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Impact of Oil and Gas on Governance of Emerging Producers

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Abstract. This article provides an integrative literature review of the impacts of oil and natural gas on governance. It focuses on emerging oil producing countries with regard to the current challenges of conflict, corruption, and civil war which affect the livelihoods of their citizens. The purpose of this study was to assess selected published literature on the impacts of oil and natural gas on governance. The concept of oil and gas resource governance revolves around the rentier effect, repression effect, modernisation, lootability and grievance theories.

The steps of problem identification, literature search, data evaluation and data analysis were formulated in studies encompassed in the sample and presentation which followed those described by Torraco. The literature review involved Research Gate and Semantic Scholar. A total of 29 studies were published between 2011 and 2021. These were gathered, organized, based on comparisons and differences, and met selected inclusion criteria.

The findings from the studies extracted showed that the literature supports the claims that oil and gas resources have negative impacts on the governance of emerging producer countries, hinder good governance, and enhance authoritarianism. This integrative literature review proves that traditional oil and gas producing countries have challenges with abundant oil and gas revenue and governance; hence, they emulate oil governance in countries like Norway. Therefore, oil governance researchers should consider future research models that separate oil and gas resource revenue in emerging oil and gas producer countries from the involvement of ruling political elites.

Keywords: Civil Society Effect, Grievance Theory, Modernisation Effect, Resource Curse, Repression Effect, Rentier Effect, Taxation

Introduction

The presence of oil and natural gas (O&G) impacts good governance in emerging producer countries. Past literature has shown that a nation's abundance of natural resources is often related to pervasive and adverse outcomes, such as heightened corruption, authoritarian rule and civil war (Ross, 2015). The negative effects of natural resources on governance are usually branded as a political resource curse. Ross and Andersen (2012) advise that the collection of oil revenues in mostly poor nations is likely to create civil conflict and diminish democracy. This link between natural resources wealth and political violence has been confirmed by many researchers (Towah, 2019). Yet a dichotomy exists. Oil is found in abundance in the world's most democratic and well-governed nations (e.g., Canada and Norway), and in some of the most autocratic and corrupt countries (e.g., Nigeria). It has been called both *the devil's excrement* and *black gold* (Brooks & Kurtz, 2012).

The last decade has seen momentous gas and oil discoveries; between 1998 and 2006, 19 new countries, typically low and middle-income, have become O&G exporters (Ross & Andersen, 2012). Meanwhile, other causal mechanisms to bad governance have been proposed. These include adverse outcomes that can be likened to features of oil revenue, non-tax based, secretive, and unstable governments that limit the ability of regimes to spend revenue productively (Sackeyfio, 2013). Increased coups d'états attempts, higher energy prices, conflicts, governmental corruption, grievances, and the civil unrest that accompany oil discoveries in some African countries are a concern. Experiences display a mixed record;

commonly, emerging oil producers do not emulate the successes of industrialised countries such as like Australia and Canada (Omeje, 2021).

Many of the world's poorest and most troubled countries with significant quantities of O&G resources have evolved into *rentier states* because a sizeable portion of their wealth comes from oil exports. The proceeds are distributed internally and used to consolidate political, economic, and social powers by controlling the government and its bureaucracy. Studies have shown that O&G resource wealth tends to reduce economic growth and increase the likelihood of civil war.

This article compiles and analyses the literature on the subject regarding the impact of oil and natural gas on emerging producers, the correlation between oil and governance quality, and the relationship between oil and economic development. O&G resources are both a curse and blessing. This article details the pragmatic impacts that resource endowments have on hindering or enhancing the quality of governance in emerging economies. The availability of O&G resources can be linked to causal mechanisms: 1) the *rentier effect*, through which governments use low tax rates to dampen pressures for democracy; 2) a *repression effect*, wherein governments ramp up their internal armed forces to dampen democratic pressures; and 3) the *modernization effect*, in which those employed in industrial and service sectors are less likely to advocate for democracy.

This review adds to the ongoing discourse about the political effects of oil and natural gas and the quality of government. The policy implications on how to overcome the challenges of institutional improvement in developing countries rich in O&G, when this wealth often gives rise to bad institutions, are considered. Surprisingly, the rents generated from O&G resources seem to decline over time despite rising market prices. These findings have implications for the fates of O&G resource-rich nations and emerging producing countries.

Modernization theory has been based on the research of scholars who proposed that democratization occurs when a society is transformed by higher levels of education, urban sprawl, the introduction of modern communications, and greater occupational specialization (Zhai, 2016). This theory suggests that democracy results from a series of social and cultural developments, such as occupational specialization, urbanization, and greater educational levels—all caused by economic development.

Background

Many oil and gas producing regions have been beleaguered by political violence and devastating civil wars. Past literature has focused on the politics of oil, displaying that greater oil resources are statistically related with corruption, more civil conflicts, and less democracy (Ross, 2015). However, there is little systematic knowledge on the relationships between the dimensions of political life and natural resource wealth, such as non-electoral political participation. The impact of resource wealth on citizen mobilisations and diverse types of natural resources (e.g., minerals and oil) lead to diverse mobilisation outcomes. The revenue collected from natural resource exports has long been related with political dormancy; resource revenues enable politicians to finance government activity through taxation and obtain citizen support by purchasing public goods (Abdel-Fadil, 2015). Revenues from resources can limit citizen motivation to demand representation, mobilise, or hold their political leaders accountable. Conservative wisdom that relates resource revenues with political dormancy incentivizes rulers to invest heavily in government preserving strategies. Meanwhile, the country's citizens become passive beneficiaries of the revenues.

Mid-20th century optimism was substituted by pessimism that drew from the inexorable afflictions of resource rich countries in West Africa and Middle East. In these regions decades of oil revenue collections failed to inspire effective growth, state-building, or continued improvements in other economic sectors. In the political sphere, clientelism, corruption, autocratic rule, and weak governmental institutions were commonplace. Natural resource abundance presents a paradox for scholarly study: *what would appear to be a clear-cut blessing for political and economic growth instead becomes a curse that renders such goals to be unachievable*. Recently the resource curse argument has begun to yield. Given the increasing number of countries in which natural resource wealth has nurtured democracy and promoted economic growth (e.g., Canada, Australia, Norway and Botswana), researchers theorised that natural resource endowments are a conditional curse (Brooks & Kurtz, 2012).

Commodities such as oil and natural gas are believed to shape the internal political equilibrium of countries. They have long-lasting consequences for overvalued national currencies, rent-seeking behaviours and weak institutions. They offer incentives for elites to compromise policy-making processes and block governmental measures contrary to their personal interests.

While conventional wisdom suggests that oil resource development adds value to an oil-rich country's economy, this is often not the case. The main impacts of such developments include creating cashflows for the host government through tax and royalties, plus income for people and enterprises through the numerous financial transactions that occur during resource development. This is particularly true for countries such as Norway, which avoided becoming economically and politically dependent on oil revenues by excluding oil wealth from the political system which helped its industries develop gradually.

A growing body of literature has advanced our knowledge of the relationships between the potential for conflict and natural resource abundance. Several authors claim that primary commodities increase the risk of initiating civil war by providing opportunities to finance large-scale violence and motivating the opportunistic behaviour of rebel groups (Stevens, Lahn, & Kooroshy, 2015). Others argue that oil resources encourage predatory rent-seeking behaviour, lowering institutional quality and governmental counter-insurgency capabilities. The relationships among economic growth, development, and resource wealth, have been discussed by political scientists and economists (Waldner & Smith, 2014).

Marien Ngouabi's efforts to solidify his grip over the Republic of Congo were aided by the discovery of offshore oil in 1969 and the country’s resulting economic growth. Studies of petro-politics in Gabon and Cameroon offer similar results. Recent research using large cross-national data sets discovered a robust and inverse statistical relationship between oil income and democracy. Countries with executive authority over resource rent distribution have less democratic political regimes.

The significance of natural resource wealth in political evolution and democratization cannot be overstated; shocks to resource richness have been used to explain regime shifts. In other studies, resource income is a key factor in determining the political economy and institutional development.

Oil and natural gas represent a source of funding for development and economic diversification in emerging economies. Reforming this sector is important to secure broader reforms that lead to more open societies and regional economies that deliver positive development outcomes for their citizens. Successful reforms necessitate active, educated citizens, and media scrutiny which are often lacking.

O&G resources have a bearing on the operation of many oil-rich countries. Most societies benefit from oil revenues if the governance of these resources follow the tenets of good democratic practise and governance. This is because most of the revenues that sustain authoritarian rule will be spent on enhancing the decurion system, healthcare, water and sanitation services.

The primary goal of this integrative literature review is to explore the impacts of oil and natural gas on emerging economies. A key objective is to ultimately formulate a new model for the governance of O&G resources in emerging economies that helps policy makers of countries endowed with O&G resources avoid the pitfalls of the oil resource curse. Unfortunately, opportunities identified in the literature are broad and fail to offer a specific prescription for success.

Conceptual Framework

This integrative literature review is framed by three key concepts that focus on the impacts that oil and natural gas resources have on the governance of emerging producers. Outcomes include the type of government regime, quality of governance, and capability of government to deliver sustainable economic growth. In discussing these implications, the focus is on the theories of oil and underdevelopment, oil and corruption, and oil and conflict. These three categories of theories are next discussed.

Theories of Oil and Development

There are numerous oil and development theories which have been considered by modern researchers. A few of the most common are identified.

Dependency and Underdevelopment Theory

This is an approach to understanding economic underdevelopment that emphasizes the putative constraints that the global political and economic order imposes. The dependency and underdevelopment theory criticizes the rise of a capitalist world system conceptualized as a developed *core* and an underdeveloped *periphery*. Historically, the core dominated the periphery through exploration, conquest and colonialism. This model suggests that after decolonization, historically built economic, financial, scientific, military and cultural dependencies on core countries continued, resulting in underdevelopment. According to dependence theory, underdevelopment mostly results from the peripheral position of affected countries on the global economy. On the international market, impoverished countries offer raw materials and labour. Resources are marketed to industrialized economies with the infrastructure to process them into finished products. Underdeveloped countries pay higher costs for finished products, draining capital that could otherwise be used to upscale their own production potential; consequently, a cycle exists that perpetuates the economic divide between the richer core and the poorer periphery (Barma et al., 2012).

Rentier Effect

When a country regularly receives a substantial amount of external rent a *rentier effect* is created. The rentier state theory is concerned with the pattern of development and nature of states in economies driven by external rent, especially from oil revenue. Oil rent allows the financial autonomy of the state. As a result, the government becomes autonomous from domestic taxpayers.

The rentier state theory contends that oil rents reduce the government's need to levy domestic taxes, making leaders less answerable to citizens and more susceptible to corruption, rent seeking, and patronage politics. Since oil rents are paid directly to the government, there is a strong temptation for the government’s bureaucracy to become a rentier class with its own independent source of income. Concentrating on managing its wealth from oil, the government becomes an allocation state.

Modernization Effect

Oil influences governance through a *modernization effect*, as improving education levels create a more fluent public that is better equipped to communicate and organize. Increasing occupational specialization first moves the workforce into the subordinate and tertiary sectors. These changes produce a more independent workforce, adapted to independent thinking, and having specific skills that augment negotiating power against elites.

The modernization argument is based on the research of scholars who proposed that democratization occurs when a society is transformed by higher levels of education, urban sprawl, modern communications, and greater occupational specialization (Chatagnier & Castelli, 2019). If oil wealth stifles these social developments, it likely stifles the democratic process.

Taxation Effect

There is ample evidence that that countries with more oil rents are less reliant on taxes. The *taxation effect* suggests that when governments derive sufficient revenues from oil, they tax their populations less heavily. In turn, the population is less likely to demand accountability and representation in the government. For example, the oil-rich governments in Algeria, Oman, Kuwait and Iran, obtain 10% or less of their revenue from taxing products and services. The oil-poor governments in Jordan, Lebanon, and Tunisia, get 25% of their revenue from these sources.

Civil Society Effect

The production of oil and natural gas may also weaken civil society. Since cross-national data on the strength of the civil society groups is lacking, this argument must remain speculative. The *civil society effect* occurs when rulers use their oil wealth to stifle or suppress independent organizations that might otherwise favour improved governance. Scholars have suggested that good governance emerges through the efforts of social institutions that are state independent. Some researchers emphasize civil society organizations (e.g., bowling leagues or choral societies) and others focus on the roles of independent economic classes whose interests diverge from their government and wish to constrain governmental powers (Anheier, Kaldor, & Glasius, 2012). For example, some scholars argue that the formation of a bourgeoisie that was independent of the monarchy resulted in the emergence of democracy in England and France.

Incumbency

Oil wealth seems to help individual authoritarian leaders remain in power, thus enhancing incumbency. Several researchers argue that oil inhibits all transitions, both from authoritarianism to democracy, and democracy to authoritarianism. This implies that the 'oil hinders democracy' claim might be misleading; its actual effect is to stabilize regimes of all types. This theory agrees with the assertion that oil wealth inhibits good governance but not with the assertion that it stabilizes regimes of all types.

By distorting property rights regimes, the power of interest groups, and the role of the state in the market, oil wealth creates incentives that influence the organisation of political and economic life, shaping government preferences with respect to public policies. When revenues are stable, oil wealth may extend periods of stability and strengthen oil-based, rent-seeking regimes. Despite the intrinsic fragility of rentier state institutions, the capacity of governments to placate major social groups using oil revenues extends their power and life. The vesting of groups in the regime's continuation provides a social base for rentier regime bargaining while the resources are available. According to this reasoning, regimes that are oil-dependent exhibit greater levels of stability during pre-boom eras which augments their incumbency.

Theory of Oil and Corruption

This form of political corruption is related to financial incentives as oil revenue allocation formulas stimulate a rentier approach to politics. A common view is that the point of departure for an antidote to corruption is transparency and good governance in the oil sector.

Petrostates are viewed as especially corrupt. According to the World Bank, the spending and contract allocation associated with the oil business engenders corruption in countries. In addition, to low scores on the United Nations Development Programme's Human

Development Index, countries dependant on O&G revenues exhibit higher levels of corruption.

Theories of Oil and Conflict

In developing countries, evidence shows that the discovery and exploration of high valued natural resources have plunged oil-producing countries into anarchy and conflict. There are several theories that explain the strong correlation between oil dependency and various kinds of violence. A few are next considered.

Grievance Theory

This theory suggests that segments of the population, or regions that carry the ecological burden of production, might feel deprived of the benefits of resource-related income and become reactionary. This may take the form of indigenisation of rentier space. The *Nigerianisation* of oil in the 1960s was a nationalisation discourse against foreign oil corporations. However, for the indigenous peoples of the Niger Delta, it was a disguise for internal colonialism. The grievances of the Sudanese in the country's marginalised areas intensified with the development of so-called 'Sudanese oil' and exacerbation of political mobilisations (Okoli, 2019).

Geographical Location

This theory suggests geographical differences in dispersion result in different violent outcomes. Since oil is not a geographically diffuse resource, in most cases it leads to coups or secessions. For example, the Niger Delta basin fuelled rebellions by the Igbo (in the 1960s), the Ogoni (l990s), and the Ijaw (2000s) (Nwaneri, Uwakwe, & Audu-Bako, 2019).

Lootability—Obstructability Theory

This theory postulates that oil is *obstructable*, but not *lootable* like other commodities. It funds governments not rebels. Rebels can attack an oil pipeline, but only governments can obtain the rents. This means that rebels cannot support themselves with oil revenues (loot) but can only extort funding by threatening to disrupt (obstruct) oil production (Ocakli & Scotch, 2017). Obstruction efforts often have long-term consequences. In 1991 as Iraqi troops withdrew from Kuwait in the face of advancing U.S.-led international military forces. As the Iraqis were unable to continue looting Kuwaiti oil, they set over 600 oil wells on fire to disrupt regional O&G production. This created a major environmental and economic disaster in Kuwait which lasted for months afterwards.

The Repression Effect

The *repression effect* theory asserts that oil-rich dictators spend a disproportionate portion of income on the military, implying that the income from oil helps authoritarian leaders retain power by financing repression. Oil producing countries are likely to be led by dictators, and dictatorships are much more repressive than democracies.

Research Method and Design

An integrative approach was adopted for this study which assists researchers in maintaining a knowledge base on a specific subject or area of research. It proposes strategies for finding and evaluating what information is available on the considered subject. The integrative approach helps identify key issues in each field and points researchers on the best path for future research. Past research is summarized by generating overall conclusions from the evidence found in multiple studies. The integrative review of literature highlights deficiencies in current understanding and the need for additional research by methodically analysing and summarizing the literature. The approach used herein is a research and design methodology prescribed by Torraco (2005).

Table 1. Summary of integrative review process

Stages	*Problem identification*	*Literature search*	*Data evaluation*	*Data analysis*	*Results*
Description	What is the nature and extent of the impact that oil and natural gas resource endowments have on the governance of emerging economies?	*Electronic databases searched*: Semantic scholar, Research Gate, JSTOR, Academia.	Data included theoretical and empirical reports. Quality evaluation using the QualSyst tool.	Qualitative analysis to develop themes and categories.	*Quantity:* amount and perceived adequacy content and research design. Reported *Outcomes:* quality of governance, regime type and its longevity, sustainable economic development. *Limitations:* Stringent inclusion and exclusion criteria.

Problem Identification

Extensive political economy literature contends that fiscal and economic reliance on petroleum and natural gas creates and prolongs authoritarian political governments. Abdel-Fadil (2015) noted that petroleum revenue collection in Middle Eastern nations constituted an external source of rents directly seized by regimes, rendering them unaccountable. Other academics built upon earlier scholars who suggested a dictum stating, "The fact is that there is no representation without taxation… and there are no exclusions to this rule."

Sarmadi et al. (2018) commercialised this awareness: when oil revenues accrue to the state, the power of the state bureaucracy intensifies; because the need for taxation is decreased or eliminated, the need for the governing regime to implore the acquiescence of the public to taxation is reduced. The lesser the level of taxation, the less reason for the public to demand representation. It consists of two steps. First it conceptualizes the role of fiscal dependency of O&G rents in relation to three diverse dimensions of quality of regime: bureaucratic quality, low corruption, and legal impartiality. Next it finds momentous, negative effects of O&G rent dependency on the three dimensions of quality (using a sample of 139 states between 1984 to 2006). In this appraisal, the often-observed challenges for the presence of gas and oil are authoritarianism, corruption, civil wars, conflict and underdevelopment. The impacts that O&G resources have on the governance of emerging oil producing countries are a long unresolved problem. The presence of O&G resources presents numerous challenges to governance of traditional oil producers within the Organisation of Petroleum Exporting Countries and other individual producers.

Literature Search

Literature sampling is essential to enhance the rigour of integrative reviews of literature. The search covered five electronic databases: Semantic Scholar, JSTOR, Research Gate, Google Scholar, a reference scan of lists of located documents for relevant articles, plus hand searches of recent editions of significant journals. The search was restricted to English-language publications dated between 2011 and 2021. The relevant literature was also selected using eligibility criteria. For each body of work, the title and abstract were reviewed. The first criterion established was to include research studies discussing the impacts of oil and natural gas resources on the governance of emerging oil producers and economies endowed with those resources. Studies that demonstrated one or all the following attributes were included:

– Studies that provided an analytical framework for the implementation of large-scale investments in the O&G sector with a focus on the relationships among investors, the local population and the ruling elites.

- Studies that considered a diverse set of countries.
- Studies that demonstrated the effects that O&G resources have in interaction with fluctuating non-resource-specific contextual conditions, on conflict, democracy, corruption, and the functioning or integrity of several political institutions.
- Studies that discussed the relationship between the endowment of O&G resources on the political regime, quality of governance or the ability of governments to deliver on economic development and social welfare.

For this study, only peer-viewed journals were accessed to ensure quality and accuracy. An exhaustive review of literature was conducted including articles, papers, and abstracts published within the last 20 years. Case reports and unpublished research findings were used as resources to support the findings but were excluded from the data analysis, as they failed the eligibility criteria. Policy documents, best practice reports, and grey literature were also excluded.

An independent scrutiny of the abstracts and title of each research paper was conducted. Papers that met the eligibility criteria were read and checked against the eligibility criteria. Decisions were reviewed; consensus on final eligibility criteria was reached and added to the final selection of articles to be considered for inclusion in the review. These articles came from the United Kingdom, United States, Canada, Australia, South America, Europe and Southeast Asia. Table 2 contains additional information about the literature compiled.

Data Evaluation

Dataset quality is critical when conducting an integrative review. It is recommended that when papers use similar research designs, a simple grading system be utilized for comparative analysis among studies. Because this review included publications using varied research methods, the literature was coded on a two-point scale using two criteria comprising of theoretical or methodological rigour and data relevance (high or low). As a result, the quality of selected documents was evaluated independently, decisions discussed, and consensus reached on the final selection of literature to be included. While all studies are culturally distinct, the findings are useful because they are consistent with the experiences of educators in other nations encountered during the research process. Data evaluation in research reviews require that data from primary sources be ordered, coded, categorised, and summarised into a unified and integrated conclusion about the research problem (Torraco, 2005). A thorough and unbiased interpretation of primary sources along with the innovative synthesis of the evidence is the goal of the data evaluation stage. The data evaluation process of this review included using a constant comparison method as recommended by Torraco (2005). The studies were evaluated using the following strategies: overall quality, data reduction, identification of patterns, themes, variations and relationships. The data was analysed further and synthesized using data comparison, data display, verification, and by drawing conclusions.

Data Analysis

Data analysis approaches in integrative reviews are underdeveloped (Torraco, 2005). The qualitative content analysis method was the method of choice for this study. This entailed reading and rereading the articles and composing a brief synopsis (see Table 2). The analysis developed a standard, reproducible appraisal tool. The QualSyst tool was chosen because it could assess the quality of diverse study designs while assisting in the exploration of variation across studies and the synthesis and interpretation of research findings. The scores of each study were then tabulated.

Results

Three broad themes emerged from the analysis regarding the impacts that oil and natural gas resources have on the governance of emerging economies: the outcomes focused on the type of government regime, the quality of governance, and the ability of governments to deliver on sustainable economic growth. Reviewed studies are detailed in Table 2.

Table 2. Overview of the reviewed studies

Reference	*Sample size*	*Research design/data collection*	*Aim*	*Findings*	*Limitations*
Albinali, A. (2017).	44 oil producing countries	Cross-sectional data analysis.	Examines the relationship between oil sector ownership structure and elites' political survival.	The analysis finds that a smaller winning coalition strongly predicts state control over the oil sector.	Inability to solidify sample size.
Ali, I., and Harvie, C. (2013).	Libya	Deterministic, dynamic and macroeconomic.	Analyse the effects Libyan oil production to levels that existed prior to the revolution.	Model simulation results indicate that additional oil revenue brings stimulating policy measures.	Data collection method not specific.
Anshasy, A. (2012).	15 oil exporting countries (1970 to 2007)	Cross-sectional data analysis.	Examines the nature of fiscal policy to the contribution of economic growth in countries.	Oil wealth demobilizes civil society.	Inability to solidify sample size.
Aslaksen, S. (2012).	156 countries (1972 to 2002)	Cross-sectional data analysis.	Analyses the impacts of natural resource abundance on selected governance indicators.	Exports of natural resources have led to an increase in corruption.	Inability to solidify sample size.
Brooks, S. M. and Kurtz, M. (2016).	Cross-sectional data analysis (1960-2009)	Cross-sectional data analysis.	Examines the potential endogeneity of oil wealth to investments in human capital and industrial development.	Negative associations oil and democracy hold for alternative measures of oil abundance and democracy.	Inability to solidify sample size.
Frynas, J. G. and Wood, G. (2001).	Angola	Cross-sectional data analysis.	Investigates the impact of oil on the war in Angola.	Demonstrates that mineral wealth has financed Angola's war and intimately shaped the contours of the conflict.	Data collection method not specific.

Gerring, J., Thacker, S. and Alfaro, R. (2012).	Chile	Cross-sectional data analysis.	Develops a series of causal pathways through which democracy might improve social welfare.	Best way to think about the relationship between democracy and development is as a time dependent, historical phenomenon.	Data collection method not specific.
Haber, S. and Menaldo, V. (2011).	Cross-sectional data analysis (1970-2000)	Cross-sectional data analysis.	Examines the correlation between oil resources and authoritarianism.	Resource dependence is not associated with the undermining of democracy.	Inability to solidify sample size.
Hammond, J. (2011).	Angola and Venezuela	Cross-sectional data analysis.	Theory of the resource curse, poor countries' large endowments of natural resources, especially oil, often have no sustainable economic growth.	Sound economic management is not sufficient to overcome the resource curse; a political and social revolution is required.	Data collection method not specific.
Kennedy, R. and Tiede, L. (2013).	Global	Utilizing a unique multilevel version of extreme bounds analysis.	Prove that oil resources do not lead to inferior quality institutions and governance.	Oil has a net positive impact on governance.	Inability to specify sample size.
Nour, S. (2011).	Sudan	Comprehensive analysis using the most recent secondary data.	Assesses the effect of oil on economic development in Sudan.	Dependence on oil may spark other problems as it is an exhaustible resource. produce uncertainty in domestic growth.	Inability to solidify sample size.
Quixina, Y. and Almeida, A. (2014).	Angola	Granger causality among three variables– oil revenues, non-oil GDP and financial development.	Analyses the relationship between financial development and economic growth in Angola.	Results show that the oil sector has been the engine of Angolan economic growth.	Inability to solidify sample size.
Ross, M. (2015).	Global	Cross sectional data analysis.	Political resource curse, the claim that natural resource wealth tends to adversely affect a country's governance.	Authoritarian regimes more durable, increase certain types of corruption, trigger violent conflict in low- and middle-income countries.	Inability to specify sample size.
Ross, M. and Andersen,	Africa	Pooled cross-sectional and time-series	Effect of oil wealth on democracy in	Find that oil wealth is statistically associated with a	Inability to solidify sample

J. (2012).		setting.	Africa from 1955 to 2008.	lower likelihood of democratization.	size.
Smith, B. (2017).	Global (1960-2009).	Cross-national data	Explore the effects of oil wealth on political stability.	The stabilizing effects of oil income are significant but smaller than rent leverage.	Inability to specify sample size.
Wegenast, T. (2016).	Covering 40 countries (1989-2010)	Regression analyses employing logit models.	Gather evidence on the effects of the resource-ownership structure on internal violence.	State-controlled hydrocarbon production might entail peace-buying mechanisms such as specific clientelistic practices.	Inability to solidify sample size.

Findings

The results of this integrative literature review show that:

- Oil's role is properly accounted for and appears to have no effect on regime type.
- Two of the three casual mechanisms proposed by Ross have little support (Stevens, Lahn, & Kooroshy, 2015);
- Alternative casual mechanisms are unpersuasive as testing is often hampered by a lack of data.
- Oil wealth hinders effective governance transitions in authoritarian regimes
- Oil wealth extends the tenure of authoritarian rulers, albeit this effect is fragile.
- Oil has no overall effect on the survival of democracies but may weakly accelerate democratic collapse in low-income countries.

Literature Review on Oil and Quality of Governance

The findings on how oil and natural gas resources affect governance quality in nations with oil resources were discussed in the literature (N=4). The review focused on developing economies. Albinali (2017) examined the validity of the claim that oil hinders democracy. His work indicated four findings. First, the assertion that oil impedes democracy was found to be statistically robust and valid; in other words, oil does hurt democracy. Furthermore, oil affects democracy more in poor countries than rich ones; a given increase in oil exports has caused more harm in poor countries than rich ones. According to Ross (2015), oil impedes democracy even when exports are small, particularly in poor countries. Secondly, the negative impacts of oil are not limited to the countries in the Middle East. Oil wealth has made democratization more difficult in Nigeria, Indonesia and Malaysia. It may have the same effects in Central Asia's oil-rich republics. While the major oil exporters are concentrated in the Middle East, other major oil exporters are located in Africa (including Angola), Asia, and the Americas. The third finding is that casual mechanisms that correlate oil and authoritarianism have at least tentative support: a *rentier effect*, where governments use low tax rates and high spending to lessen democratic pressures; a *repression effect*, where governments build up internal security forces to counter democratic pressures; and a *modernization effect*, where the population's quest to migrate into industrial and service sector jobs makes them less likely to advocate for democracy.

Wegenast (2016) examined inclusive institutions and the onset of conflict in oil-rich countries as a factor that influences governance quality. He discovered that, when compared to oil-rich single party states, enclave economies with numerous parties had a greater conflict potential since only one of them has any effective political influence. The empirical research supported this proposition by assessing the influence of many parties on internal violence across sub-samples of oil-rich and oil-poor countries.

Gerring, Thacker, and Alfaro (2012) proposed several interconnected theories on how multiple political parties can increase violence in an oil-rich environment. Parties can boost regime dissidents by assisting the opposition in overcoming its collective action challenge and organizing itself. The opposition may resort to arms if tempted by the potential of large future rewards for controlling resource extraction income and the possibility of utilizing oil money to fund revolt. Lack of effective influence over decision-making processes may serve as an additional motivator for violent upheavals. After years of repression (e.g., through rigged elections or political violence), the opposition may revolt against the oppressive rulers. Colombia was cited as an example of advocated causal mechanisms. Revolutionary Armed Forces of Colombia (FARC) was able to disseminate its views and recruit people by forming the Patriotic Union. With a political arm, the rebel movement attempted to gain many mayoralties inside oil-rich regions to control the distribution of oil revenues.

Literature Review on Oil and Government Regime

A total of five publications considered whether oil and natural gas resources hindered or aided a particular form of governance with democracy and authoritarianism being the most common. According to the literature (N=4), O&G resources tend to enhance government regimes, especially democratic ones. About 25% (one study, N=1) stated that O&G resources established criteria that allowed them to examine the long-term relationships between resource dependency and regime type.

Ross and Andersen (2012) investigated whether there is a long-term relationship between the type of regime and resource reliance within countries. Their findings demonstrated that oil dependency does not increase dictatorship overall, both on a country-by-country basis and across distinct panels; in fact, several results indicated that such resources are a blessing. They found no evidence of a resource curse, regardless of how one perceives the links between polity and fiscal reliance, because they found no long-run equilibrium relationship between the two. However, after disregarding the cointegration tests and focusing on the parameter estimates derived from error correction model regressions, the conclusion that no resource curse exists had to be drawn, indicating that the link between polity and fiscal dependence is positive and substantial, signifying a resource blessing.

The findings of Brooks and Kurtz (2012) show that oil is not only a curse but helps build democratic political regimes. They disagreed with Haber and Menaldo (2011) on the traditional and conditional resource curse accounts, finding that oil had no obvious negative effects on the democratic regime outcome even in the most pessimistic scenarios. Both empirically and theoretically, their study attempted to address these difficulties. They investigated how public investments in human resources, technological advancement, and industrial deepening could be endogenous to industrialization. This demonstrated that the level of industrial growth in a country has a considerable impact on oil revenue. They also investigated the link between endogenous natural resource wealth and democracy, considering democratic diffusion among regional peers. They discovered that democratic trends among regional peers, especially the more developed ones, indicate the level of democracy in one country, and that oil wealth is not a curse.

Aslaksen's (2012) findings largely contradict the preceding views and suggest that oil and democracy have a negative relationship. When more covariates are added and big oil producers are eliminated, this result holds true for a variety of assessments of oil wealth and various measures of democracy. Aslaksen (2012) conclusions that there is no influence of oil on democracy are uninformative due to inadequate instrumentation, meaning that oil levels predict both levels and changes in democracy.

Smith (2017) investigated whether oil influences the lifespan of political regimes in developing countries by making them either weaker or stronger. After controlling for decreased odds of anti-state rebellion repression and civil war, the study investigated the effects of oil resources on regime sustainability data from a cross-sectional time series analysis of 107 developing nations from 1960 to 1999. His research found that while countries most reliant on exports witnessed more protests during the collapse, neither the boom nor the bust had a significant impact on regime stability. In short, oil money enhanced regime lifespan in general, but repression had only minimal impact.

Literature Review on Oil and Economic Development

A total of seven studies investigated whether oil and natural gas resources impede economic development in oil-rich countries. The studies focused on emerging and developing economies. Anshasy (2012) argues that the structure of government spending determines how oil abundance affects economic growth in the long run. He found that the negative growth effect of oil price volatility is channelled through fiscal policy. He used dynamic panel-data generalized methods of moments (GMM) and pooled mean group (PMG) approaches (used as estimators in this analysis) on a panel of oil exporters. Revenue windfalls can stifle growth in at least three ways: by weakening the domestic tax base, lowering the social return on new public capital, and intensifying political spending pressures resulting from the accumulation of surpluses.

The most important policy lesson for oil-exporting countries is that stringent fiscal constraints, backed by adequate political incentives, are required to protect public spending from oil cycles. Investing surpluses (in sovereign wealth funds) or reducing public debt in the face of oil windfalls would reduce competitive rent-seeking incentives and boost social gains. Ali and Harvie (2013) employed a deterministic dynamic macroeconomic model to examine the consequences of restoring Libyan oil production to pre-revolution levels on key macroeconomic indicators. According to modelled simulations, additional oil revenue causes increases in government revenue and domestic governmental spending.

Non-oil sector output and wages rose as foreign asset stocks expanded. Increased oil revenue, may have negative repercussions, notably for non-oil trade balances. This is due to a loss of competitiveness of non-oil tradable commodities which is caused by exchange rate appreciation and greater imports driven by increased real income. The results of the model simulations also imply that government investment-stimulating policies provide the greatest long-term economic advantages.

Nour (2011) investigated the impact of oil on the Sudanese economy and discussed the advantages and disadvantages. He conducted a thorough analysis based on secondary data to determine the detrimental effects of oil on Sudan's economic development. He believed that oil has had a mixed impact on the Sudanese economy, noting that it is a vital resource for meeting domestic consumption and achieving self-sufficiency through increased public sector earnings. Although oil has aided the country's economic performance, he worried that relying on oil revenues could create other challenges because it is a nonrenewable resource and the volatility of global oil prices might lead to unpredictable local growth. Furthermore, the country's growing reliance on oil increases the danger of a "Dutch disease" as well as a lack of diversification. It could also exacerbate problems related to the country's separation and the possibility of war with newly independent South Sudan.

Kennedy and Tiede (2013) argued that oil resources contribute to poor governance, resulting in slower economic growth, a higher risk of civil conflict, and other maladies. Such results are founded upon strong modernization assumptions suggesting oil resources are unrelated to or detrimental to economic growth. They discover that oil's negative effects on governance are not well understood using a unique multilevel variant of extreme bounds analysis (EBA). Instead, oil has a net positive impact on governance when we loosen strict assumptions about economic development's exogeneity and use more objective metrics of institutional integrity. Furthermore, when endogeneity is considered, there is scant evidence that weak governance has an intervening or independent effect on civil unrest in petrostates.

Quixina and Almeida (2014) examined the link between economic growth and financial development in Angola, a country whose economy relies on natural resources. They treated the oil and non-oil sectors of the economy separately. They looked for Granger causality among three variables in the Angolan economy from 1995 to 2012: oil income, non-oil gross domestic product (GDP) and financial development. Granger causation was established from oil revenues to the other two variables. The results suggested that the oil sector has been the engine of Angolan economic expansion, but none of these variables causes oil revenues. Financial development lacks a substantial role in Angolan economic growth; it does not Granger-cause either oil revenues or non-oil GDP.

According to Hammond's (2011) view of the resource curse theory, poor countries with large natural resource endowments, particularly oil, frequently fail to achieve long-term economic growth. This is because the size and volatility of oil revenues encourage corruption, mismanagement, and authoritarian governments that fail to invest for the future or provide for their constituents (Hammond, 2011). These do not necessarily imply resource wealth, but rather the political circumstances under which it is applied. The concept of resource curse is multifaceted, embracing honest government, effective economic management, and public welfare. Venezuela demonstrates that strong economic management alone is inadequate to overcome the resource curse; a political and social revolution will be required to serve the interests of the entire population.

Angola, offers a classic illustration of the resource curse. Since independence in 1975, the country has had a corrupt and dictatorial government. Frynas and Wood (2001) investigated the role of oil in the Angolan conflict. It illustrates that mining riches have funded Angola's war and determined the conflict's contours. The Movement for the Popular Liberation of Angola's (MPLA) access to oil funds and Union for the Total Independence of Angola's (UNITA) access to diamonds helps explain the conflict's length, nature and the timing of military actions. The resource curse argument significantly impacted Angola's political economy and was instrumental in the erosion of state legitimacy and impacted peace prospects. The shape of the conflict was influenced by the operations of multinational oil companies; stiff competition for oil concessions led to several companies attempting to curry favor with the Angolan state elite through dubious charitable donations, weapons deals, and other forms of assistance. The study challenged liberal notions about the benefits of trade when pursuing peace.

Critique of the Extant Literature

This review contributes to ongoing research on the effects of oil and gas resources, as well as quality of governance. The policy implications for overcoming the difficulty of institutional improvement in developing countries rich in O&G, where wealth often leads to weak institutions, and the rents from oil resources do not appear to be shrinking despite growing world market prices. In many of the world's most unstable countries, the ramifications of these discoveries for resource-rich countries are considerable. Other researchers have found that resource richness reduces economic growth and increases the potential of civil war.

Identifying the Future of Practice and Policy

How can political leaders and elites use oil revenues to avoid the political resource curse and support democracy in emerging oil countries? Van de Ploeg and Venables (2012) offer three mechanisms: 1) establish policies to foster elevated levels of transparency; 2) ensure that the political system has a centralized financial authority and control structure; 3) enact a fiscal constitution that brackets public spending derived from resource revenues or public funds.

For such a fiscal constitution to be effective, it must be resilient in the face of changing political and economic circumstances while not being so rigid as to exclude unusual and volatile reactions. To summarize, volatility can be reduced by establishing a sustainable independent sovereign wealth fund that invests productively in infrastructure, institutional, and human capital development for future and present generations.

Natural resource wealth is a discovery of economic exploitation, not an inevitable blessing or an inexorable death sentence for a nation's economy and governance, as several countries have proved. Norway is an example of how O&G resources can be a boon when paired with strong public and commercial institutions. Norway has stable institutions, scoring above the world average in the World Bank's rule of law rating. Most African oil giants are categorized as authoritarian regimes; for example, Nigeria ranks 108th out of 128 countries in terms of rule of law. As a result, African countries must take steps to strengthen and sustain the rule of law and other important institutions. Effective laws must safeguard citizen rights, keep the peace, and maintain a legitimate government whose power is held in check.

Furthermore, extractive corporations and donor agencies should focus more on community development programs and recommended routes to make extractive resources a stake for peace rather than violent rent-seeking.

Finally, this review's findings show that comparative politics is particularly concerned in describing processes that occur within countries over time, such as industrialization, welfare state construction, taxation, centralization, democratic transitions, and civil conflict. To analyse these dynamics, comparative studies frequently used datasets with brief time dimensions and pooled regression techniques that consider countries as homogeneous units. However, employing a time-series approach to data eliminates concerns about bias. When a hypothesis is about dynamic changes that occur inside countries over time rather than static differences across countries, historical datasets may provide a better long-term match between theory and evidence. Using this approach, researchers may be able to enhance not only causal inference, but also the genuine underlying causes.

Implications of the Integrative Literature Review

Due to the strict inclusion criteria, articles concentrating on the broad "natural resources curse or blessing" were excluded from this integrative review of literature. They may have offered insights concerning the longer-term consequences of natural resource endowments on emerging country governance. Furthermore, the meta-analysis was limited to English-language articles, eliminating other potentially relevant information. Another disadvantage of this study is that data on the types of countries considered in the studies under examination is not consistently published.

Furthermore, other papers contained low-quality data, but they were included since the information they contained was useful in shedding light on the subject. It is notable that assessing governance outcomes is a challenging task, given the complexities of a country's history, political economy, and geographic location. Little research has considered the continued effectiveness of reducing the consequences of weak government institutions in controlling countries with rising economies. In addition to global oil marketing corporations, most universities, numerous government institutions, and colleges in oil-producing countries, may benefit from this information.

According to this review of literature, the governance of oil in emerging economies can be improved by ensuring that: 1) government leaders take decisive action to eliminate corruption in the oil business; 2) rent seeking is minimized; 3) the business taxation system is revised to empower locals to participate in oil exploration; and 4) various business institutions, including companies and government civil servants, are sensitized about the issue. More research funds should be raised from cooperating partners such as the World Bank to fund extractive research initiatives about oil exploration and governance.

Future Recommendations and Conclusions

The findings of 16 research publications were divided into three categories: four papers looked at the links between crude oil and governance quality, five at the links between crude oil and government regime, and seven at the links between crude oil and economic development.

The literature (N=4) considered how crude oil and natural gas resources affect the quality of governance in countries where crude oil is abundant. The study concentrated on nations classified as emerging or developing economies. It revealed new evidence that crude oil and natural gas resources have diverse effects on the governance of rising economies.

The literature supports the claims that crude oil and natural gas resources have negative effects on emerging country governance. This is because they tend to stifle democracy, strengthen authoritarianism, and support the casual mechanisms of repression, rentierism, and modernization, all of which exacerbate internal conflicts and tarnish government institutions. The inconsistency of findings across studies is difficult to explain with certainty. It may point to issues of interpretation, data analysis, and methodologies that lead to results that show different effects in the context of oil abundance, geographic regions, and institutional factors.

Five studies looked at whether O&G resources in developing oil-rich countries hinder or fuel a specific form of governance regime. According to the literature (N=4), crude oil and natural gas resources tend to improve governing regimes, notably democracy. While one study indicated that crude oil and natural gas resources are inextricably linked to a certain government regime type, the fact that just four studies attempted to answer this topic adds to the limits of the findings.

Countless businesses throughout the world are involved the production, storage, and marketing of oil and natural gas (Roosa & Freedenthal, 2018). Governance is critical in fostering an atmosphere conducive to business growth, engendering the reduction of poverty and long-term development, particularly in emerging countries. The literature (N=7) investigated how O&G affect a country's economic development. Natural gas and crude oil resources, according to the literature, have detrimental effects on long-term economic and social growth in emerging economies endowed with natural gas and crude oil resources.

Nevertheless, volatility can be mitigated by the creation of an independent sovereign wealth fund that supports the present generation while also investing in infrastructure, institutional, and human capital development.

References

Abdel-Fadil, A. (2015). The macro-behaviour of oil-rentier states in the Arab region. In *The Rentier State* (pp. 97-121). Routledge: London.

Albinali, A. (2017). *Oil Policy and Elites Political Survival: Determinants and Consequences of Oil Sector Ownership Structure*. Doctoral dissertation, the Claremont Graduate University.

Ali, I. & Harvie, C. (2013). Oil and economic development: Libya in the post-Gaddafi.

Anheier, H., Kaldor, M. & Glasius, M. (2012). *The Global Civil Society Yearbook: Lessons and Insights 2001–2011* (pp. 2-26). Palgrave Macmillan: London.

Anshasy, A. (2012). Oil revenues, government spending policy, growth. *Public Finance and Management*, *12*(2).

Aslaksen, S. (2012). Oil and democracy: More than a cross-country correlation? *Journal of Peace Research*, *47*(4), 421-431.

Barma, N., Kaiser, K., Le, T. & Vinuela, L. (2012, December). *Rents to riches? The political economy of natural resource-led development*. World Bank Publications, No. 2381 Retrieved from https://ideas.repec.org/s/wbk/wbpubs.html.

Brooks, S. & Kurtz, M. (2012). Oil and democracy: endogenous natural resources and the political resource curse. *International Organization*, *70*(2), 279-311.

Chatagnier, J. & Castelli, E. (2019). The arc of modernization: economic structure, materialism, and the onset of civil conflict. *Political Science Research and Methods*, *7*(2), 233-252.

Frynas, J. & Wood, G. (2001). Oil and war in Angola. *Review of African Political Economy*, *28*(90), 587-606.

Gerring, J., Thacker, S. & Alfaro, R. (2012). Democracy and human development. *The Journal of Politics*, *74*(1), 1-17. https://doi.org/10.1017/s0022381611001113.

Haber, S. & Menaldo, V. (2011). Do natural resources fuel authoritarianism? A reappraisal of the resource curse. *American Political Science Review*, *105*(1), 1-26.

Hammond, J. (2011). The resource curse and oil revenues in Angola and Venezuela. *Science and Society*, *75*(3), 348-378.

Kennedy, R. & Tiede, L. (2013). Economic development assumptions and the elusive curse of oil. *International Studies Quarterly*, *57*(4), 760-771.

Nour, S. (2011). Assessment of the impact of oil: Opportunities and challenges for economic development in Sudan. *African Review of Economics and Finance*, *2*(2), 122-148.

Nwaneri, M., Uwakwe, S. & Audu-Bako, S. (2019). Oil spill and community livelihood in the Niger Delta: accessing grievance management mechanisms for victims in Bayelsa State. *Vejoh-Veritas Journal of Humanities*.

Ocakli, F. & Scotch, M. (2017). Oil-fueled insurgencies: lootable wealth and political order in Syria, Iraq and Nigeria. *Journal of Global Security Studies*, *2*(1), 74-88.

Okoli, A. (2019). Oil pipeline vandalism in the Niger Delta: need, greed, and grievance factors. *Conflict Trends*, *2*, 12-19.

Omeje, K. (2021). Natural resources and rentier capitalism. In *The Failure and Feasibility of Capitalism in Africa* (pp. 85-116). Palgrave Macmillan: London.

Ploeg, F. & Venables, A. (2012). Natural resource wealth: the challenge of managing a windfall. *Annual Review of Economics*, *4*, 315-337.

Quixina, Y. & Almeida, A. (2014). Financial development and economic growth in a natural resource-based economy: evidence from Angola. *FEP-UP, School of Economics and Management, University of Porto*.

Roosa, S. & Freedenthal, C. (2018). Natural gas purchasing. In *Energy Management Handbook* (pp. 637-670). The Fairmont Press: Lilburn, Georgia.

Ross, M. & Andersen, J. (2012). The big oil change: a closer look at the Haber-Menaldo analysis. In *APSA 2012 Annual Meeting Paper*.

Ross, M. (2015). What have we learned about the resource curse? *Annual Review of Political Science*, *18*, 239-259.

Sackeyfio, N. (2013). Power, agency and politics in resource rich economies of Ghana and Nigeria. In *APSA 2013 Annual Meeting Paper, American Political Science Association 2013 Annual Meeting*.

Sarmadi, H., Mortaza, B., Hafez, A. & Sious, S. (2018). Negative correlation between economic structure of rentier state and non-democratization (case study: Saudi Arabia). *Humanities and Social Science Research*, *1*(1), 1.

Smith, B. (2017). Resource wealth as rent leverage: Rethinking the oil stability nexus. *Conflict Management and Peace Science*, *34*(6), 597-617.

Stevens, P., Lahn, G. & Kooroshy, J. (2015, August). The resource curse revisited. Retrieved September 3, 2022, from https://www.tralac.org/images/docs/7923/the-resource-curse-revisited-research-paper-august-2015.pdf

Torraco, R. (2005). Writing integrative literature reviews: guidelines and examples. *Human Resource Development Review*, *4*, 356-367.

Towah, W. D. (2019). *The Impact of Good Governance and Stability on Sustainable Development in Ghana.* Doctoral dissertation, Walden University.

Waldner, D. & Smith, B. (2014, May 5). Rentier states and state transformations. *Oxford Handbook on Transformations of the State*.

Wegenast, T. (2016). Oil, natural gas, and intrastate conflict: Does ownership matter? *International Interactions*, *42*(1), 31-55.

Zhai, B. (2016). Establishing the domestic education value of the new period. *Educational Research*, *3*, 92-98.

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