier that the international environment takes into account local and foreign trends and events that influence the oil and gas industry (micro-environment) and the market environment (Smit, 2016). Apart from the business environment instabilities impacting negatively on the oil and gas industry development in the DRC, the colonial economic model/system used for many decades in partnerships between consecutive governments of the DRC and international companies exploiting natural mineral resources in the country seems to be the forefront strong barrier obstructing the processing of industry development and socio-economic transformation process in the DRC. Due to the lack of refinery industries in the country, the economy of the DRC is totally dependent on the primary sector (natural mineral resources exports). This economic dependence refers to the colonial economic system that was established by the Belgium colony before, during and after the independence of the country in 1960.

Therefore, according to Engilbertsdóttir (2011), the colonial economic model instituted by the Belgian colony and international organisations, which was followed by a genuine policy of exploitation based on forced labour, was used to extract mineral resources from 1880-1920. This system has led to the fact that between 5 and 10 million Congolese natives, or roughly half of the population, died as a consequence of colonial brutality (Engilbertsdóttir, 2011). Predatory colonial companies robbed and continue to today to hinder the natives from accessing their resources. Moreover, Congolese people are killed and their hands being cut off and villages burned to force the inhabitants to deliver their resources or for them to be chased off their land, or be replaced by other people in order for international organisations to keep extreme control over natural mineral resources exploitation. Until today, this system has not changed, but it has been amplified as a strong barrier to processing industry development (SOCIR) and socio-economic transformation in the country.

Therefore, the exploitation model of colonial rule (domination over political, economic and social institutions) which is currently operational in the DRC excludes CSR values and focuses on mineral resources extraction and export only, without local community development plans or socio-economic transformation interests (Ilunga. 2015). The system has no ambitions for sustainable investments in processing industry development of local raw material output. Even today, this system still has very harmful impacts on the economic and social environment of the DRC, whereby Congolese people are still victimised and endure a long history of abusive international interactions on socio-economic dependence. International influence is strongly causing political instability; corporate monopolisation; military or armed conflicts that are driving leaders of political groups to committing human rights; and socio-economic rights violations without punishment (Engilbertsdóttir, 2011). Thus, the lack of restructuring and upgrading the oil refinery industry in the DRC is directly related to the strong influence of colonial economic systems, caused on one hand by the business environment instabilities in the country and on the other hand by the strong influence of globalisation or the international environment in the DRC.

METHODOLOGY

The mixed methods design was used in this study. According to Creswell (2015), the rationale for applying mixed methods in this study was to obtain a superior appreciation of the research problem through combining two different perspectives, one drawn from closed-ended response data (quantitative) and one drawn from open-ended personal data (qualitative). Furthermore, the mixed methods design was helpful in combining both quantitative and qualitative research methods and assisted the researcher in the procedure of collecting, analysing and mixing both quantitative and qualitative data at a certain level. According to Creswell (2011), the advantage of using mixed methods in this study was to allow complementary data and a more complete analysis of the research situation. The aim was to maximise the strengths and minimise the weaknesses of each type of data, as well as to view the problem from multiple perspectives in order to enhance and enrich the meaning of one perspective through merging or converging quantitative and qualitative data to develop an in-depth understanding of the research problem.

Therefore, the converged parallel design framework was also applied in this study for purposes of reflecting the process of interaction, priority, timing and mixing data. Quantitative and qualitative data collection and analysis were therefore designed following a framework involving descriptions, relationships, comparisons, as well as predictions (Creswell, 2011). In this study, a Likert scale instrument was used to assess whether respondents agreed with questions and also helped to uncover differences from one respondent to another, based on their understanding of a given statement (Sekaran & Bougie, 2013). Additionally, Sekaran & Bougie (2010) suggested that sample sizes larger than 30 and less than 500 are appropriate for most research. Therefore, in this study, a total of 105 respondents from the DRC's petroleum industry were involved as participants.

Respondents were selected from organisations such as SOCIR's (Congolese Company of Oil Refinery's Industry) managerial team; COHYDRO (Congolese des Hydrocarbures: French); the Ministry of Hydrocarbons (DRC); the Petroleum and Gas Institute (IPG); and public and private professional workers in the petroleum industry. The rationale for targeting this population was that they were a major source of information and key respondent groups involved in the oil and gas industry's activities in the country. Their experience in the oil sector represented a significant asset for the completion and achievement of this study's aim and objectives. Therefore, the reasons for including this population in this study may be understood as follow:

The Ministry of Hydrocarbons: This government department of hydrocarbons was selected in relation to the regulations and legislation currently implemented in the oil and gas industry of the DRC, which influence all operations associated with the petroleum industry in the country, for obtaining the perceptions of employees working under this department regarding the oil and gas industry's development concerns in the DRC;

COHYDRO: This is the government's principal agent, which is leading the entire petroleum industry's operations in the DRC and dealing with all hydrocarbon affairs in the country;

SOCIR: The SOCIR management was specifically selected to comprehend the challenges experienced by the oil refinery industry before, during and after the operational period and breakdown, as well as to gain insight into the various roles played by them in the refinery.

Insight into their perspectives for future upgrading and operationalization oil refineries in the country was also sought.

The petroleum and Gas Institute (IPG): IPG is the first academic institution to train students in the petroleum field in the Central African countries. IPG is now training leaders who are evolving their careers in the Congolese oil and gas industry, as well as in other African countries. The students and administrative staff of this higher education institute (Petroleum and Gas Institution) were selected in order to solicit academic perceptions and criticisms within the objectives defined for this study.

Public and private professional workers: Other professional stakeholders within the oil and gas industry were also targeted for their involvement in the oil field and for the necessity of gaining various perspectives concerning the oil industry's environment and operations in the DRC.

In light of the aforementioned, Creswell (2018) explained that the steps in mixing data analysis methods involve using quality statistical and thematic software programmes. Therefore, the Statistical Package for the Social Sciences (SPSS version 24.0) software programme for quantitative analysis and Nvivo-Pro software package version 11, descriptive and thematic text analyses for the qualitative analysis were used in this study. However, inductive thematic analysis was used to analyse interview data. The coding and generation of themes was done using the Nvivo software package for the interviews. Interview responses were grouped according to themes, which were compared to the main themes related to the quantitative results. Therefore, interviews were focussed on five of the administrative managers selected from the Ministry of Hydrocarbons; COHYDRO; SOCIR and the Petroleum and Gas Institute. The Nvivo software package assisted the researcher in coding, individually, respondents from these organisations. Thus, respondents were coded as follow:

1. R1 refers to COHYDRO;
2. R2 and R3 refer to the Ministry of Hydrocarbons;
3. R4 refers to the Petroleum and Gas Institute; and
4. R5 refers to SOCIR.

However, the focus of the qualitative data collected was on measuring the critical perceptions and understanding of experienced respondents involved in the DRC's oil and gas industry in order to comprehend their views regarding the objectives defined for this study. Additionally, the interview data involved capturing the input of respondents in relation to the influence of the international environment on oil and gas industry development, as well as on the restructuring and upgrading of the petroleum refinery industry in the Democratic Republic of Congo by means of using macro-environmental variables (Political, Economic, Social, Technological, International and Ecological). A chi-square test was implemented to indicate whether the difference in scoring patterns were significant, the purpose of which was to nullify the hypothesis which suggested that the scoring for each statement was the same. The scoring pattern for the statement pointed out significant differences, as their p-values were mostly less than the level of significance (0.05). In addition, another chi-square test was used to determine significant relationships between the variables. A bivariate correlation was also performed on the ordinal data, where positive values displayed a directly proportional relationship between the variables and negative values indicated an inverse relationship. Thus, the findings from quantitative and qualitative results were discussed and presented following the PESTIE variables.

RESULTS AND DISCUSSIONS

“Findings of quantitative and qualitative results following the PESTIE variables”

In this study, the results were presented at a descriptive and an inferential level. The PESTIE factors were used to analyse and discuss the influence of the international environment on oil and gas industry development, as well as on the restructuring and upgrading of the petroleum refinery industry in the Democratic Republic of Congo. In this study, the following abbreviations were applicable:

1. PESTIE: Political, Economic, Social, Technological, International and Ecological
2. SOCIR: Société Congolese des Industries de Raffinge (French)/ Congolese Company of Oil refinery Industries (English)
3. COHYDRO: Congolaise des Hydrocabures (French)
4. DRC: Democratic Republic of Congo
5. IPG: Petroleum and Gas Institute (DRC)
6. CSR: Corporate Social Responsibility
7. SPSS: Statistical Package for the Social Sciences
8. GDP: Gross Domestic Product
9. PSAs: Production Sharing Agreements

Moreover, in mixing results, the following symbols were used:

1. QN: Quantitative responses;
2. QL: Qualitative results;
3. Q1.A and Q1.B as well as C5A1 to C5A3 are symbols indicating questions and statements that were suggested to respondents; and
4. R1 to R represent respondents’ views or perceptions.

A. Inference of Quantitative and Qualitative Results

In mixing the QL and QN data collection, Creswell (2015) indicated that the way to merge two databases, namely one numeric and one text-based, is called *explanatory sequential design*. Therefore, the purpose of the explanatory sequential design for this study was to analyse the aim and objectives defined by reference, beginning with a quantitative strand (a strand refers to either the quantitative or qualitative component of a study). This was done to both collected and analysed data, followed by qualitative analyses that explained the quantitative results. In this study, the inferences from the qualitative results assisted in explaining the quantitative results. Furthermore, explanations were made in relation to the objectives of the study, which are relevant to the PESTIE framework. The sub-themes from the quantitative results were many, hence only the key components relevant to the study were included in the table below. According to Creswell (2015), the Table 1 below relates to mixed methods design for data analysis and assists in identifying the qualitative results that explain the quantitative results.

Table 1
INFERENCES OF QUANTITATIVE AND QUALITATIVE RESULTS

Factor	Themes: quantitative results	Sub-themes: qualitative results
International Environment	Challenges: The oil and gas industry, including SOCIR in the DRC, is operating under the international dependence and dominance model.	The colonial economic model based on exports of natural mineral resources and imports of all necessary petroleum finished products will not promote oil and gas industry integration and development, as well as oil refinery industry restructuring and upgrading (SOCIR) in the DRC.
	Effects: SOCIR modernisation and oil and gas industry integration and development could reduce or minimise the effects of international dependence and dominance in the oil sector.	SOCIR development could increase public and private investment initiatives in the country and promote a fair or non-discriminatory partnership between DRC and international partners in the oil sector.
Source: Self-generated by the researcher		

B. Mixing of QN and QL key Results Related to the International Environment

In the QN data collection, respondents were required to respond to the following question:

Q1A: Indicate the constraints or challenges experienced by the oil refinery industry (SOCIR) and the oil and gas industry development posed by the international environment.

The QN results related to major constraints or challenges experienced by the oil refinery industry (SOCIR) and oil and gas industry development in the international environment are indicated in Figure 1 below.

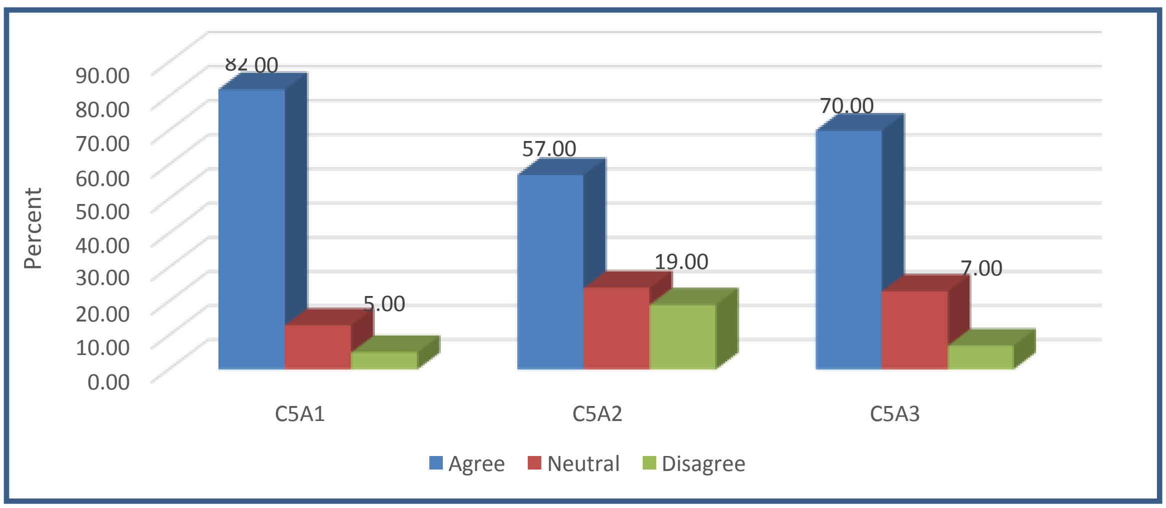

FIGURE 1
THE CONSTRAINTS OR CHALLENGES EXPERIENCED BY THE OIL REFINERY INDUSTRY (SOCIR) AND OIL AND GAS INDUSTRY DEVELOPMENT POSED BY THE INTERNATIONAL ENVIRONMENT

The statistical significance of the responses received indicated that all the p-values are less than the level of significance of 0.05. This means that the scoring patterns were significantly different. The average level of agreement for the major constraints experienced by the oil refinery industry (SOCIR), as well as oil and gas industry development from the international environment (82% and 70%) are highly demonstrative of the degree of control, dominance and total dependence with which the international environment affects the national oil and gas industry. The high cost of international finance in the DRC remains one of the major obstacles to socio-economic development in the country (57%). According to Smit (2016), the business environment grows with more opportunities and threats if the international dimension is added. Therefore, the findings showed that most constraints or challenges experienced by the oil refinery industry (SOCIR) and oil and gas industry development in the DRC are highly correlated to the statement that implicate the international-dependence and dominance models through which the oil and gas industry, including SOCIR in the DRC, operate under international command or mechanisms.

Q1.B: indicate the probable effects on the petroleum refinery industry (SOCIR), as well as oil and gas industry development, from the international environment.

It was required that respondents indicate their opinions and understanding of the probable effects on the petroleum refinery industry (SOCIR) as well as the oil and gas industry development from the international environment. The responses are indicated in Figure 2 below. The statements were designated by C5C1 to C5C3, which were suggested to respondents to indicate the levels of agreement, neutral or disagreement, as also shown in Figure 2.

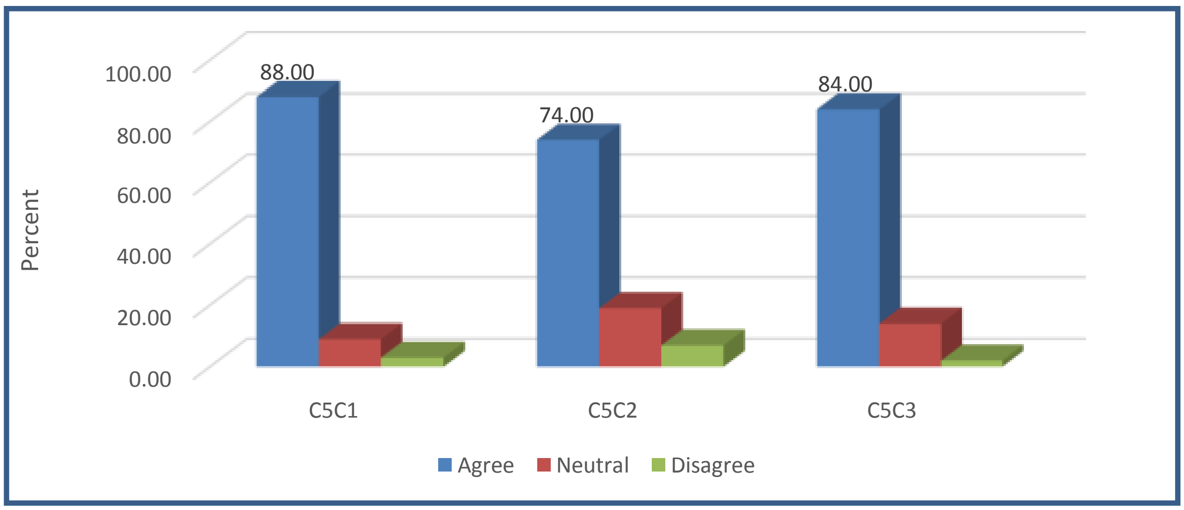

FIGURE 2
THE PROBABLE EFFECTS OF SOCIR DEVELOPMENT IN THE INTERNATIONAL ENVIRONMENT

The statistical significance of the responses indicated that all the p-values are less than the level of significance of 0.05. This implies that the scoring patterns were significantly different. Therefore, the findings showed that 88% of respondents have agreed to the fact that oil industry development, including SOCIR upgrading in the DRC, could reduce the effects of international dependence and dominance in the oil field; 84% of respondents acknowledged that the oil industry, including SOCIR modernisation, could increase the levels of public-private investments and entrepreneurship in the DRC; and 74% of respondents approved that the oil industry including SOCIR development in the DRC, could contribute to reducing the high cost of international finance increasing and improving local finance. Thus, the effect of a SOCIR upgrade could generate the integration and development of the oil and gas industry, as well as produce or attract related investments, which could consequently promote socio-economic activities improvement and generate much income through an expected economic diversity ambition. The opportunity for increasing tax income collection is indeed significantly predictable.

C. Discussions and Interpretations of QN and QL Results Related to the Influence of the International Environment on Oil and Gas Industry Development, As Well As on the Restructuring and Upgrading of the Petroleum Refinery Industry in the Democratic Republic of Congo

1. Mixing of QN and QL key results related to the international environment

"In the QN data collection, respondents were required to respond to the following":

Q1A: Indicate the most common challenges experienced by the petroleum refinery industry (SOCIR), as well as oil and gas industry development in the DRC from the international environment.

The QN Key Results are as Follow:

1. 82% of respondents revealed that the oil and gas industry, including SOCIR in the DRC, is operating under the international total dependency or dominance of colonialism model, whether for the exploitation and production of crude oil or for imports of petroleum products in the country;
2. 70% of respondents indicated that poor intermediation of conflict resolution by the international community in the DRC is a major obstacle to socio-economic activities development, including the delay in the process of oil and gas industry development; and
3. 57% of respondents showed their agreement on the statement indicating that the high cost of international finance remains an additional important factor that affects the socio-economic development process and the general state of the country.

"In the QL data collection, respondents were required to respond to the following question":

Q1B: How does the international environment affect oil and gas industry development in the country?

The QL Results are as Follow:

1. The lack of democracy and lack of credible democratic institutions in the country have led to multinational companies dominating not only the oil and gas sector exploitation, but also the exploitation of all natural mineral resources of the country;
2. The lack of well implemented CSR values and socio-economic rights and human rights in diverse sectors of the economy and in the country have led to a situation where the minority in power and their international partners are destroying the voice of the poor majority of Congolese people; and
3. The lack of existing credible trade unions in the oil and gas industry has also contributed to the on-going colonial model of economic exploitation.

2. Interpretation of QN and QL Results on the Challenges Experienced by the Petroleum Refinery Industry (SOCIR), As Well As Oil and Gas Industry Development in the DRC from the International Environment

Respondents' levels of agreement from the QN results concerning oil and gas industry reliance, international dominance and the current colonial economic system that drive socio-economic activities in the country correlate with QL responses that indicate the lack of business environment stability (lack of democracy and lack of credible democratic institutions in the country) to ensure the integration and development of the petroleum industry in the DRC, which have led to negative influences or the dominance of multinational companies operating not only in the oil and gas sector, but also in the exploitation of other natural mineral resources of the country.

The lack of accurate trade union interventions, as well as the lack of CSR values implementation in the oil and gas industry, was indicated by respondents in the QL data collection. The implication is that these problems exist and they are affecting the general state of the country, including the oil and gas industry. Generally, labour unions in all sectors of the economy play the role of managing and preventing a kind of agreeable and disagreeable relationship between employers and employees (Miller, 2006). In addition, respondents indicated that the existing Trade unions in the country are not really credible (powerless) in dealing with laws and regulations that are in place in order to protect and defend workers' concerns.

Concerning CSR, Hoskins (2012) stated that the value of undertaking CSR strategy development and then implementing its practice offers an effective communications program supporting it, which explains the nature of the activity and how it benefits the oil industry. In the DRC, respondents showed that the CSR principle of doing good by doing well is absent in the management of most socio-economic activities in the country. Therefore, the level of performance relative to CSR actions and activities appears difficult to evaluate due to the lack of information concerning the existence, or not, of the text of law relative to CSR implementation. CSR works in respect with human rights or socio-economic rights implementation. The lack or violation of these rights affect communities' effective participation and makes it difficult to expect any change to take place in the oil industry and in the living condition of the Congolese people as well.

3. Discussion Involving QN and QL Results on the Effects of the Petroleum Refinery Industry (SOCIR) Upgrade As Well As Oil and Gas Industry Development from the International Environment

"In the QN data collection, respondents were required to respond to the following":

Q1C: Indicate the probable effects of SOCIR development in the international environment?

The QN results are as follows:

1. 88% of respondents revealed that oil and gas industry development, including a SOCIR upgrade in the DRC, could reduce/minimise the effects of international dependency and the effects of a colonial economic system on the oil and gas industry sector;
2. 84% of respondents have confidence that a SOCIR upgrade and oil and gas industry integration and development could increase a transparent public- private partnership between international companies and the host country in order to promote investments or profitable entrepreneurship in the DRC; and

3. 74% of respondents indicated that oil and gas industry development, including a SOCIR upgrade, could contribute to reducing the higher cost of international finance by increasing and improving local finance through socio-economic activities development.

"In the QL data collection, respondents were required to respond to the following question":

Q1D: How can the international environment promote SOCIR innovation and oil and gas industry development in the country?

The QL results are as follow:

1. A Win-Win partnership based on the respect of Production Sharing Agreements (PSAs) or contracts between partners may lead to oil and gas industry development and SOCIR innovation;
2. Enforcing regulations and laws on oil and gas exploitation;, as well as monitoring and controlling socio-economic activities in this sector could stimulate international partners to implement CSR values that require business actors to play a profitable role for both shareholders and stakeholders;
3. Processing or refining natural mineral resources in the country could contribute to the expansion, development and integration of the oil and gas industry, including oil and gas services development; and
4. Reducing/minimising the exports of crude oil by modernising SOCIR with up-to-date equipment could promote the oil and gas industry integration and development of the country.

4. Interpretation of QN and QL Results on the Effects of SOCIR Upgrade in the International Environment

The observation of both QN and QL results indicate positive and negative correlations. There is a significant positive correlation between the QN statement which indicates that oil and gas industry development, including a SOCIR upgrade in the DRC, could reduce the effects of international dependency and the effects of a colonial economic system on the oil and gas industry sector and the QL statement which points out that the processing or refining of natural mineral resources in the country could contribute to the expansion, development and integration of the oil and gas industry, with statements displaying that reducing the effects of exporting crude oil by modernising SOCIR with up-to-date equipment could promote the oil and gas industry's operational improvement in the country. There is also a positive correlation between the QN results and the QL responses that a SOCIR upgrade and oil and gas industry development could increase a transparent partnership with international investors for private investments or profitable entrepreneurship in the DRC and the statement indicating that a Win-Win partnership based on the respect of production sharing agreements or contracts between public and private partners could lead to oil and gas industry development and SOCIR innovation. Meanwhile, the negative correlation implicates the QN and QL results on the following statements: a SOCIR upgrade could contribute to reducing the high cost of international finance by increasing and improving local finance through socio-economic activities transformation and enforcing regulations and laws on oil and gas exploitation. Monitoring and controlling socio-economic activities in this sector could help international partners to implement CSR values that require business actors to play a profitable role for both shareholders and stakeholders. In more explicit detail, these last two statements can lead to the complementarity of meaning with regard to the implementation of regulations and laws that could lead to socio-economic change in the country.

INFERENCE AND RECOMMENDATIONS

According to Erasmus (2014), the influence of the international environment and multinational organisations (globalisation) in any country, including in the DRC, can be seen or measured in two dimensions. Globalisation does not only present opportunities, but it also poses threats. Therefore, the international environment comes with changes that may offer an opportunity or changes that may pose a threat. However, changes that offer opportunities contribute to socio-economic transformation or environmental development. It develops necessary capacities and resources, as well as the promotion of human capital capacity development through the best practice of CSR values. In contrast, due to many threats posed by globalisation to developing countries like the DRC, the knowledge of threats from the international environment should be considered as an opportunity by developing countries in order to identify such threats and develop a counter-strategy to meet them. The knowledge of threats should also inspire the government of the DRC to take necessary decisions that will maximise opportunities for processing industry development, economic diversification and socio-economic transformation.

The lack of socio-economic transformation, as well as the lack of petroleum industry integration and development in the DRC, is linked to several causes. The most critical ones are the business environment instabilities, the colonial economic system imposed by the predator Belgian colony and the adversative effects of globalisation. The lack of secondary sector development (refinery or production sector) kept the entire economic system, including the oil and gas industry in the DRC, dependent or reliant on exports of natural mineral resources for the import of quasi-total needs. Unfortunately, it seems to be very difficult for the expected change to become realistic. The DRC is still strongly struggling with institutional impartiality or freedom, as well as institutional legitimacy. The country is not yet ready for heavy investments due to various local and regional conflicts that are causing a lack of confidence for many entrepreneurs and investors who are willing to take a risk or to make a decision for investment in a country like the DRC, which is affected by critical institutional crises.

Therefore, efforts to stabilise the business environment in the country should be at the forefront of the decision-making of the current and future governments in the DRC. The entire oil and gas industry integration and development, including the petroleum refinery industry restructuring and upgrading, will not be possible if the country will continually lack the best practice or the enforcement of the rule of law, as well as if laws, regulations, policies, programmes and strategic plans that should guide petroleum industry activities in the country are not improved and well implemented. The colonial economic system, which is governing socio-economic activities in the DRC, will go nowhere and will not be defeated unless collective and drastic efforts are put in place to control and minimise the threats posed by the international environment in the country. An important crisis that must be solved together with the colonial economic system in the DRC is the lack of positive human capital capacity development. Apart from the PESTIE capacities that need to be improved and developed in the DRC, positive human capital capacities development in all spheres of the business environment, particularly in terms of improving the macro-environment factors, will help the country in attempting to find a way to solve the critical challenges that affect the petroleum industry and the entire socio-economic environment.

The DRC will have to pay attention to developing positive human capital capacity in order to ensure the best practice of solutions that may lead to realistic socio-economic activities development. However, the best practice of solutions (policies, programmes and strategic plans implementation) seems to be impossible without moral capital capacity development in the country. Table 2 below indicates the necessary dimensions of positive human capital capacity that need to be developed as a "*sine qua non"* condition prior to socio-economic transformation in the country.

Table 2

DIMENSIONS OF POSITIVE HUMAN CAPITAL CAPACITY DEVELOPMENT

Type of Capital capacities development needed for socio-economic development in the DRC	Explanation/ Function	Attributes/Constituents
Moral Capital development	Habits and attitudes relating to right and wrong; usually demonstrated by human conscience	Integrity, humility, sincerity, charity, courtesy, patience, faithfulness, sensitivity, purity, honesty, kindness, justice, honesty, trust etc.
Aesthetic Capital development	A strong sense and commitment for excellence/attractiveness; ability to appreciate good work/looks; truth; and skills to judge what is good and acceptable	Passion for modernisation; imagination, inventiveness, innovation and creativity
Human Capital development	The know-how and skills acquired and used to enhance human productivity.	Skills (technical, conceptual, intellectual, analytic and communications)
Human abilities development	The power/capacity to accomplish tasks competently; a necessary component of acquired human capital to ensure efficiency	Wisdom, vision, commitment, judgement, responsibility, reasoning, competence, interest, devotion, dedication
Human Potentials development	Human talents and capabilities waiting to be harnessed for people-centred development; existing human potentials at any time depend on the levels of spiritual and moral capital	Visionary, creativity, initiative, reaching for excellence, confidence, etc.

Spiritual Capital development	The aspect of the human personality that possesses the capability to be in tune with the universal laws and principles of human life by which humanity must live if the "good and abundant life" is to be achieved; provides insights and furnishes creativity, inventiveness	Pursuit of and carrying out what is true, obedience to the truth; effectiveness in carrying out tasks; creativity, inventiveness
Source: Adapted from Kwame (2017)		

In light of Table 2, it is possible that an investment in human capital capacity development as well as to socio-economic activities development, including the petroleum industry integration and development, could generate economic diversity, which consequently could boost the demand for energy usage in the country. Yet, positive human capital capacity development may be a vital key in minimising the dependence on corruption and other forms of malpractice, which could assist in reversing the detrimental effects of international environment in the DRC. Accordingly, relating to the international environment as a factor of the PESTIE variables that cause opportunities and pose threats to the oil and gas industry development in the DRC, the recommendations are as follows:

It was indicated further above that the international environment involves local and foreign trends and events that influence the oil and gas industry (micro-environment) and the market environment. Therefore, international and multinational companies operating in the DRC affect, to a greater and lesser extent, oil and gas industry development. It creates opportunities and threats for the well-being, or not, of national oil and gas industry. However generally, globalisation in the DRC and particularly in the oil and gas industry does not offer great opportunities or a real socio-economic change. Most contracts or cooperation between the DRC government and foreign partners in several economic sectors and particularly in the oil and gas industry are negotiated informally, out of legitimate practice. These kinds of contracts are based on the exploitation of natural mineral resources and do not promote socio-economic transformation, including human capital capacity development. The practice of colonial economic systems that involve natural resources exploitation and export only, without being processed in the country, indicates sufficiently that the government of the DRC is powerlessly reliant on international control.

With this kind of dependence and control, no efforts can be successfully projected to industrialise the economy, nor can change of the socio-economic situation be predicted or expected in the country. Globalisation forces over the intense exploitation of natural mineral resources are very strong. The DRC will have to focus on developing strong policies that promote the rule of law; the best practice of policies, programmes and strategic plans; and promote economic diversification by investing on the restructuring and innovation of the refinery industry, such as SOCIR. The focus on diversifying efforts in other core competitive advantage sectors, namely hydroelectric barrage, agriculture, water, forest, tourism and many others, to anticipate the increasing demand driven by the future exploding African and Asian economies will foster ways to socio-economic sustainable development. Furthermore, the DRC government will have to constantly assess possible global threats to national interest and to the ecological environment when signing contracts with foreign partners.

CONCLUSION

This paper addressed the influence of the international environment on oil and gas industry development, as well as on the restructuring and upgrading of the petroleum refinery industry in the Democratic Republic of Congo. Therefore, the international environment influences the oil and gas industry, whether through changes that offers opportunities or through changes that pose threats. The findings revealed that the international environment as an important variable of the PESTIE factors; the colonial economic system currently in place in the country; the lack of the rule of law, as well as policies, programmes and strategic plans; and a lack of best practice are amongst the significant challenges that adversely affect the petroleum industry's integration and development in the DRC.

With the international environment, more threats and a lack of CSR values best practice were identified, instead of opportunities that should lead to socio-economic and environmental transformation in the DRC. Generally, the business environment instabilities, and particularly the international environment model of extraction-production and exportation without transformation associated with institutional deficiency or failures to implementing the rule of law, as well as various regional conflicts, are harmfully standing as strong barriers to restructuring and developing the processing industry in order for natural mineral resources to be refined locally in the country. Thus, in all situations, it is imperative that the government of the DRC should create mechanisms to develop greater awareness and efforts to minimise threats from the international environment and ensure a stable business environment in the country. In addition, the DRC should develop local capacities or competencies in terms of human capital skills development in all sectors of the economy in order to improve the country's ability of turning challenges/threats into opportunities.

Developing dimensions of positive human capital capacity is a *sine qua non* condition in addressing the challenges related to the business environment instability and ensuring the best practice of the rule of law, best usage of policies, programmes and strategic plans that support or promote socio-economic activities development in the DRC. Finally, the great challenge for the DRC and any other developing country is to overcome their dependency on colonial economic models based on natural mineral resources exportation exploitation?, like oil, and diversify their economies. Investing in processing industry development through a fair and win-win partnership between the DRC and foreign partners, taking into consideration CSR values best practice, should also be part of all production sharing agreements (PSAs) negotiation with multinational companies operating whether in the oil and gas industry or in various other sectors of the national economy.

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