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# **The Role of Country-level Institutional Factors in Escaping the Natural Resource Curse: Insights from Ghana**

## **Abstract**

*Empirical research shows that developing countries that are rich in natural resources tend to suffer slow economic growth and development due to various factors such as quality of institutions, governance, among others. The phenomenon of slow growth is widely known as the 'natural resource-curse' within the energy sector literature, and past research suggests that the membership of international non-governmental organisations and transparency are key factors in supporting economic development. However, limited research has been conducted to explore the key factors and their impact on the 'natural resource-curse'. This study utilizes 222 cases from 18 of Ghana's key stakeholders and finds that the membership of country's Extractive Industries Transparency Initiative (EITI) and petroleum revenue management policies are insufficient to avert its 'resource-curse' unless they are complemented with country-level institutional factors such as the quality of institutions, quality of governance, government effectiveness, accountability, corruption control mechanisms, natural resource sustainability and effective accounting practices. Consequently, the study contributes to the deeper understanding of complex macro-level factors interlinked with the 'natural resource-curse'. We also discuss the theoretical and practical implications of these findings, along with suggestions for future research.*

## **Keywords:**

Resource-curse, transparency, accountability, sustainability, institutional quality

## **Introduction**

Since oil discovery and exports have positively impacted upon developed countries (Larsen, 2006), one would naturally conclude that petroleum discovery in developing countries particularly in Sub-Saharan Africa (Yates, 2006), would be similarly advantageous to those economies. However, the likelihood that petroleum discovery in developing countries would be a blessing rather than a curse is an issue that is regularly debated within the energy sector literature and amongst policy makers (Ablo, 2015). The widely researched issue on the ‘natural resource-curse’ hypothesis (Atkinson and Hamilton, 2003; Papyrakis and Gerlagh, 2004; Kopiński et al., 2013; Satti et al., 2014) also called ‘the paradox of plenty’ (Karl, 1997) assumes that developing countries that are rich in natural resources (Mikesell, 1997) are susceptible to petroleum revenue mismanagement, poor governance (Watts, 2004), rent-seeking behavior (Kopiński et al., 2013), corruption (Roberts, 2015), socio-economic and political crisis and conflicts (Le Billon, 2006) that can weaken democratic processes (McFerson, 2010), stability, growth and development (Robinson et al., 2006; Mehlum et al., 2006). This phenomenon is hypothesised that resource-rich developing countries tend to grow more slowly than their less resourced counterparts (Sachs and Warner, 1995, 1997, 2001; Humphreys et al., 2007). Though this paradox has attracted significant academic attention, studies have primarily focused on transparency and accountability, including efficient and equitable management of natural resource wealth in developing countries as being the antidote to the natural resource sustainability (Torvik 2002, 2009; Collier et al., 2011; van der Ploeg, 2011; Ackah-Baidoo, 2012; Corrigan, 2014).

Subsequently, decades of intervention from the World Bank and the various structural adjustment and economic recovery programs by the International Monetary Fund (IMF), Ghana is said to be

one of the fastest growing economies in Sub-Saharan Africa (Adams et al., 2017). It is seen as a beacon of democracy and progress in Africa, where international businesses strive, due to its socio-economic-political stability and peaceful environment (Adams et al., 2017). Ghana's recent discovery of oil in commercial quantities prompted their membership in the Extractive Industries Transparency Initiative (EITI) and the implementation of policies supporting natural resource sustainability, in anticipation of achieving faster economic growth and development. In this ideal environment, and despite the misfortunes of some of the oil-rich Sub-Saharan African (SSA) countries, one would expect Ghana to achieve significant economic growth and development as a natural outcome. It is against this background that Kopiński et al. (2013) come to their own conclusion that Ghana's oil discovery cannot be a curse, but at worst, a treatable disease. However, studies into Ghana's natural resources (e.g., Gyampo, 2016 and Gyimah-Boadi and Prempeh, 2012) reveal gaps in the legislative and institutional frameworks within Ghana's petroleum sector. It is against these mixed findings, coupled with Ghana being a recent developing economy to join the Africa's oil export giants and EITI that Ghana is chosen as the setting for this work.

Consequently, studies into the underlying causes and ultimate prevention of the 'natural resource-curse' phenomenon reveal that there is a relationship between oil-rich developing countries, and negative traits such as corruption, ineffective accounting and control systems, revenue mismanagement, poor institutional quality, and ultimately economic stagnation. However, in contrast to the 'natural resource-curse' hypothesis, an investigation into the stimulating role of natural resource abundance with regard to financial development finds that natural resource abundance contributes to financial development and that economic growth and financial development correlate positively (Shahbaz et al., 2017).

In examining the ‘resource-curse’ phenomenon, Kopiński et al. (2013) establish that developing countries which are resource-rich are vulnerable to the petroleum revenue ‘rent-seeking behaviour’ of multinational corporations (MNCs). Kolk and Lenfant (2010) also argue that MNCs that lobby SSA governments to provide remarkably long tenure operational licenses and tariff protections are prevalent. In addition, Kolstad and Wiig (2009) and Frankel (2010) agree that natural resource revenue mismanagement seems to be one of the major factors contributing to a weakening in SSA’s democratic processes and economic development. There seems to be a consensus amongst many authors (Atkinson and Hamilton, 2003; Auty, 2002; Brunnschweiler and Bulte, 2008; Davis and Tilton, 2005; Humphreys et al., 2007; Mehlum et al., 2006) that oil discovery in developing countries, particularly in Africa, remains a ‘curse’, rather than yielding economic advantage or sustainable development for those countries.

Recently, several studies have focused this area of research towards a wider stakeholder-management approach. These studies suggest that quantity of resource deposits and geographical concentration (Corrigan, 2014) including membership of the EITI could help natural resource-rich developing countries to escape the ‘natural resource-curse’ (Van Alstine, 2014; Sovacool and Andrews, 2015; Sovacool et al., 2016; Kasekende et al., 2016). Based on these arguments, measures to sustain accountability frameworks, quantity of resource deposits, and geographical concentration including efficient accounting and reporting systems and standards have become core requirements as developing countries attempt to escape the ‘natural resource-curse’ to ensure lasting economic transformation.

Fresh insights have been presented by Abdo and Kouhy (2016) and Siakwah (2017) who argue that issues of oil boom periods (‘peak periods’) and their associated low world oil prices have

become widespread and increasingly problematic., The combined daily output of global oil producers reaches its peak and subsequently begins to decline. It is then argued that this results to oil windfall mismanagement which impacts negatively on individuals, oil firms, and governments in developing countries (Papyrakis and Gerlagh, 2004, 2006) such as Ghana. Moreover, given the low standard of democratic and weak institutional structures (Gyampo, 2016), the call to examine the revenue management of new oil discoveries in SSA, in particular, is timely.

The fundamental research question driving this paper is: *To what extent can EITI membership, corruption mitigation strategies, the quality of institutions and quality of governance work to influence the escape from the resource-curse for natural resource-rich countries in Africa?* Having been unable to cite any study which combines economic advantage (resource-curse) theories and transparency theories with EITI membership and corruption mitigation strategies, this paper contributes to the current resource-curse debate by explaining how the implementation of country-specific institutional initiatives could guarantee transparency and accountability in SSA's energy sector. It therefore enriches the understanding of how oil-producing developing countries could overcome the resource-curse issue. Specifically, this work could help Ghana adopt resource-curse escape strategies and implement policy changes, which could contribute to its sustainable development and economic growth.

The paper examines the literature around accountability and transparency, leading to the development of a conceptual framework for the research. The research context, and methodology adopted in collecting and analysing the data are then explained. Results are presented and conclusions outlined. The paper closes with a discussion around the potential limitations of the

study, implications for policy development, and finally, identification of opportunities arising for future research.

## 1. Literature review and theoretical framework

### 2.1 *Quality of institutions, quality of governance and government effectiveness*

Transparency and accountability for oil resources (Belal et al., 2013; Koessler and Lambert-Mogiliansky, 2013; Cimpoeru and Cimpoeru, 2015) and financial reporting (Porter et al., 2003), including the EITI (Kasekende et al., 2016; Öge, 2016; Sovacool et al., 2016), and their influence on economic growth (Sachs and Warner, 1997) and resource-curse and its possible escape (Collier et al., 2011; Al-Kasim et al., 2013; Bhattacharyya and Hodler, 2014) have been widely studied. Transparency protagonists, such as Corrigan (2014) and Kasekende et al. (2016) are of the view that the adoption of principles and memberships of organisations such as the EITI could help countries to escape the oil resource curse. However, Kolstad and Wiig (2009) argue that transparency alone is insufficient to eliminate corruption and avert the resource curse. In order to eliminate corruption, transparency must focus on improved access to information. Studies that have examined contextual issues in Africa (e.g., Gyampo, 2016 and Gyimah-Boadi and Prempeh, 2012) contend that the gaps in legislative and institutional frameworks in Ghana's petroleum sector have signalled substantial inadequacies in the nation's contemporary democratic dispensation. The authors' description of the Ghanaian context as "factional," "venomous," and "acrimonious" suggests that Ghana's oil discovery has resulted in a disintegration of politics and political culture. Personal attacks and ad hominem accusations have replaced principled policy-based disagreements and discussions. Regular instances of political grandstanding and gamesmanship have marked the economic and political landscape since the discovery of oil in Ghana. In contrast to this, Kopiński et al. (2013) argue that Ghana's stable political system,

coupled with their relative full-flavored diversified economy and civil society strength, makes it impossible for the oil discovery to ruin the economy. They hold the opinion that the ‘curse’ must be seen as a ‘treatable disease’.

The debate on the resource-curse, according to Corrigan (2014), has its roots in the economic advantage and transparency philosophies, from which accountability, the quality of institutions, quality of governance, and corruption mitigation strategies emanated. The resource-curse theories explain the economic effects of natural resources abundance and relevant sustainable development. Robinson et al. (2006) believe that accountability, the quality of institutions, and the quality of governance all work to mitigate corruption. Furthermore, Sachs and Warner (2001) and Mehlum et al. (2006) argue that weak institutions impede growth rates in resource-rich countries and transparency and accountability have an effect on institutional quality, which then determine fiscal transparency and higher governance quality (Andreula et al., 2009; Boschini et al., 2007; Collier and Gunning, 1999; Sala-i-Martin and Subramanian, 2008). Similarly, Farooq et al. (2013), Othman et al. (2014) and Rock and Bonnett (2004) agree that there is a link between effective accounting and a country’s supporting institutions in combating corruption.

Studies by Satti et al. (2014) on the resource-curse hypothesis in oil abundant economies, agree that natural resource abundance may result in slower economic growth. Similarly, Ahmed et al. (2016) incorporate economic growth as a function of natural resources and discover that natural resource and macroeconomic factors could be simultaneously determined. They confirm that natural resource abundance impedes economic growth. In establishing the connection between natural resources and economic growth in developing countries, Sachs and Warner (1997)



discover that natural resource-rich states experience slow growth as compared to states with few natural resources. All these studies conclude that developing countries endowed with natural resource abundance suffer slow economic growth and development. The question still remains, however, as to why most resource-rich economies perform economically well while others owning the same quantity of resources perform poorly economically (Torvik, 2009). The debate becomes more complex with further questions about the quantification of the natural resource sector. Whilst Corrigan (2014) argues that the realities of the existence of the resource curse depend on the resolution of the measurement, Sachs and Warner (2001) contend that it is better to consider a country's resource concentration instead of assessing it on the per capita basis. The idea behind this is that oil concentration in a particular region can sometimes create a 'crowding out effect'. These antecedents imply the quality of institutions becomes the fulcrum upon which economic growth could be achieved and sustained. Quality of institutions refers to the rule of law and government effectiveness in protecting rights of investors and creditors. The success stories of resource-rich states like Norway and Botswana have triggered researchers to study the quality of institutions, which plays a key role in developing the management of oil revenue (Corrigan, 2014). Mehlum et al. (2006) state that institutions with poor quality are linked with slow growth rates in resource-rich countries. Contrary to Sachs and Warner's (2001) study, they indicate that countries having institutions equipped with good quality management do not suffer the resource curse.

In examining the economic performance of natural resource-rich economies in Africa, Collier and Gunning (1999) found that weak institutions and inadequate environmental management accounted for the slow economic growth. In a related study, Tornell and Lane (1999) noted that

economies with strong political institutions tended to suffer slow growth while power decentralisation hastens growth. Sala-i-Martin and Subramanian (2008) also provide evidence for the significant connections between institutional quality, natural resources, and growth. They establish that natural resource abundance negatively affects institutional quality. Studying the impact of natural resources on economic growth, Boschini et al. (2007) state that strong and sufficient institutional quality can reverse a resource-curse into a socio-political and economic blessings. Robinson et al. (2006) also consider how resource abundance can affect societies. They find that politicians in states without strong institutions turn to ‘clientelism’ to undervalue the future, due to their limited likelihood of retaining power. This results in sudden outrageous supply, making ‘peak oil’ issues even more difficult to deal with. However, in a robust institutionalised economy, resource abundance may increase national income. Using a theoretical model to explain empirical issues concerning the natural resource curse, Cabrales and Hauk (2011) observe that resource discovery can lead to upheavals, particularly in weak institutionalised countries. It is worth noting that since the state might have less control over resource quantities, institutional quality becomes the ultimate crucial factor of results (El Anshasy and Katsaiti, 2013). It is from this literary perspective that the following hypothesis is drawn:

*H1: The quality of institution, quality of governance and government effectiveness are positively related to the ‘natural resource-curse’ escape.*

## *2.2 Accountability and corruption control mechanisms (ACM)*

Samimi and Abedini (2012) find that corruption is a crucial determinant that hinders macroeconomic performance in developing nations. Additionally, Farooq et al. (2013) and Rock

and Bonnett (2004) state that corruption slows economic growth and investment. Othman et al. (2014) believe that power, opportunities, and moral impurities are the main driving forces behind corruption in developing countries. Arezki and Brückner (2011) examine oil rents affecting corruption and state stability and find that a substantial increase in oil rents deepens corruption, which negatively affects political rights, particularly where there is high state participation in oil production. Furthermore, Ross (2001) explains the ‘rentier effect’, whereby governments of resource-rich nations practice less ‘tax rates and patronage’ in order to reduce tension towards accountable bodies. Since governments of oil resource-rich countries achieve high levels of revenue from oil rents, they therefore tend to focus less on taxation implementation. This makes them less accountable to the taxpayers and less motivated to embark on developmental projects to bring economic benefit to the country. Hence, Buccina et al. (2013) suggest that in order to avoid corrupt practices and to escape the resource-curse, there must be appropriate standards for financial reporting and disclosures, and this must include environmental aspects. Based on these studies, the paper presents the following hypothesis:

*H2: Accountability and corruption control mechanisms are positively related to the natural resource curse escape.*

### *2.3 Accounting and Petroleum revenue management (APRM)*

The paper also considers the role accounting plays regarding transparency and accountability issues in curbing corruption and the resource-curse in natural resource abundance economies (Belal et al., 2015; Holmgren Caicedo, 2015; Sikka and Lehman, 2015). Sargiacomo et al. (2015) argue that the adoption of best management accounting practices enhances the quality of accounting information delivery, which leads to effective resources management, firm survival

and competitiveness. The separation of ownership and management of oil production and revenue management, the emergence of private companies and certain key state institutions in developing countries call for the introduction of mandatory accountability. Stakeholders dealing with external financial statements require assurance that information reported in such documents is reliable (Porter et al., 2003). The International Financial Reporting Standard (number 6) has been specifically developed to deal with the accounting and reporting around mineral resources. Neu et al. (2015) argue that, as an anti-corruption mechanism, there must be internal controls and monitoring systems to minimise unethical issues and immoral behaviour. However, Sikka and Lehman (2015) argue that even if internal mechanisms in state departments are adequate, they might not guarantee substantial impact in reducing corrupt practices including securing and sustaining government contracts. In line with the above arguments, the paper develops the following hypothesis:

*H3: Accounting and petroleum revenue management practices are positively associated with the 'natural resource-curse' escape.*

#### *2.4 Natural resources sustainability and accounting (NRSA)*

Natural Resources sustainability accounting and reporting practices could be implemented in the context of natural resources, using insights from traditional financial reporting model (Gray, 2010). Bebbington and Larrinaga (2014) recommend the need for sustainable development through the use of sustainable accounting. In support of this argument, Gray (2010) examines auto-critique of sustainability accounting and argues that there must be clarity of what sustainability really means to facilitate its application towards sustainable development. This comes with the responsibility to account for the environment and sustainability of natural

resources (Bartelmus, 2007). Jones (2010) and Noël et al. (2010) agree that in ensuring natural resource sustainability, correct and quality-controlled environmental accounting can never be underestimated. In essence, effective implementation of environmental accounting could contribute positively to socio-economic decision making (Cairns, 2006). In reviewing the factors that lead to the ‘natural resource-curse’, it is clear that quality governance, quality institutions, corruption mitigation strategies and membership of relevant organisations could all work as a precursor in order to avoid the ‘natural resource-curse’ in Africa, and Ghana in particular. In line with prior literature, the following hypothesis is developed:

***H4: Natural resource-sustainability and accounting practices are positively related to the natural resource curse escape.***

### *2.5 EITI membership (EITIM)*

In 2002, former UK Prime Minister, Tony Blair, launched the Extractive Industries Transparency Initiative (EITI). This has developed international standards for resource-rich governments to ensure increased transparency and accountability (Corrigan, 2014). As of February 2016, the EITI has successfully enlisted 51 resource-rich countries as members (Kasekende et al., 2016) including Ghana. Currently, most of the EITI members are developing countries, and therefore, the impact of EITI, in terms of transparency and accountability in the oil and gas sector could be highly significant. The European Union, African Union, G8 and G20, and the United Nations have collectively approved the EITI. Advocates of EITI membership argue that corruption in resource-rich countries could be mitigated substantially by disclosing oil and gas revenues and payments in member countries (Kasekende et al., 2016). The paper believes that a government’s participation in the EITI is a signal of that government’s willingness to reform, and ensure

transparency, by adopting best international standards. Furthermore, a member country's failure to disclose oil and gas transactions may increase risks of reputational loss and disruption in financial aid or foreign investment (Corrigan, 2014). EITI membership is thus a positive wider-reaching signal of a country's commitment to sustainable natural resource management. In terms of EITI membership, this has made the biggest contribution in terms of setting standards to facilitate 'transparency and accountability in resource-rich countries'. In his investigation into "breaking the resource curse" using EITI, Corrigan (2014) concludes that the EITI's success in achieving its goals remains elusive. Furthermore, the perceived positive effects are inconclusive, since they are conditional upon the existence of resource abundance. Corrigan (2014) also concludes that though EITI has succeeded in protecting some nations from some selected items of the resource-curse, EITI itself is a recent development initiative and needs sufficient time to fully implement its policies. The paper therefore hypothesizes that:

*H5: EITI membership is positively related to the natural resource-curse escape.*

## **2.5 Conceptual framework**

From an examination and analysis of the literature, it is clear that transparency and accountability, along with improved and high quality institutional frameworks, are recognized antidotes mitigating the adverse effects of resource wealth in developing economies. As outlined earlier, if EITI represents a signal of a country's preparedness to restructure institutions and enhance accountability and transparency, then membership must bring positive change in national level economic indicators (Corrigan, 2014). This paper argues that transparency alone is insufficient in supporting developing countries to escape the resource-curse. The paper argues that Ghana's EITI membership, together with its corruption mitigation, quality institutions and

quality of governance all work to affect Ghana's possibility of escaping the resource-curse, and this forms the basis of the conceptual framework of this paper. The methodology section sets out the procedures used to test each hypothesis presented in this framework.

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## **2. Methodology**

### *2.1 Research context*

Ghana is amongst the fastest growing economies in Sub-Saharan Africa and has also been consistently considered as the beacon of democracy and progress (Adams et al., 2017). According to UNCTAD (2017), the country has subsequently become one of the top destinations for foreign direct investments (FDI) due to the prevailing favourable business environment. In 2007, Ghana officially joined the group of Africa's oil-rich states, after MNCs in conjunction with GNPC, discovered oil reserves in commercial quantities in the Jubilee Field, along the Western coast of Cape Three Points (Ayelazuno, 2014). Ghana is currently the 11th largest oil exporter in Africa, and the 47th largest oil exporter in the world, with daily production of 106,000 liters from the Jubilee Field alone (McCaskie, 2008; Ayelazuno, 2014). Ghana is an appropriate location for this research since it is widely representative of most countries in the SSA region which adopted the World Bank and International Monetary Fund Structural Adjustment Programmes, deregulating and privatizing most of their state-owned enterprises (Debrah, 2002).

A number of factors could determine the potential for the ‘natural resource-curse’ escape. These include the quality of governance, quality of institutions, transparency and corruption mitigation and control mechanisms. The term quality of institutions refers to the quality of country-level institutions (public sector institutions) in Ghana (Robinson et al., 2006; Kopinski et al., 2013). Kaufmann et al. (2011) define governance as the traditions, practices and national-level institutions by which a country exercises its authority. Kolstad and Wiig (2009:522) define transparency as “*public access to information, or timely and reliable economic, social and political information which is accessible to all relevant stakeholders*”. They define corruption as the abuse of public office for private gain. Corrigan (2014) explains the EITI as the Extractive Industries Transparency Initiative that aims to reduce the adverse effects of resource abundance through the promotion of transparency and accountability of resource revenues.

### 3.2. Sampling strategy

The total sample for the study was 222, comprising 18 key stakeholder units managing the petroleum fund, the legislature and public interest representatives (see table 1). Stratified simple random sampling is adopted since that provides equal opportunity for every member from each stratum to be selected. The following econometric specification was utilised:

$$Y_{it} = \beta_0 + \beta_1 QI + \beta_2 QG + \beta_3 GE + \beta_4 ACM + \beta_5 APRM + \beta_6 NRSA + \beta_7 EITIM + \varepsilon$$

The independent variables include quality institutions (QI), quality governance (QG), government effectiveness (GE), accountability and corruption control mechanisms (ACM), accounting and petroleum revenue management (APRM), natural resources sustainability and accounting (NRSA) and EITI membership (EITIM). The dependent variable is “*Ghana escaping*”



*the natural resource curse*”. In the literature review section, the paper argues that these factors contribute to the *‘natural resource-curse escape’*. The sensitivity of each of these variables is examined and consideration is given to the extent to which they individually and collectively impact upon Ghana’s potential to escape the *‘natural resource-curse’*. This can then be more widely applied to understand how the petroleum sector can sustain Ghana’s socio-economic and political stability, growth and development.

### ***3.3 Measurement scales***

The constructs (items) selected for this research were utilised in line with the procedures suggested by other researchers cited in the energy literature (Arezeki and Bruckner, 2011; Belal et al., 2013; Sargiacomo et al., 2015; Kasekende et al., 2016). A total of seven measures were used, namely: (1) the quality of institutions; (2) quality of governance; (3) government effectiveness; (4) accountability and corruption control mechanisms; (5) accounting and petroleum revenue management; (6) natural resources sustainability and accounting; and (7) EITI membership.

The first three measures, including quality of institutions, quality of governance and government effectiveness are presented in hypothesis 1. Table 1 sets out a list of the stakeholders and public-sector institutions involved in this research. Quality of governance includes the role of country-level regulatory bodies in oil and gas revenue management (Gyimah-Boadi and Prempeh, 2012; Gyampo et al., 2016; Ullah et al., 2018). In the context of Ghana, these regulatory bodies include the Public Interest and Accountability Committee (PIAC), the Auditor General, and the Parliamentary Select Committee (PSC). Government effectiveness includes the role of the

political government, and judiciary in enhancing accountability, and transparency (Sachs and Warner, 2001; Mehlum et al., 2006). Accountability and corruption control mechanisms are those national-level initiatives undertaken by the government in mitigating corruption. This also includes appropriate standards for reporting and disclosure of revenue management, including the environmental aspects of petroleum revenue management (Buccina et al., 2013). Accounting and petroleum revenue management takes into account the role of management accounting, accounting information quality, internal control and monitoring systems in enhancing transparency, leading to effective natural resources management (Neu et al., 2015; Sikka and Lehman, 2015). Natural resources sustainability and accounting (NRSA) looks at the role of environmental accounting, and sustainability accounting practices that enhance sustainable development (Bartelmus, 2007, Gray, 2010). EITIM measures whether membership of the EITI helps a member country in escaping its ‘natural resources-curse’ (Corrigan, 2014). The standards developed by the EITI aim to address the key governance issues of the oil, gas and mining sectors in developing countries.

Table 1 presents the characteristics of the sample.

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### 3. Findings

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The descriptive statistics in Table 2 report the mean, minimum, maximum and standard deviations for all variables used in the analysis. For a total of 222 responses, the mean values for the set variables are as follows: quality of institutions (QI=2.505), quality governance (QG=3.3348), government effectiveness (GE=2.9310), accountability and corruption control mechanisms (ACM=4.7793), accounting and petroleum revenue management (APRM=2.9560), natural resources sustainability and accounting (NRSA=2.9883), EITI membership (EITIM=3.3153). The Likert scale was adopted, and each survey question was rated on a scale of 1 to 5. Respondents were asked how country-level institutional factors help Ghana in escaping a natural resource curse. The lowest scale of 1 indicates that the respondent does not agree with the role of institutional factors in escaping the resource curse and a score of 5 represents full agreement.

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**Insert table 3 about here**  
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The findings in the context of each explanatory variable are set out in the following sections. The regression results in Table 3 demonstrate that quality institutions (QI) quality governance (QG) and government effectiveness (GE) are the significant determinants for Ghana in '*escaping the natural resource-curse*'. These findings are consistent with our hypothesis and the results for QI

and QG are strongly significant at 1 % level. Cabrales and Hauk's (2011) argue that resource discoveries have revolutionary potentials in states with weak institutions. They further argue that human capital adversely depends on natural resources. Additionally, Bhattacharyya and Hodler (2010) report a positive association between resource rent, corruption and democratic institutions. According to the results, out of 222 respondents, a total of 208 or 94% of stakeholders agreed, whilst only 11 stakeholders, constituting 5%, held different views with regard to the statement, *“quality of institutions have a positive impact on Ghana’s resource-curse escape”*. This supports the findings previously reported by Bhattacharyya and Hodler (2010). Therefore, the assumption that quality institutions stimulate growth and development in resource-rich developing economies is justified and upheld.

Prior research shows that quality governance could be measured by better information flows which enhances transparency (Islam, 2003, 2006). Additionally, Nofianti and Suseno (2014) found that the competence of local government systems in facilitating internal controls significantly affected accountability performance of local government. Furthermore, Moore (2004) concludes that governance quality in developing nations may succeed if they focus more on local taxpayers in managing their financial resources. Results from this study reveal that out of the 222 responses, 215 respondents, representing 97% of the sample, strongly agreed that quality governance can influence Ghana’s ‘resource curse-escape’, with only 6 respondents, or around 3% holding an opposing viewpoint. Critically, success for Ghana with regard to transparency and accountability, corruption mitigation, quality institutions and quality governance is dependent upon political will and a commitment to deliver quality governance. It appears that in anticipation of being re-elected into power, and considering also the reasonably peaceful and democratic

environment at the present time, Ghana's government maintains at least an average level of transparency, accountability and quality governance.

Consistent with the expectations set out in hypothesis 2, accountability and corruption control mechanisms (ACM) significantly impact upon the potential for Ghana in escaping the natural resources curse. Prior research suggests that any development-oriented initiative that does not include and drive democratic policies to bring sustainable change, might fail to achieve political stability, growth and development (Aslaksen, 2010; Barro, 1999; Block, 2002; Collier and Hoeffler, 2009; Lehman and Thorne, 2015; Muller, 1995; Tsui, 2011). This study shows that, aside from 8 respondents comprising just 4% of the respondents who have varied opinions on the hypothesis that "*corruption mitigation can help Ghana's resource curse escape*", the remaining 213 respondents, representing 96% of the sample, agreed that corruption mitigation is an important determinant of 'natural resource-curse' escape. This supports the argument that Ghana's high corruption level should be mitigated in order to ensure its success in escaping the resource abundance curse (Gyampo, 2010, 2016; Gyimah-Boadi and Prempeh, 2012). This study confirms that the contribution of corruption mitigation to the resource-curse escape cannot be underestimated. The paper did not find any significant role with regard to accounting and petroleum revenue management (APRM) in escaping the natural resource curse escape. The results also show that natural resource sustainability and accounting (NRSA) is an important determinant for escaping the 'natural resource-curse'. The significantly positive relationship between NRSA and the dependent variable confirms hypothesis 4. Jones (2010) and Noël et al. (2010) agree that quality environmental accounting practices enhance accountability and

transparency in the energy sector. The finding thus confirms that effective environmental accounting could contribute positively to socio-economic decision making (Cairns, 2006).

Finally, the study could not find any significance of EITI membership in escaping the natural resource-curse, and hence the work could not find any evidence in support of hypothesis 5. According to the survey results, out of 222 responses, only 46 respondents, representing 21%, agreed that Ghana's EITI membership can help it escape the 'natural resource-curse' phenomenon. The remaining 175 respondents, representing 79%, maintained the view that Ghana's EITI membership could not help in escaping the 'natural resource-curse'. The probable reasons for these findings might be that since Ghana's EITI membership is recent, it might not have had significant time to comply and effectively implement all the necessary EITI policies and principles. This particular finding suggests that Ghana's EITI membership cannot contribute significantly to Ghana's current state of transparency and accountability in the energy sector, and therefore Ghana's 'natural resource-curse' escape.

## **5. Discussion and conclusion**

The study closely examined the variables affecting Ghana's potential in escaping the 'natural resource-curse' as well as considering the means and the extent to which Ghana's oil discovery could be a blessing instead of a curse. The findings of this research could be applied more broadly to other resource-rich developing countries in order to help them avoid the much-debated resource-curse. The study finds that quality governance, quality of institutions, government effectiveness, accountability and corruption control mechanisms, as well as natural resources sustainability accounting are the key determinants in escaping the 'natural resource-curse'. The

study finds partial evidence in support of the contention that EITI membership could help in escaping the 'natural resource-curse' in the context of a developing country. The paper argues that a country's oil discovery is an economic advantage over those countries with limited natural resources. In fact, oil discovery could be a blessing or a curse depending on how revenues relating to these resources are generated, managed, and reported. The findings suggest that the role of country-level institutional factors (quality institutions and quality governance) could play a significant role in ensuring transparency, accountability and sustainability in generating and managing revenues from natural resources. The findings of this study can be generalised to similar oil-rich developing countries suffering from weak institutional arrangements and legal systems.

In terms of policy implications, our research provides insights for policy makers to embark on strategic institutional reforms and develop regulations for efficient and sustainable oil extraction and natural resources utilisation. Policy makers may introduce strategic accountability and anti-corruption approaches in protecting its natural resources. These policies may focus on transparency in issuing licenses and contracts to mining companies, their subsidiaries and affiliates, in order to mitigate corruption within the petroleum sector. A clear policy on regular (periodic) public disclosure of oil contracts, revenues and expenditures may increase investment and improve public confidence. In addition, an autonomous public-sector accountability board, which is free from any political interference, may also help in promoting accountability and transparency in the energy sector.

The study also suggests that strengthening the legal and judicial system may further increase accountability in the energy sector. A stronger legal and political system can facilitate speedy socio-economic growth and development, which may help Ghana's 'natural resource-curse' escape. The paper also suggests that international regulatory and funding bodies (e.g., EITI, IMF, and African Development Bank) could play a leading role in ensuring greater transparency and demonstrable policy actions.

The study's findings are subject to limitations. Firstly, the study could have considered the petroleum production levels, world market prices, revenues and expenditures, including from the time Ghana began oil extraction. However, carrying out such macro-level analysis is beyond the scope of our investigation at this time. In terms of future research, a cross-country study could be carried out for Sub-Saharan African countries in order to understand how cross-country differences in institutional quality may help mitigate the 'natural resource-curse'. There is also potential for future studies to explore the relationship between country-level factors (GDP, rule of law, judicial effectiveness, voice and accountability, regulatory quality, control of corruption, political stability, investor protection, creditor rights) and their impact on oil exploration and petroleum revenue management within an international context.



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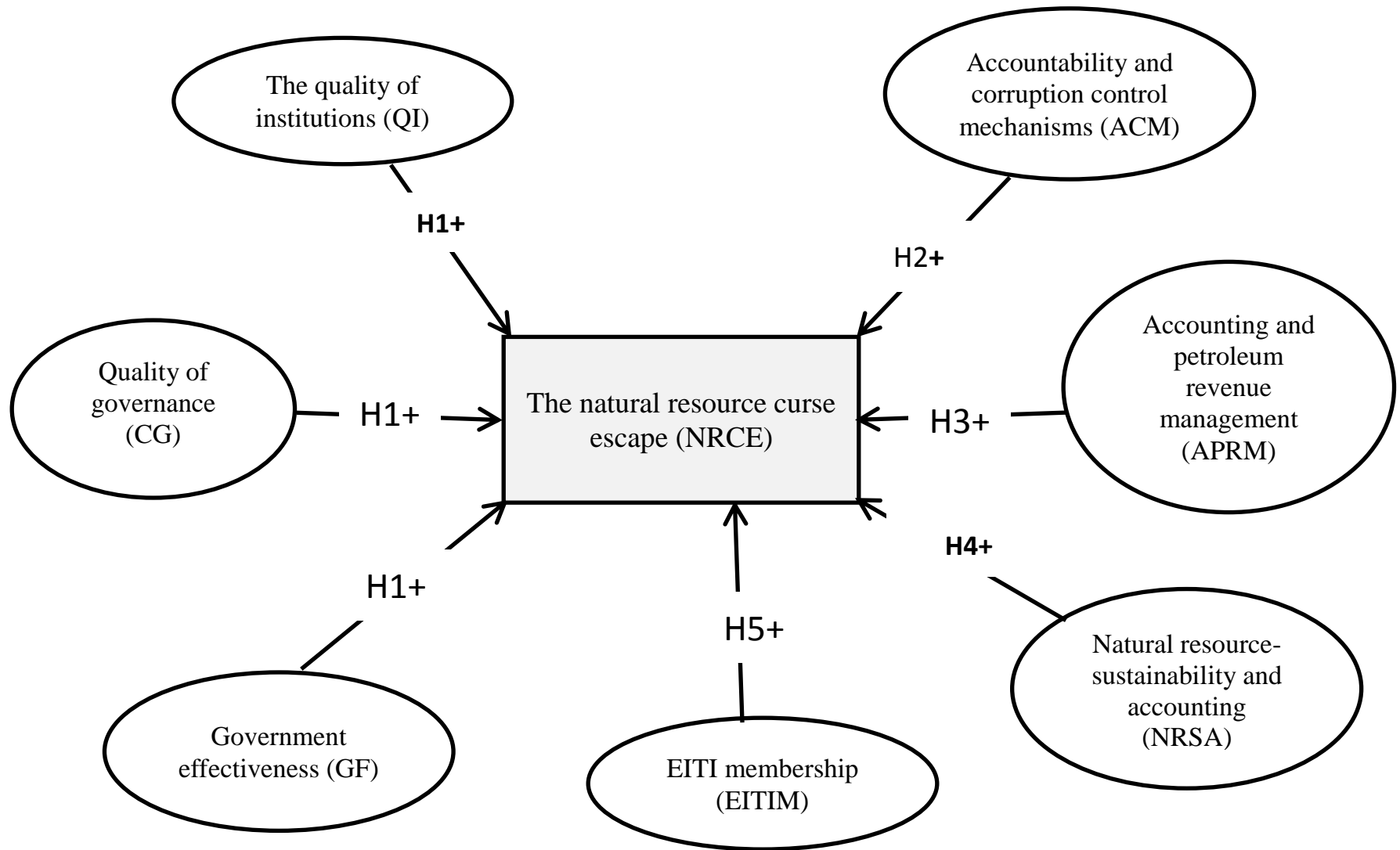
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**Figure 1.**  
Conceptual Framework





**Table 1**  
Sample Characteristics

Stakeholders	Population	Responses	%
<b>A. Ghana's Oil and Gas Revenue Governing Board</b>	<b>48</b>	<b>41</b>	<b>85</b>
Ministry of Finance and Economic Planning (MoFEP)	5	5	100
Bank of Ghana (BOG)	3	3	100
Investment Advisory Committee (IAC)	6	4	67
Petroleum and Energy Ministry	2	2	100
Ghana National Petroleum Corporation (GNPC)	5	5	100
Public Interest and Accountability Committee (PIAC)	13	11	85
Parliamentary Select Committee (PSC)	5	5	100
Controller and Accountant General Department (CAGD)	3	2	67
Auditor General (AG)	3	2	67
Ghana Revenue Authority (GRA)	3	2	67
<b>Sub-total</b>	<b>48</b>	<b>41</b>	<b>85</b>
<b>B. Other Stakeholders</b>			
Ghana National Petroleum Corporation Staff	80	45	56
Ministry of Finance Staff	50	30	60
Petroleum and Energy Ministry (PEM) Staff	35	20	57
Public Interest Accountability Committee (PIAC) Staff	15	9	60
Past Governing Members	37	13	35
Parliamentarians	110	52	47
Researchers	20	9	45
Policy Analysts	5	3	60

**Table 2**  
Descriptive Statistics

	Minimum	Maximum	Mean	Std. Deviation
QI	1.50	3.75	2.5056	0.49628
QG	2.22	4.33	3.3348	0.43600
GE	1.83	4.00	2.9310	0.61931
ACM	3.00	5.00	4.7793	0.53891
APRM	2.28	4.24	2.9560	0.50367
NRSA	2.00	4.20	2.9883	0.48994
EITIM	1.00	5.00	3.3153	1.07191
DV	1.67	5.00	3.2508	0.68283
N	222.00			

Variables keys: quality of institutions (QI), Quality of governance (CG), Government effectiveness (GE), Accountability and corruption control mechanisms (ACM), Accounting and petroleum revenue management (APRM), Natural resources sustainability and accounting (NRSA), EITI membership (EITIM). Dependent variable, the natural resource curse is denoted by DV.

**Table 3**

The impact of country-level institutional factor in escaping the natural resource curse

Variables	Beta	t-values	Sig
QI	0.146	2.041	0.042
QG	0.172	3.040	0.003
GE	0.148	1.801	0.073
ACM	0.134	2.380	0.018
APRM	0.057	0.747	0.456
NRSA	0.274	3.576	0.000
EITIM	0.012	0.215	0.830
R Square	0.331		
Adjusted R Square	0.309		
N	222		

Variables keys: Quality of institutions (QI), Quality of governance (QG), Government effectiveness (GE), Accountability and corruption control mechanisms (ACM), Accounting and petroleum revenue management (APRM), Natural resources sustainability and accounting (NRSA), EITI membership (EITIM).