

**The resource curse theory - the impact of globalisation on resource-rich
countries' resource curse vulnerability.**

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University of Pretoria, in partial fulfilment of the requirements for the degree
of Master of Business Administration.

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Abstract

Despite the substantial body of knowledge concerning the resource curse theory, the impact of globalisation has been overlooked. The study provides insights into the relationship between a country's resource curse vulnerability and globalisation. A quantitative approach was used along with secondary data to determine the effect of globalisation on countries' resource vulnerability index (RCVI).

The dynamic models provided no significant results for RCVI and overall globalisation, while the static model revealed a significant and inverse correlation. Similarly, the subdimensions of social and political globalisation displayed a negative relationship with RCVI. In contrast, there was a positive relationship between economic globalisation and RCVI.

Consequently, both social and political globalisation can lead to greater transparency, accountability, and improved governance, mitigating the effects of the resource curse by promoting higher diffusion of norms and ideas and a higher level of international cooperation, treaties and organisations encouraging institutional and policy reforms.

Decision-makers and policymakers can leverage the research to mitigate resource-rich countries' susceptibility to the resource curse and establish more diversified economies through effective policies and strong institutions.

Future research should consider the *de facto* and *de jure* subdimensions of the globalisation index, including financial, trade, interpersonal, cultural and informational globalisation.

Keywords

Globalisation, resource curse theory, resource curse vulnerability

Declaration

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

Alme Janine du Plessis

01 November 2023

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Abbreviations

CV	Control Variables
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GLO	Globalisation Index Vector
HDI	Human Development Index
KOF	Konjunkturforschungsstelle
KOFGI	KOF Globalisation Index
KOFEcGI	KOF Economic Globalisation Index
KOFPoGI	KOF Political Globalisation Index
KOFSoGI	KOF Social Globalisation Index
mmbbl	million barrels of oil
MNCs	Multinational Corporations
NGOs	Non-governmental Organisations
RCVI	Resource Curse Vulnerability Index
RRL	Resources Rent Level
tcf	trillion cubic feet
UNDP	United Nations Development Programme

1. Chapter 1 – Introduction to Research Problem

1.1 Introduction

The research problem chapter introduces the research topic on the resource curse theory, focusing on the effect of globalisation on resource-rich countries' resource curse vulnerability. The chapter provides comprehensive information about the research problem, a purpose statement and the research scope of the study. Furthermore, the chapter highlights both the academic significance and practical relevance in the business context. Lastly, as part of the chapter's conclusion, a high-level outline of the structure of the research report is presented.

1.2 Research Problem

The resource curse theory describes resource-rich countries that are not benefiting economically as expected from their resource abundance (Elmassah & Hassanein, 2022). In recent studies, the need to analyse a country's vulnerability beyond traditional nationalism thinking has arisen by considering globalisation, including among other social, political and cultural indicators and international interactions (Adams, Adams, Ullah & Ullah, 2019; Siakwah, 2017).

1.3 Purpose Statement

The study provided insights into the intricate relationship between a country's resource curse vulnerability and globalisation, which will equip key stakeholders with more knowledge to improve partnerships, policies and negotiations, leading to increased national wealth and ultimately improving the livelihoods of the local citizens (Adams et al., 2019; Nounba, Nounba, & Ngonkeba, 2022).

1.4 Academic Relevance

Despite the substantial body of academic knowledge and numerous studies spanning decades concerning the resource curse theory, the impact of globalisation has been largely overlooked (Adams et al., 2019; Havranek, Horvath, & Zeynalov, 2016; Henri, 2019). Traditional studies have predominantly focused on the association between the resource curse theory and economic factors (Bireselioglu, Demir, Gonca, Kolcu & Yetim, 2019). Furthermore, these studies

primarily confined the resource curse within the national boundaries, focusing on national indicators like Human Development Index (HDI), corruption, Gross Domestic Product (GDP), fragile state, natural resources rents, government effectiveness and political stability. Siakwah (2017) provides a clear case that existing studies indicate that the resource curse is due to nationalism, meaning that the national elites and institutions are the reason for the suffering of economic limitations of resource development.

However, the limited consideration of broader international interactions and macro-level indicators on the globalisation level can hinder the comprehensive understanding of the resource curse phenomenon (Adams et al., 2019). Furthermore, the globalised assemblage within resource-rich industries, such as the hydrocarbon industry needs was considered, as elaborated by Siakwah (2017).

By failing to account for the role of globalisation, previous analyses have overlooked the potential effects of global economic interdependencies, transnational corporations, and international governance frameworks on resource curse vulnerability. Siakwah (2017) highlighted this theoretical gap regarding the role of globalisation in the context of a country's resource curse vulnerability, and this gap is further supported by the findings of Adams et al. (2019). Resource curse vulnerability was calculated while globalisation was captured using a composite index to establish the relationship.

The "*Konjunkturforschungsstelle*" (KOF) Globalisation Index measures globalisation, including the network of interactions between states, local and national politics, transnational interests, globalised structures and technology actors. The KOF Globalisation Index (KOFGI) enables the measurement of globalisation with multiple variables and different dimensions of globalisation. (Gygli, Haelg, Potrafke & Sturm, 2019). Determining the effect of globalisation on resource curse vulnerability transcends the traditional view, by allowing for various international interactions and considerations within the KOFGI like trade agreements, international treaties, trade partner diversity and much more, as detailed in chapter two.

1.5 Business Rationale

Improved technologies and the desire to find new reserves to meet the rising demand for energy are driving the endless search for non-renewable natural resources. These precious resources are sought after not only on land but also offshore due to improved technology. Recent oil and gas discoveries provide convincing evidence of the enormous scope and ongoing demands that are associated with the research. Below are a few examples of recent discoveries:

1.5.1 Recent Natural Gas Discoveries

Significant recent natural gas discoveries include, among others, the east Mediterranean gas discoveries in 2015 off the coast of Israel known as the Leviathan gas field containing 22 trillion cubic feet (tcf) of gas and off the coast of Egypt in the Zhor gas field an estimated 30 tcf (Zhang, Qu, Chen, Zhao, Zhang, Yang & Ma, 2019). The East and Southern Africa gas discoveries in 2010 are led by an astonishing 100 tcf in the Rovuma Basin off the coast of Mozambique (Zhang et al., 2019). Lastly in 2019, Russia's Arctic Gazprom discovered roughly 0.8 tcf in the Dinkov field (LNGPrime, 2020).

1.5.2 Recent Oil Discoveries

Similarly, significant oil field discoveries within the past few years include, in 2018, Equinor discovered new fields of 35 mmbbl (million barrels of oil) in the Lille Prinsen field in Norway (Offshore Technology, 2021). In 2022, ExxonMobil made three discoveries total 110 mmbbl in the Liza and Payara Fields in Guyana (ExxonMobil, 2022). Lastly, in Colombia in 2022, an estimated 2 billion barrels of oil was discovered by Ecopetrol in the Suroriente Block (Cobb, 2023).

1.5.3 Investment and Policy Requirements

Since large capital investments are required from multinational corporations like ExxonMobil and Gazprom to extract these natural resources due to a lack of funding, experience and technology from governments, these multinational corporations tend to own and operate the resources (Bishoge & Mvile, 2020). The resource curse can be diminished by understanding the complexities and the various subdimensions of globalisation that influence resource-rich countries. Therefore, the research is relevant to all stakeholders involved, including the

government, multinational corporations and citizens, particularly in developing resource-rich countries.

The research aids policymakers in identifying gaps and thereby opportunities for enhancing partnerships, policies, and negotiations with global actors, which can result in greater national wealth and improved well-being for local communities. Policymakers can leverage the advantages of globalisation research to decrease resource-rich countries' susceptibility to the resource curse and establish more diversified and sustainable economies (Biresselioglu et al., 2019; Nguea, Fotio, & Baida, 2022).

1.6 Research Scope

The scope of the research is limited to natural resource-rich countries due to the focus of the resource curse theory. Due to the accessibility and availability of the data, the research scope consists of 69 countries. These countries form the core dataset that spans an 11-year temporal window, encapsulating the years from 2005 to 2015.

Due to data limitations, this study is limited in what countries it can investigate, so it is essential to emphasise the research findings' broader significance. The findings from this study surpass the boundaries of the selected countries and the specific time frame and can apply to resource-rich countries that were excluded. Therefore, the research outcomes possess applicability that extends beyond the confines of the dataset. The study provides valuable guidance to decision-makers, governmental bodies, and various stakeholders operating in resource-rich countries, offering a guideline for formulating and implementing strategies to put into practice plans to promote holistic and sustainable economic growth.

1.7 Conclusion

The resource curse theory has been a critical subject of investigation, shedding light on the economic challenges that resource-rich nations face despite their abundant natural resources. It demonstrates that these nations are more prone to experience issues like corruption, unstable economies, and authoritarian governments. Most studies on the resource curse theory do not consider the potential benefits of globalisation, which can potentially exacerbate or mitigate

some of these challenges. However, globalisation can allow information flow, open market access and economic diversification, which can assist resource-rich nations in reducing their reliance on natural resources and building more diverse, sustainable economies.

The resource curse theory has long been a focus of scholarly debate, although globalisation's contribution to this problem is frequently ignored. Traditional studies have primarily concentrated on national indicators and economic factors, neglecting the broader international interactions and macro-level indicators captured by the KOF Globalisation Index. As a result, the potential effects of global economic interdependencies, transnational corporations, and international governance frameworks on resource curse vulnerability have been disregarded.

By considering the subdimensions of globalisation through the KOF Globalisation Index, this research aims to provide new insights into the relationship between globalisation and a country's susceptibility to the resource curse. By doing so, the study aims to offer valuable knowledge to key stakeholders, including governments, multinational corporations, and citizens, particularly in developing resource-rich countries.

This research can assist those who make decisions for countries and businesses, not only academics. The research can improve agreements, investments, norms, and discussions with the rest of the world by understanding how globalisation affects resource-wealthy nations. By leveraging the advantages of globalisation research, resource-rich countries can reduce their vulnerability to the resource curse and foster diversified and sustainable economies.

The succeeding chapters of this study adhere to the following structural framework. Chapter two offers a detailed study of the relevant literature, including key constructs, while highlighting the existing gap in the body of knowledge. Chapter three presents research questions alongside the hypotheses that align with the research gaps identified in chapter two. Chapter four explains the research methodology used to answer the research questions outlined in chapter three. This provides an understanding of how the data was analysed to derive the study's results and conclusions, presented in chapter five.

Chapter six provides a detailed discussion of the findings in chapter five, aligning them with preceding chapters, including chapters one, two, and three. Lastly, chapter seven serves as the conclusion of the research, summarising the research constructs, methodology and findings. Additionally, this chapter addresses the research's limitations while providing suggestions for potential future research studies.

2. Chapter 2 - Literature Review

2.1 Introduction

The chapter provides a detailed review of the relevant literature to understand the effect of globalisation on a country's resource curse vulnerability. The focus of the literature is to provide an overview based on previous studies and perspectives to build up to the research questions. The literature review chapter explains the main constructs including the resource curse theory, the resource curse vulnerability index and the KOF globalisation index. The section includes a review of academic work showcasing the argument for the research topic addressed.

2.2 Resource Curse Theory

Natural resources are inherently existing assets in the world, encompassing various elements such as minerals, fertile land, forests, water, and materials, and possess the potential to generate economic benefits (Badeeb, Lean & Clark, 2017). However, the resource curse theory, also known as the paradox of plenty, elucidates a phenomenon where resource-rich countries fail to reap long-term economic advantages from their abundant resources. Instead, these countries experience slower economic growth than countries with fewer natural resources (Havranek et al., 2016; Henri, 2019; Vahabi, 2018). The resource curse theory primarily focuses on non-renewable natural resources like oil, gas, and minerals. Additionally, these resources are extracted from the earth and cannot be replenished or reproduced (Badeeb et al., 2017; Vahabi, 2018).

2.2.1 Resource Curse Theory Evolution

During the early stages of exploration into this theory, an optimistic outlook existed that resource-rich countries endowed with oil and gas reserves would experience economic benefits in the form of industrial development, market expansion, and increased investment opportunities (Badeeb et al., 2017). However, the concept of the Dutch disease emerged in 1982 as a precursor to the resource curse, shedding light on a phenomenon where the rapid growth of the natural resource sector negatively affects other sectors, such as manufacturing, leading to economic decline (Nuhu et al., 2020). In 1988, the resource curse thesis was established through a case study and the term resource curse was coined in 1993. According

to the study done by Sash and Warner in 1995, natural resource wealth was associated with slower long-term economic growth compared to resource scarcity (Havranek et al., 2016). After 2001, Gylfason shifted focus towards exploring broader channels of resource dependence, including human capital formation, savings and investments (Havranek et al., 2016).

Figure 2-1 summarises the key progression stages of the resource curse theory as depicted by Badeeb et al. (2017).

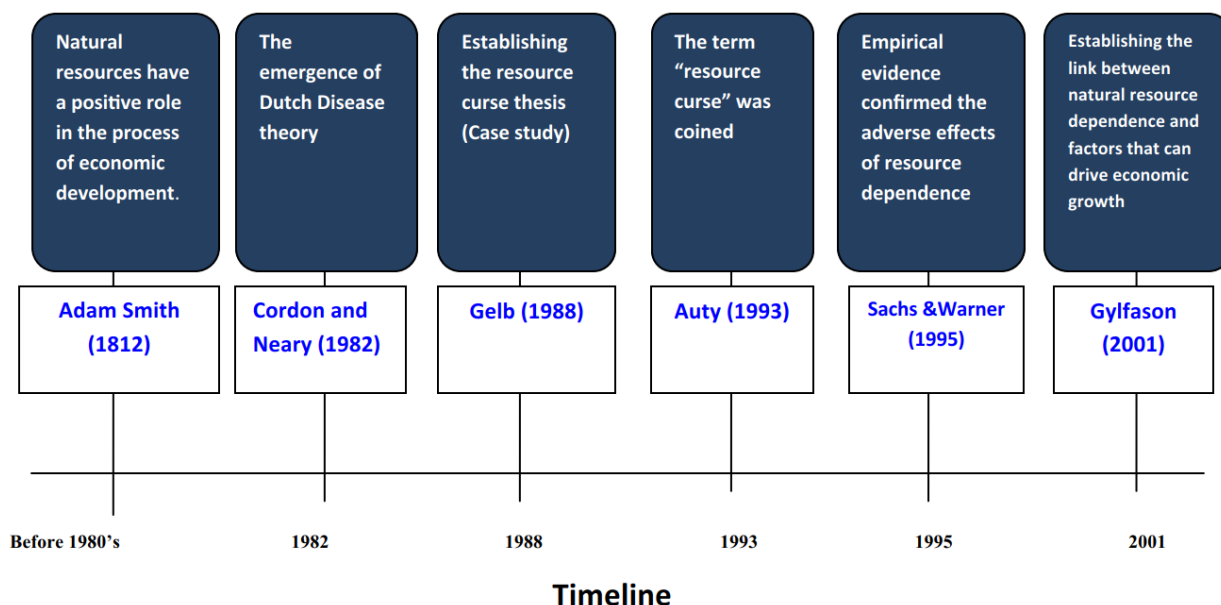


Figure 2-1: The resource curse theory evolution

Source: Badeeb et al., 2017 p125

Still today, there are academics have varying views regarding the resource theory curse and no consensus has been reached regarding the existence, causes and effects (von Haldenwang & Ivanyna, 2018).

The Dutch disease, which in terms of economic growth should be considered along with the resource curse, can be divided into a spending effect and a pulling effect, as shown in Figure 2-2 and Figure 2-3, respectively. The spending effect is due to the natural resource boom, which leads to increased inflation and appreciation of the exchange rate, which leads to exports becoming expensive. Ultimately, the non-resource industry is less competitive and attracts less spending or investments from the global market (Venables, 2016).

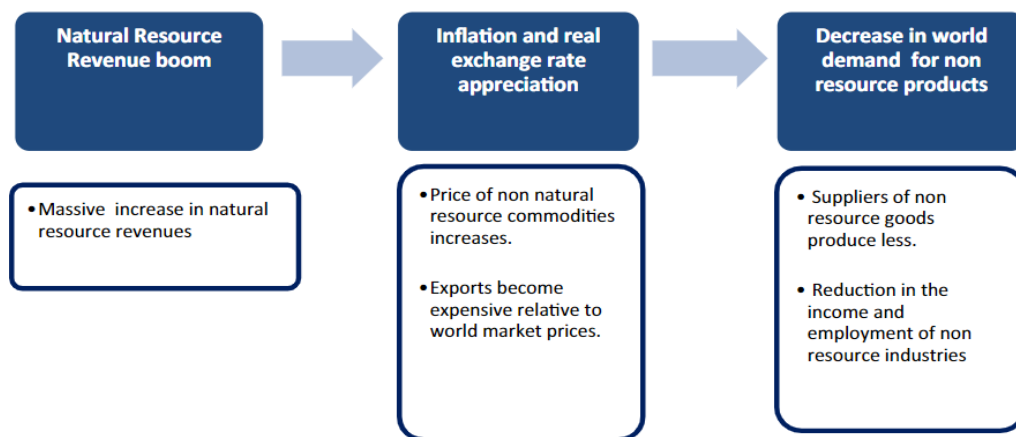


Figure 2-2: Dutch Disease – Spending effect

Source: Badeeb et al., 2017 p126

The Dutch disease pull effect is due to the fact that the natural resources sector utilised all the local resources. Therefore, a rise in prices for other sectors like manufacturing and agriculture increases these sectors’ production costs. (Badeeb et al., 2017).



Figure 2-3: Dutch Disease – Pulling effect

Source: Badeeb et al., 2017 p126

2.3 Resource Curse Vulnerability

Considering the resource curse theory and the Dutch disease, as discussed in Section 2.2, resource curse vulnerability assesses the specific risks and weaknesses within a country that make it susceptible to the resource curse. Gnansounou (2008) defined the vulnerability of a system as “the degree to which that system is unable to cope with selected adverse events” (p.3735). Resource curse vulnerability refers to the susceptibility or weakness of an organisation, system or, within the context of this research, a country to potential harm or exploitation.

Furthermore, vulnerability can be defined by the probability and likelihood of selected events (Gnansounou, 2008). Resource-rich countries are vulnerable if they are susceptible to certain events and thereby “cursed” according to the resource curse theory. Countries that are not susceptible to the resource curse and achieve positive development outcomes while having substantial natural resource wealth are “immune” to the resource curse. In the realm of public policy, focused initiatives aimed at improving government effectiveness, ensuring political stability, and eliminating violence (e.g., riots) directly contribute to reducing vulnerability to the resource curse discussed earlier (Henry, 2019).

Compared to non-resource-rich countries, resource-rich countries experience more significant external events and resource-dependent countries are less equipped to handle these events (von Haldenwang & Ivanyna, 2018). Countries less equipped to deal with these events are coined by von Haldenwang and Ivanyna (2018) as vulnerability, which is “a key manifestation of the so-called resource curse” (p.324).

Due to the complexity of measuring and assessing vulnerability, multiple indicators were required to obtain an impartial, accurate and objective metric (World Energy Council, 2008). Although there is no adequate approach to quantify resource curse vulnerability, using a range of predetermined indicators will provide a holistic metric or index (World Energy Council, 2008). Therefore, a similar approach to calculated resource curse vulnerability was deployed based on the previous academic study from Biresselioglua et al. (2019) regarding resource curse vulnerability. Similar indicators were used, however, each indicator was verified using additional academic studies to ensure the relevance.

2.3.1 Resource Curse Vulnerability Index

The Resource Curse Vulnerability Index (RCVI) is a composite index used to measure the vulnerability of countries to the resource curse considering nine sub-indicators (Biresselioglua et al., 2019). The range of indicators relates to governance, economic development, and social and political factors that affect the resource curse phenomenon on an in-country level.

The raw data utilised by the Resource Curse Vulnerability Index (RCVI) is sourced from reputable databases such as the World Bank, the United Nations Development Programme’s (UNDP) Human Development Reports, and the

Transparency International Corruption Perceptions Index. The data sources used in the RCVI are collected both using quantitative and qualitative methods. Indicators collected using quantitative methods are factors that consider a country's economic performance, such as GDP growth. On the other hand, qualitative data sources were created using expert assessments and surveys that are harder to measure to capture perceptions of corruption, political stability, and other factors that may influence a country's vulnerability to the resource curse.

The compiled average data per country is available, while the raw data is based on nine indicators from various open-source databases. As per the method by Biresselioglu et al. (2019), the RCVI can be calculated using the following indicators and equations stipulated below. These indicators were the most commonly mentioned indicators as part of a primary analysis of 100 articles by Biresselioglu et al. (2019). A relative indicator was calculated to allow for cross-comparisons, thereby normalisation all values between 0 and 1 to remove any scaling and unit inconsistencies.

1. Government effectiveness

Government effectiveness (I_1) indicates the degree to which a government can deliver high-quality civil and public services and policy implementation. Various studies investigated the impact of government effectiveness on resources-rich countries and the relationship, focusing on how susceptible a country is considering the resource curse, economic growth and resource rents (Adabor, 2023; Fagbemi & Omowumi Adeoye, 2020). Therefore, government effectiveness is a key indicator used to determine a country's vulnerability towards the resource curse.

The relative government effectiveness index was calculated using Equation 1.

$$\varphi_{1C} = \frac{I_{1C} - \text{MIN}(I_{1C})}{\text{MAX}(I_{1C}) - \text{MIN}(I_{1C})} \dots \dots \dots (1)$$

A high relative indicator of government effectiveness indicates a high quality of policy formulation and implementation, along with high quality government services.

2. GDP growth rate

The GDP growth rate (annual percentage) (I_2) is a key economic indicator measuring a country's total economic output change. Various GDP indicators

including, GDP per capita and GDP growth rate, were used in multiple studies to establish the relationship between economic growth and the impact it has on the resource curse (Havranek et al., 2016; Williams, 2011).

The relative GDP growth rate index was calculated using Equation 2.

$$\varphi_{2C} = \frac{I_{2C} - MIN(I_{2C})}{MAX(I_{2C}) - MIN(I_{2C})} \dots\dots\dots(2)$$

A high GDP growth relative indicator indicates that the economy is expanding compared to the previous year.

3. Rule of law

The rule of law indicator (I_3) assesses the extent to which principles and practices of the rule of law are upheld in a country and it includes the governance structure, adherence to crucial rule of law principles and judicial systems. Ferreira, Gomes, Lopes and Zhang (2023) studied the relationship between, among other indicators, the rule of law and resource rent in determining the impact on resource-rich countries in the Middle East, North Africa and Sub-Saharan Africa. The rule of law indicator was a common theme in studies regarding the vulnerability of nations to the resource curse (Chambers & Munemo, 2019; von Haldenwang & Ivanyna, 2018).

The relative rule of law index was calculated using Equation 3.

$$\varphi_{3C} = \frac{I_{3C} - MIN(I_{3C})}{MAX(I_{3C}) - MIN(I_{3C})} \dots\dots\dots(3)$$

A high value of the relative rule of law indicates that individuals within a society have a strong sense of confidence in and adherence to societal norms and regulations, which reduces the likelihood of encountering violence and crime. This encompasses the effectiveness and efficiency of contract and police enforcement and the reliability of the judicial system.

4. Political stability

The political stability (I_4) indicator measures the level of political stability in a country taking into account various factors like riots, coups, terrorism, civil and political unrest. Political stability has been found to be a critical indicator relating to

a country's resource curse vulnerability. Political instability exacerbates a country's vulnerability to the resource curse due to weak institutions and increased corruption (Chambers & Munemo, 2018; Fagbemi & Omowumi Adeoye, 2020).

The relative political stability index was calculated using Equation 4.

$$\varphi_{4C} = \frac{I_{4C} - \text{MIN}(I_{4C})}{\text{MAX}(I_{4C}) - \text{MIN}(I_{4C})} \dots \dots \dots (4)$$

A higher relative political stability score, closer to 1, indicates a greater degree of political instability and a higher risk of political conflicts or disruptions within a country.

5. Voice and accountability

Voice and accountability (I_5) is an indicator that measures the extent to which citizens are able to select their own government and if the citizens have freedom of expression. Multiple studies focusing on the resource curse theory, listed voice and accountability as a key indicator to consider the impact it has on a country's susceptibility (Elmassah & Hassanein, 2022; Ferreira et al., 2023).

The relative voice and accountability index was calculated using Equation 5.

$$\varphi_{5C} = \frac{I_{5C} - \text{MIN}(I_{5C})}{\text{MAX}(I_{5C}) - \text{MIN}(I_{5C})} \dots \dots \dots (5)$$

The higher the relative score for voice and accountability, the more a country's citizens are able to select their own government, including free media, expression and association.

6. Natural resource rent

Total resource rent as a percentage of GDP (I_6) assesses the economic significance of a country's natural resource sector concerning its overall economic output. Numba et al. (2022) and Chambers and Munemo (2018) considered the resource curse theory, specifically the impact of natural resource rents on a country's resource curse vulnerability.

The relative resource rent index was calculated using Equation 6.

$$\varphi_{6C} = \frac{I_{6C} - \text{MIN}(I_{6C})}{\text{MAX}(I_{6C}) - \text{MIN}(I_{6C})} \dots \dots \dots (6)$$

A low relative index for resource rent suggests that the country's economy is not heavily dependent on natural resources, and other sectors contribute significantly to its GDP.

7. Human development level

The human development level (I_7) provides a holistic view of a country's overall development and well-being, which includes the population's health, education and standard of living. Despite abundant natural resources, countries do not excel as expected due to the resource curse transcending economic growth, including human well-being. Human capital measured by the human development level index was studied and the relationship was investigated relating to the resource curse (Elmassah & Hassanein, 2022; Nomba et al, 2022).

The relative human development level index was calculated using Equation 7.

$$\varphi_{7C} = \frac{I_{7C} - \text{MIN}(I_{7C})}{\text{MAX}(I_{7C}) - \text{MIN}(I_{7C})} \dots \dots \dots (7)$$

A high relative human development index indicates a society has a high standard of living, including high education and healthy citizens.

8. Fragile State

The fragile state indicator (I_8) assesses a country's vulnerability and fragility to conflict, failure and instability, considering various factors like economic, social and security factors (Hawes, 2018). State fragility has been considered a factor since most new oil and gas producers are considered fragile states or developing states enhancing their susceptibility to the resource curse (Moss, 2011).

The relative fragile state index was calculated using Equation 8.

$$\varphi_{8C} = \frac{I_{8C} - \text{MIN}(I_{8C})}{\text{MAX}(I_{8C}) - \text{MIN}(I_{8C})} \dots \dots \dots (8)$$

A higher relative fragile state index indicates more vulnerability or fragility in the country.

9. Transparency level

The transparency level indicator (I_{9C}) assesses the country's degree of transparency and openness. Transparency was highlighted and investigated as a key indicator for consideration relating to a country's resource curse vulnerability (Williams, 2011).

The relative transparency level was calculated using Equation 9.

$$\varphi_{9C} = \frac{I_{9C} - \text{MIN}(I_{9C})}{\text{MAX}(I_{9C}) - \text{MIN}(I_{9C})} \dots \dots \dots (9)$$

According to the relative transparency level index, a high value indicates more transparency and disclosure of information.

10. RCVI

Using the above nine relative indicators, the composite resource curse vulnerability index was calculated using equation 10. A higher RCVI index indicates that a country is more susceptible to the resource curse.

$$\text{RCVI} = 1 - \sqrt{\frac{\sum_{i=1}^9 \varphi_{iC}^2}{9}} \dots \dots \dots (10)$$

This study used a similar approach to determine the average RCVI and the RCVI per country per year. Overall, the RCVI is a valuable tool for assessing a country's vulnerability to the resource curse and can provide essential insights into the complex challenges associated with natural resource wealth.

As the resource curse theory primarily focuses on resource-rich countries, the selection of countries for the study was narrowed down using the Resource Rent level as a threshold. The annual resource rent level (RRL) was calculated using the total natural resources rent times the annual GDP, set at 1 billion USD per year over the specific period (Biresselioglua et al., 2019).

In conclusion, based on the previous study conducted by Biresselioglua et al. (2019), the composite resource curse vulnerability index and the nine indicators used were substantiated using additional sources. Globalisation as the second composite index used along with the various subdimensions is the focus of the next section.

2.4 Globalisation

Globalisation is a term that describes the growing interconnectedness and interdependence among nations and their economies. It encompasses the exchange and movement of ideas, individuals, commodities, and services across national borders (Nguea et.al. 2022; Nomba et.al., 2022). Furthermore, Gygli et al. (2019) state that globalisation “erodes national boundaries and integrate national economies, cultures, technologies and governance and produces complex relations of mutual interdependence” (p.546).

Globalisation impacts both developing and developed nations and academics argue that globalisation is irreversible due to the increased pace and flow of people and information (Sun, Xu, He, Xiao & Niu, 2022). Bataka (2019) corroborates this by explaining that globalisation leads to the “formation of a single continent through erosion of national borders and integration of national economies, cultures, technologies, institutions, and governance and produces complex interdependencies” (p.134).

Moreover, globalisation facilitates technological and human capital transfer, enabling resource-rich nations to improve their productivity and competitiveness (Tamasauskiene & Žičkienė, 2021). By embracing international collaborations, these countries can acquire knowledge, skills, and expertise from more advanced economies, thereby enhancing their human capital and industrial capabilities (Sweidan & Elbargathi, 2022). This transfer of technology not only improves resource extraction and processing methods and drives advancements in other sectors, contributing to broader economic development (Leal & Marques, 2019). In order to quantify and measure globalisation across countries as defined above, the KOF Globalisation Index (KOFGI) can be utilised.

2.4.1 KOF Globalisation Index

The KOFGI is a composite index the KOF Swiss Economic Institute introduced to provide a more comprehensive and up-to-date measure of globalisation (Nguea et al., 2022). The index’s data is collected from a wide range of sources, including the World Bank, the International Monetary Fund, and the World Trade Organization (Gygli et al., 2019). The index is calculated annually and covers the period from 1970 to the present and is based on 43 variables (Sun et al., 2022).

The overall globalisation index is divided into three main subdimension namely, economic globalisation, social globalisation, and political globalisation (Noumba et.al., 2022).

2.4.2 Economic globalisation

The economic globalisation dimension captures the extent to which a country is integrated into the global economy through the flows of goods, services, capital, and technology. It includes indicators such as the value of exports and imports as a share of GDP, the number of multinational corporations (MNCs), foreign direct investment (FDI) and the stock of international patent applications (Noumba et.al., 2022). Table 2-1 shows that trade globalisation forms part of the economic globalisation subdimension.

The Trade War has targeted globalisation, which is rooted in the global economy's structural challenges that influence development across all sectors (An, Mikhaylov, & Richter, 2020). This shift away from a highly integrated world economy significantly influences economies and societies worldwide. Aspects including energy demand, trade in knowledge and technology, and the flow of financial capital have all been impacted by the Trade War, which has accelerated the trend of deglobalisation (An et.al., 2020).

2.4.3 Social globalisation

The social globalisation dimension captures the extent to which a country is integrated into the global society through the flow of information, people and culture (Gygli et al., 2019). It includes indicators such as the number of internet users, the number of international tourist arrivals, the number of students enrolled in tertiary education abroad, and the number of cultural exports (Nguea et al., 2022).

2.4.4 Political globalisation

The political globalisation dimension captures the extent to which a country is integrated into the global political system through the flows of ideas, norms, and institutions (Gygli et al., 2019). It includes indicators such as the number of international treaties it has signed, the number of international organisations a country is a member of, and the number of peacekeeping missions it participates in

(Nguea et al., 2022). Political institutions are crucial for financial development and stabilising the resource market (Asif et al., 2020).)

2.4.5 *De facto and De jure*

The KOFGI consists of *de facto* and *de jure* indices, providing a more comprehensive measure of globalisation that captures multiple aspects of the phenomenon, as shown in Table 2-1. The two sub-indices are complimentary and the *de jure* index can be viewed as an enabler (formal policies) that can lead to the *de facto* (actual outcomes of globalisation) (Leal & Marques, 2019).

The *de facto* index measures the actual degree of integration and connectedness between countries in the global economy, society, and politics (Bataka, 2019). It is based on empirical data that captures the flows of goods, services, capital, people, and ideas across borders. Examples of indicators in the *de facto* index include the value of exports and imports, the number of international telephone calls, the number of foreign tourists, and the number of international migrants.

On the other hand, the *de jure* index measures the extent to which countries have laws, regulations, and policies in place that facilitate globalisation (Tamasauskiene & Žičkienė, 2021). It is based on formal rules and policies that allow for the free flow of goods, services, capital, and people across borders. Examples of indicators in the *de jure* index include the number of bilateral investment treaties, the level of trade liberalisation, and the number of immigration agreements.

A detailed breakdown of the KOF Globalisation index structure is shown in Table 2-1. Each sub-index is given a weighting that reflects its relative importance in the overall globalisation including the various factors.

Table 2-1: Detailed KOF globalisation index structure

Globalisation Index, de facto	Weights	Globalisation Index, de jure	Weights
<i>Economic Globalisation, de facto</i>	33.3	<i>Economic Globalisation, de jure</i>	33.3
<i>Trade Globalisation, de facto</i>	50.0	<i>Trade Globalisation, de jure</i>	50.0
Trade in goods	38.8	Trade regulations	26.8
Trade in services	44.7	Trade taxes	24.4
Trade partner diversity	16.5	Tariffs	25.6
		Trade agreements	23.2
<i>Financial Globalisation, de facto</i>	50.0	<i>Financial Globalisation, de jure</i>	50.0
Foreign direct investment	26.7	Investment restrictions	33.3
Portfolio investment	16.5	Capital account openness	38.5
International debt	27.6	International Investment Agreements	28.2
International reserves	2.1		
International income payments	27.1		
<i>Social Globalisation, de facto</i>	33.3	<i>Social Globalisation, de jure</i>	33.3
<i>Interpersonal Globalisation, de facto</i>	33.3	<i>Interpersonal Globalisation, de jure</i>	33.3
International voice traffic	20.8	Telephone subscriptions	29.9
Transfers	21.9	Freedom to visit	32.7
International tourism	21.0	International airports	27.4
International students	19.1		
Migration	17.2		
<i>Informational Globalisation, de facto</i>	33.3	<i>Informational Globalisation, de jure</i>	33.3
Used internet bandwidth	37.2	Television access	36.8
International patents	28.3	Internet access	42.6
High technology exports	34.5	Press freedom	20.6
<i>Cultural Globalisation, de facto</i>	33.3	<i>Cultural Globalisation, de jure</i>	33.3
Trade in cultural goods	28.1	Gender parity	24.7
Trade in personal services	24.6	Human capital	41.4
International trademarks	9.7	Civil liberties	33.0
McDonald's restaurant	21.6		
IKEA stores	16.0		
<i>Political Globalisation, de facto</i>	33.3	<i>Political Globalisation, de jure</i>	33.3
Embassies	36.5	International organisations	36.2
UN peace keeping missions	25.7	International treaties	33.4
International NGOs	37.8	Treaty partner diversity	30.4

Source: Gygli et al., 2019, p.3

An overview of Table 2-1, including the dimensions of each index, is explained in the subsequent sections.

2.4.5.1 *De facto* Economic Globalisation

De facto economic globalisation consists of *de facto* trade globalisation and *de facto* financial globalisation (Sun et al., 2022). *De facto* trade globalisation assesses the economies and markets across borders, considering the volume and diversity of goods and services traded internationally and the trade partner diversity, which accounts for the geographical distribution of trade (Tamasauskiene & Žičkienė, 2021). Trade partner diversity emphasises countries that trade globally rather than countries that facilitate regional trade. The data is measured as a percentage of GDP. The *de facto* financial globalisation assesses how integrated and interconnected financial systems are on a global scale, considering factors such as foreign investments, portfolio investment, cross-border debt, reserves and income payments. The *de facto* financial globalisation is also measured using GDP and measures the genuine financial transactions and activities rather than just the theoretical or legal framework for international finance (Gygli et al., 2019).

2.4.5.2 *De jure Economic Globalisation*

Similar to the *de facto*, *de jure* economic globalisation consists of *de jure* trade globalisation and *de jure* financial globalisation. *De jure* trade globalisation assesses policies that promote trade between countries like trade taxes, regulations, tariffs and trade agreements (Sun et al., 2022). *De jure* financial globalisation assesses formal or legal framework that facilitates globalisation in the context of financial markets and capital flows across international borders, including investment restrictions, capital account openness and international investment agreements (Gygli et al., 2019). The number of agreements which promote potential capital flow is considered.

2.4.5.1 *De facto Social Globalisation*

De facto social globalisation consists of *de facto* cultural globalisation, *de facto* informational globalisation and *de facto* interpersonal globalisation. *De facto* cultural globalisation includes the actual number of IKEA stores, McDonald's restaurants, international trademarks and trade in cultural and recreational goods and personal services (e.g. museums, sports events and movies) (Sun et al., 2022). *De jure* informational globalisation measures the internet bandwidth usage, international patents and high technology exports, thereby providing an assessment of the actual transfer of knowledge, ideas and pictures (Tamasauskiene & Žičkienė, 2021). Lastly, *de jure* interpersonal globalisation

measures the actual interaction among people in different countries through international voice traffic, tourism, students and migration numbers (Gygli et al., 2019). Both inbound and outbound tourism and students are considered and are categorised as temporary migrants.

2.4.5.3 De jure Social Globalisation

Similarly, *de jure* social globalisation consists of *de jure* cultural globalisation, *de jure* informational globalisation and *de jure* interpersonal globalisation. Firstly, *de jure* cultural globalisation measures gender parity, human capital and civil liberties. These measurements provide an understanding of how open a country is toward foreign cultural influence and global cultural assimilation (Tamasauskiene & Žičkienė, 2021). Secondly, *de jure* informational globalisation measures the number of internet and television access and freedom of the press, which provides a view on the ability of a country to share information cross-borders (Sun et al., 2022). Lastly, the *de jure* interpersonal globalisation measures phone subscriptions, freedom to travel (travel restrictions) and movement of the population through international airports and visas (Gygli et al., 2019).

2.4.5.4 De facto Political Globalisation

The *de facto* political globalisation measures a country's number of embassies, participation in UN peacekeeping missions and the number of international non-governmental organisations (NGOs) (Gygli et al., 2019; Nguea et al., 2022). These measurements provide a view of a country's government policies.

2.4.5.5 De jure Political Globalisation

De jure political globalisation measures treaty partner diversity international organisation and international treaties which demonstrate a country's willingness for future relationship negotiations (Sun et al., 2022). These measurements demonstrate a country's willingness to participate in international political cooperation.

2.4.6 Economic Growth and Globalisation

As explained in Section 1.4, most studies around the resource curse are focused on economic growth. Hence, a focused overview of economic growth considering

globalisation is provided in the literature review based on the studies conducted by Bataka (2019) and Gygli et al. (2019).

Globalisation is anticipated to stimulate economic growth for various reasons, including international knowledge spillover and entrepreneurs' access to open economies (Gygli et al., 2019). Firstly, international knowledge spillover where cross-border knowledge is shared among individuals, which is facilitated by improved technology infrastructure, like the internet and cell phones, are arguably the most critical for information flow, which fosters economic growth (Gygli et al., 2019). Secondly, an entrepreneur initially only serves their domestic market. However, if the government eliminate tariffs and trade restriction, it opens the economies which allows for a larger optional market, therefore international trade and foreign investments are more enticing (Gygli et al., 2019).

Globalisation is a complex process that cuts beyond national borders and alters how economies, cultures, technologies, and governance operate on a global scale (Bataka, 2019). The globalisation index comprehensively assesses a country's integration into the global landscape.

2.5 Resource Curse Vulnerability and Globalisation Integration

As stipulated in Section 2.2, the initial studies around the resource curse phenomenon have been anchored purely around economic factors, showcasing the inverse relationship between economic performance and resource abundance (Biresselioglua et al., 2019). Biresselioglua et al. (2019) stated that further research and more profound insights are required regarding the implications of social, political and cultural implications which are captured by the KOF globalisation index.

Adams et al. (2019) conducted a study examining the role of multinational corporations (MNCs) as drivers of globalisation and their connection to the resource curse. The study emphasises the significance of international factors in this relationship and provides qualitative evidence that globalisation serves as a platform for the occurrence of the resource curse phenomenon. Furthermore, the resource industry is significantly influenced by the broader political-economic dynamics of financialisation and globalisation of modern MNCs and trade (Parker & Cox, 2018). The degree to which local industrial expansion aligns with rigorous

resource industry activity is contingent upon the management practices and strategies adopted by these MNCs, whose organisational organograms are progressively becoming more financialised and globalised (Parker & Cox, 2018). To prevent the resource curse, Parker and Cox (2018) have highlighted the importance of trade diversification and establishing connections between the resource industry and higher value-added industries both upstream and downstream. One of the most critical advantages of globalisation to resource-rich nations is the potential for diversification. Although the focus on economic diversification policies is familiar, few resource-rich nations have been able to successfully implement these policies and thereby dividing the resources revenue (Venables, 2016). Traditionally, these countries heavily rely on revenue generated from exporting natural resources, which can create vulnerabilities when resource prices fluctuate or demand decreases.

However, globalisation presents avenues for these nations to tap into other industries and sectors, promoting economic resilience and reducing their dependence on finite resources. By embracing global trade and investment, resource-rich countries can explore new markets, access cutting-edge technologies, and foster innovation to drive economic growth beyond their resource-based sectors.

Siakwah (2017) supports the argument that country-specific analysis and cross-sectional studies alone are insufficient in explaining the resource curse phenomenon, as they adopt a limited perspective focused on nationalism. To gain a comprehensive understanding, it is necessary to expand the traditional indicators of nationalism and consider globalisation and international interactions encompassing people, natural resources, technologies, institutions, and political actors (Siakwah, 2017). This broader view allows for a more insightful analysis of what drives the vulnerability of a country to the resource curse.

Another research study by Phillips, Hailwood, and Brooks (2016) has examined the unique political economies associated with oil in Africa, shedding light on the complex nature of oil governance. The study draws attention to the dominant technocratic perspective of the resource curse theory, which primarily focuses on analysing the phenomenon within a national context. In contrast, these new analyses reveal how local political dynamics, existing class relations, and instances

of "resource violence" are influenced by the transnational operations of the oil industry (Phillips et al., 2016).

Consequently, policy discussions regarding oil-led development often overlook the intricate nature of political processes, the interplay between state, capital, and class, as well as the agency involved in production and resource control, extending beyond centralised government or territorial national boundaries to encompass the global political economy of oil (Phillips et al., 2016). To gain a more comprehensive perspective, the KOF Globalisation Factor, which includes the political and economic subindexes, can aid in providing further views as recommended by Phillips et al. (2016).

With its complex web of international relationships and economic interdependencies, globalisation adds a dynamic element that can either worsen or lessen the problems brought on by the resource curse. While it is true that these nations may be more vulnerable to fluctuations in commodity prices and to the exploitation of transnational firms as a result of globalisation, it also creates unique opportunities that can result in profoundly good changes.

2.6 Conclusion

In conclusion, chapter two offered a review of the fundamental constructs and theories that form the basis for understanding the resource curse theory and its connection to globalisation. The evolution of the resource curse theory has been explored in this chapter, from the early optimism over resource-rich nations, including the discovery and relation of the Dutch disease. The chapter also pointed out the lack of academic consensus relating to the causes of the resource curse.

The RCVI has been established in the chapter as a crucial tool for assessing how susceptible a country is to the resource curse. The nine sub-indicators that comprise the RCVI have all been thoroughly discussed, along with the formula used to calculate the RCVI. Each sub-indicator represents a distinct aspect of governance, economic development, and social and political issues that affect a country's vulnerability to the resource curse.

The notion of globalisation and the KOF Globalisation Index (KOFGI) have also been established in this chapter to quantify and gauge a nation's integration into

the international economy, society, and politics. It has been demonstrated how the three primary subdimensions of globalisation (economic, social, and political) cross national boundaries and impacts a variety of aspects of a nation's growth.

The chapter has also shown how the resource curse and globalisation are intertwined, highlighting how while globalisation poses hazards, it also offers opportunities for countries with abundant natural resources. Globalisation has the ability to diversify industries, transfer technologies, and change institutional structures, which can help lessen the consequences of the resource curse and promote sustainable development.

In conclusion, this literature review has provided the platform for the following chapters and given the research at hand a solid theoretical foundation. To comprehend the intricacies of the resource curse phenomena and how globalisation can either increase or lessen its issues, it is crucial to consider both national and international aspects. The following chapters build on these pillars, detailing the research questions and hypotheses.

3. Chapter 3 - Research Questions and Hypotheses

3.1 Introduction

Chapter three introduces the core focus of the study, presenting the main research question and three sub-research questions derived from the comprehensive literature review in chapter two. These questions serve as the foundational framework for the research, guiding its exploration into the relationship between globalisation and a country's resource curse vulnerability. To gain valuable insights, a set of null and alternative hypotheses has been formulated for both the main research question and the three sub-research questions, examining how globalisation, encompassing its economic, social, and political dimensions, influences the vulnerability to the resource curse phenomenon. The study aims to deepen the understanding of the impact of globalisation on resource-rich countries' vulnerability to the resource curse, which enhances decision-making and policy formulation.

3.2 Research Questions

Based on the literature review in chapter two, the main research question arises due to the need to examine a country's vulnerability to the resource curse outside of the confines of traditional nationalism, taking into account globalisation, among other social, political, and cultural factors, as well as cross-border interactions (Adams et al., 2019; Siakwah, 2017).

Research Question: What is the impact of globalisation on the resource curse vulnerability of natural resource-rich countries?

Within the resource development, a key factor is the external focus on the economy considering transnational conditions and national independence (Phillips et al., 2016). Looking at it from a regional perspective, the impact of the resource curse can either be alleviated or exacerbated by trade and economic growth (Parker & Cox, 2018). This leads to the sub-research question focusing on economic globalisation in relation to vulnerability to the resource curse.

Sub-research question 1: Does the level of economic globalisation effect the resource curse vulnerability of natural resource-rich countries?

Adams et al. (2019) expand the conventional view of the resource curse by incorporating international dimensions related to globalisation, such as employment and human capital development, within a social context. This broader perspective emphasises the importance of human well-being concerning a country's vulnerability to the resource curse (Elmassah & Hassanein, 2022). Consequently, the sub-research question on social globalisation stems from the holistic view of human welfare in the context of a country's susceptibility to the resource curse.

Sub-research question 2: Does the level of social globalisation effect the resource curse vulnerability of natural resource-rich countries?

According to Adams et al. (2019), the globalisation of multinational corporations (MNCs) in the resource industry contributes to a country's resource curse vulnerability. International organisations serve as an indicator to assess political globalisation. Therefore, from a political perspective, the sub-question below was formulated. Siakwah (2018) supports this idea, emphasising that while analysing a country's political environment and its impact on natural resources is helpful, the interactions between multinational corporations, states, and local actors must be addressed to understand resource development fully.

Sub-research question 3: Does the level of political globalisation effect the resource curse vulnerability of natural resource-rich countries?

3.3 Hypotheses

A null hypothesis and an alternative hypothesis are provided for each of the four indices of globalisation that were studied, namely the overall globalisation index, index, the economic globalisation index, the social globalisation and the political globalisation index.

H1₀ – Null Hypothesis: There is no significant relationship between overall globalisation (*KOFGI*) and Resource Curse Vulnerability Index (RCVI).

H1_{Alt} – Alternative Hypothesis: There is a significant positive relationship between overall globalisation (*KOFGI*) and Resource Curse Vulnerability Index (RCVI).

H2₀ – There is no significant relationship between economic globalisation (*KOFECGI*) and Resource Curse Vulnerability Index (RCVI).

H2_{Alt} –There is a significant positive relationship between economic globalisation (*KOF*E*cGI*) and Resource Curse Vulnerability Index (RCVI).

H3₀ – There is no significant relationship between social globalisation (*KOF*S*oGI*) and Resource Curse Vulnerability Index (RCVI).

H3_{Alt} – There is a significant positive relationship between social globalisation (*KOF*S*oGI*) and Resource Curse Vulnerability Index (RCVI).

H4₀ – There is no significant relationship between political globalisation (*KOF*P*oGI*) and Resource Curse Vulnerability Index (RCVI).

H4_{Alt} – There is a significant positive relationship between political globalisation (*KOF*P*oGI*) and Resource Curse Vulnerability Index (RCVI).

3.4 Conclusion

Answers to the research questions and hypotheses formulated in this chapter serve as a stepping-stone toward comprehending the interplay between globalisation and resource curse vulnerability. Chapter four details the research methodology used to obtain the required result for the study.

4. Chapter 4 –Research Methodology

4.1 Introduction

Saunders and Lewis (2018) propose using the research onion to illustrate the research process, which begins with the outermost layer of philosophy and proceeds inward to the theory development approach, methodological choice, research purpose, research strategy, time horizon, and finally, procedures and techniques.

4.2 Research Design Choice

4.2.1 Philosophy

According to Saunders and Lewis (2018), research philosophy pertains to knowledge development and its nature in research. In this study, the chosen research philosophy was positivism, as it aligns with the empirical and factual nature of the research topic. Positivism involves the use of analytics to identify the causes and effects of real-world problems (Denscombe, 2021). It was characterised by its scientific and highly structured approach, emphasising replicability and minimising subjectivity (Joullié & Gould, 2023; Saunders & Lewis, 2018).

4.2.2 Theory Development Approach

There are three approaches to theory development, namely abduction, induction, and deduction (Saunders & Lewis, 2018). The deductive approach was used in this study. It involves testing hypotheses based on an existing theory through research strategies (Al-Ababneh, 2020).

Saxena (2019) and Denscombe (2021) both agree that positivism is mainly associated with the deductive approach, using quantitative methods to test hypotheses on existing theories such as the resource curse theory.

4.2.3 Methodological Choice

Given the constraints of time and resources, a mono-method quantitative approach was chosen as the most appropriate for the study. A single data collection

technique was deemed suitable for the study due to its large-scale nature and research problem, as suggested by Al-Ababneh (2020) and Saunders and Lewis (2018).

4.2.4 Purpose of Research Design

The research design of this study was descripto-explanatory, which combined descriptive and explanatory research purposes (Saunders & Lewis, 2018). This approach was used to describe the characteristics of the variables and to determine the causal relationship between these variables, including the vulnerability of countries to the resource curse and the various sub-indices of globalisation (Al-Ababneh, 2020; Rahi, 2017; Roberts-Lombard & Petzer, 2018).

4.2.5 Research Strategy

The research utilised a quantitative approach as the research strategy using secondary data. This method has been applied in prior quantitative studies that examine globalisation and resource curse vulnerability, as shown in the Consistency Matrix in Appendix A. Due to the complexity and sensitivity of the macro-level study, secondary data was the most appropriate data source as it is often challenging to access key stakeholders such as top government officials or senior management of multinational institutions (Ruggiano & Perry, 2019).

Various previous studies collected secondary data from reliable sources to establish a link between globalisation and resource curse-related indicators. The first example is a study that examined the effect of globalisation on economic sophistication for 27 countries over 21 years using most of the databases that the research used for this study (Nguea et al., 2022). Similarly, another study collected secondary data, including nine variables to determine a country's resource curse vulnerability index, data was collected from 55 countries over 10 years (Biresselioglua et al., 2019). Lastly, another study analysed the effect of globalisation, human development and resource rent for 49 African countries over 17 years using secondary data (Noumba et al., 2022).

To ensure the validity and reliability of the secondary data, the researcher obtained the data from open databases used in the studies mentioned above, including the KOF Globalisation Index, the UNDP's Human Development Reports, the

Transparency International Corruption Perceptions Index, and the World Bank's database (Biresselioglua et al., 2019; Nguea et al., 2022; Noumba et al., 2022). If there were discrepancies in the data, it was cross-checked with other sources, clear explanations were obtained, or the data was not used.

4.2.6 Time Horizon

A cross-sectional design was used to collect secondary data only once for analysis due to the time limitation of the study. Saunders and Lewis (2018) define the time horizon of a cross-sectional study as a one-time collection of data at a specific point in time rather than over a period in the past or future.

4.3 Research Methodology

4.3.1 Population

According to Rahi (2017), a population refers to the entire group that is being studied. For this research, the population consisted of countries based on the available data. Since the study used secondary data for the quantitative analysis, both the population and sample size were significantly large.

4.3.2 Unit of Analysis

According to Kumar (2018), the success of a study depends on defining the appropriate unit of analysis based on the nature of the research. Since the study was focused on a macro level, the unit of analysis had been determined as a country. This decision was consistent with the approach used in three similar previous studies (Biresselioglua et al., 2019; Nguea et al., 2022; Noumba et al., 2022), as outlined in Section 4.2.5, which also employed countries as the unit of analysis.

4.3.3 Sampling method and sampling size

Due to the study's reliance on secondary data, a large sample was used to extract as much information as possible for each country (Rahi, 2017). Probability sampling has been chosen as the sampling method since it ensures that each country has an equal chance of being selected, aligning with the study's nature (Rahi, 2017).

The availability of information for a given period in the databases determined the sample size. Based on three previous quantitative studies that also used secondary data, the sample size was expected to range from 27 to 55 countries, depending on the amount of data available in the databases for a specific period. The goal was to obtain the largest possible sample size based on the availability of information in the databases.

Since the resource curse theory is focused on resource-rich countries, the sample size (list of countries) was refined using an average over the period for the resource rent threshold of 1 billion USD per year (Biresselioglua et al., 2019). The annual resource rent level (*RRL*) was calculated using Equation 11:

$$RRL \text{ (Current US\$)} = \frac{\text{Total natural resources rents (\% of GDP)} \times \text{Annual GDP (US\$)}}{100} \quad (11)$$

4.3.4 Measurement instrument

To collect data for the study, multiple secondary data sources were used to obtain a snapshot of the countries at a specific time. Secondary data as the measurement instrument was the most suitable due to time, resource and accessibility constraints (Saunders & Lewis, 2018). Raw data, as well as compiled data, were collected, with the latter being data that had already been summarised or analysed, such as composite indices for each country. The use of multiple secondary data sources provided access to large datasets, making it appropriate for a macro-level study across multiple countries.

4.3.5 Data gathering process

4.3.5.1 Dependent variable - RCVI

The resource curse vulnerability index (RCVI) was the first of two composite indexes used in this study. The RCVI was recreated for the study, using the same method used by Biresselioglua et al. (2019) to recalculate RCVI, which resulted in an average RCVI for 55 countries over 10-years, starting from 2005. However, the study calculated the results for each country per year and not just as an average over the period. The nine indicators used were normalised to overcome unit differences and scaling, which provide each RCVI indicator's relative index. The composite RCVI was calculated using the root mean square of the nine relative

indicators to produce a combined score per country per year. The index measured the susceptibility of a country to the resource theory curse, with a higher index indicating a higher vulnerability (Biresselioglua et al., 2019). The compiled average data over the period was available in the article, while the raw data was based on nine indicators from various open-source databases, including government effectiveness, GDP growth, rule of law, political stability, voice and accountability, natural resource rent, human development level, fragile state, and transparency level (Biresselioglua et al., 2019) As explained in Section 2.3 as part of the literature review section, each indicator was explained along with their respective equations. The nine indicators were available per country from the World Bank's database, the Transparency International's Corruption Perception, UNDP, and the Centre for Systemic Peace (Biresselioglua et al., 2019).

Therefore, the RCVI was calculated and provided an overall score per country per year, which could be used to rank countries regarding their vulnerability to the resource curse.

4.3.5.2 Independent variables

The KOF Globalisation Index (KOFGI) was the second composite index used in this study. The KOFGI was used to measure the overall level of globalisation for each country while distinguishing between three dimensions: social, political, and economic (Gygli et al., 2019). The index is based on 43 variables and provides two categories, *de facto* (international activities and flow) and *de jure* (conditions and flow to facilitate activities and flow), allowing for an analysis of each dimension within each category of globalisation for each country (Gygli et al., 2019). The index has been calculated yearly since 1970 for 203 territories and countries and was available online for download in Excel format per country over a period (Gygli et al., 2019).

The KOFGI has been used in other studies as the independent or explanatory variable. Firstly, the KOFGI was used as an independent variable along with resource rents concerning the human development index (Noumba et al., 2022). A final example is the study conducted on African countries by Nguea et al. (2022), considering the effects of globalisation on economic sophistication, which used KOFGI as the independent variable. The KOFGI was considered overall along with its main three sub-dimensions, namely economic, social and political.

4.3.5.3 Control variables

To address the commonly known bias caused by omitted variables, the specified empirical model included control variables, namely the Gini coefficient and population growth rate.

Firstly, the Gini coefficient indicates the distribution or inequality of income across a specified population. The Gini coefficient was available per country per year on the World Wealth and Income Inequality Database as open-source information (United Nations, n.d.). Countless studies have discussed the link between inequality and the natural resource endowment of resource-based economies (Nademi, 2018). The abundance of natural resources may reduce and generate wealth for all citizens, thereby reducing inequality, on the other hand, other researchers had indicated that it could possibly enhance inequality (Bahar & Santos, 2018; Nademi, 2018).

Secondly, similarly to another study, to control for other potential determinants of vulnerability to the resource curse, population growth rate was used as a control variable (Nguea et al., 2022). The population growth (annual %) was available per country per year on the World Bank database as open-source information. The population was determined based on the *de facto* definition, encompassing all individuals residing in a particular area, irrespective of their legal status or citizenship.

The Gini coefficient and population growth rate were used as control variables since these indicators are not considered as part of the indicators as part of the RCVI index (dependent variable).

4.3.6 Analysis approach

The data collected from various databases were consolidated in a Microsoft Excel spreadsheet. To ensure the integrity and quality of the data, a data cleaning process was applied, as not all variables for each country were available for the given time period. Missing data points were dealt with using a similar method to Gygli et al. (2019), whereby the closest available data point was used for missing data points at the beginning or end of a series, and linear interpolation was used for missing data points within the data set. Once the reliability and relevance were

confirmed, the dataset was analysed using the statistical software *R* and the package *plm* was used to fit the models and perform testing procedures. The *plm* package provides a complete solution offering various data transformation tools including, fixed and random effect estimators for static and variable coefficients (Croissant, & Millo, 2008).

4.3.7 Model Specification

4.3.7.1 Dynamic Models

The dynamic model specification is expressed as shown in Equation 12 to investigate the effect of globalisation on the resource curse vulnerability index.

$$RCVI_{it} = \theta + \beta_1 RCVI_{it-1} + \beta_2 GLO_{it} + \beta_3 CV_{it} + \varepsilon_{it} \quad (12)$$

Where $RCVI_{it}$ is the Resource Curse Vulnerability Index of country i in period t ; $RCVI_{it-1}$ the lagged dependent variable; GLO_{it} is a vector of different types of globalisation indexes; CV_{it} represents the control variables that may explain resource curse vulnerability namely; Gini coefficient and population growth rate. θ is a constant and ε is the error term.

4.3.7.2 Static models

The static model specification is expressed as shown in Equation 13 to investigate the effect of globalisation on the resource curse vulnerability index. The lagged dependent variable ($RCVI_{it-1}$) is not included in the static model.

$$RCVI_{it} = \theta + \beta_2 GLO_{it} + \beta_3 CV_{it} + \varepsilon_{it} \quad (13)$$

4.3.8 Descriptive Statistics

The dataset was analysed using R software (*plm* package) to perform descriptive statistics, including types of variables, frequency, standard deviation, minimum and maximum values (Kaur, Stoltzfus & Yellapu, 2018).

4.3.9 Hypothesis testing and Estimation Strategy

The selection of appropriate statistical tests depends on the data and the research questions being investigated (Ong & Puteh, 2017). Descriptive statistics were

determined as part of inferential statistics to test the hypotheses based on the data (Kaur et al., 2018; Saunders & Lewis, 2018). Significant testing was performed on all outcomes to determine whether the observed results were statistically significant or have occurred by chance (Saunders & Lewis, 2018).

The Generalised Method of Moments (GMM) estimations were done on the data set based on the two similar studies as explained in Section 4.3.3. The system GMM is also referred to as the Blundell and Bond (1998), which developed the estimator. System GMM was also used because it can deliver robust findings in the presence of heteroscedasticity and autocorrelation (Osei,2023). Another motivation for using the system GMM is that the number of sampled countries (69) is greater than the total number of time series (11). Using the R package software, the dynamic models employ the system GMM, while for static models, the Hausman test determines whether the fixed or random effect models are used (Amini, Delgado, Henderson, & Parmeter, 2012).

4.3.10 Quality assurance

To ensure the validity and reliability of the study, the researcher used multiple databases from recognised institutions. Additionally, the data was cross-checked with other sources to ensure accuracy. In cases where discrepancies arise, clear explanations were obtained, or the data was not used (Olabode, Olateju, & Bakare, 2019).

4.3.11 Limitations

The use of secondary data in this study posed certain limitations, the original purpose of data collection may not align with the research objectives. Additionally, discrepancies could arise due to differences in definitions and expectations of the data from various sources (Saunders & Lewis, 2018). Similarly, statistical tests used in the study may also have limitations depending on the type of data analysed. Since the collection of some of the indicators in the RVCI composite index, for example, voice and accountability was obtained through qualitative methods, some of the sub-indicators collected via a survey could possibly have unconscious biases (Ruggiano & Perry, 2019).

4.4 Conclusion

In conclusion, this research approach was directed by the research onion model as it moved through a systematic research process. It started with a definite positivist perspective, in line with the empirical and factual nature of the research issue. The resource curse theory was used as the existing theory that was tested using the deductive theory development method. Given the study's immense scope and resource limitations, the mono-method quantitative approach methodological path was deemed appropriate.

The descripto-explanatory study design, which explored the intricacies of globalisation's impact on resource curse vulnerability, smoothly merged descriptive and explanatory aims. Data integrity was assured by using secondary data from trustworthy sources, which were then cross-checked. Despite some limitations, this research provides a significant step towards understanding the complex connection between globalisation and resource curse susceptibility, providing the groundwork for subsequent research and policy interventions in resource-rich nations.

5. Chapter 5 –Results and Findings

5.1 Introduction

This chapter presents the findings based on the data collected from open-source information as secondary data. The final dataset of selected countries was determined based on the availability of data from the sources.

The chapter starts by providing the RCVI results, followed by the descriptive statistics, which explain the data sample of the selected countries. After that, the model results are provided for both the dynamic and static models, along with the results of the diagnostic test completed on the dataset. All results were rounded to the closest second decimal place.

5.2 RCVI results

In the context of this study's country selection process, data comprising nine subindices for the RCVI was collated from the aforementioned sources. However, it became evident that data availability for distinct countries and indicators spanned different time periods. Notably, the most comprehensive dataset covered the period from 2005 to 2015, encompassing complete data for all nine indicators across 127 countries. Given the resource curse's definition in relation to a country's natural resource abundance, a threshold was employed, as explained in Section 4.3, Equation 11. Therefore, the resource rent level (*RRL*) was utilised to narrow down the selection of countries. The *RRL* threshold was \$1 billion as the average for the period.

As a result, the number of countries that constitute the sample was 71 countries. Based on the availability of the data for the control variables, the selected countries were reduced from 71 as stipulated for the RCVI calculations to 69 resource-rich countries.

The RCVI was calculated per year per country for the 69 resource-rich countries. Table 5-1 shows the RCVI average and standard deviation of each country, ranked in the table based on the RCVI average. The higher the RCVI, the more vulnerable a country is to the resource curse. On the other hand, the lower the RCVI value, the less vulnerable a country is to the resource curse.

Table 5-1: RCVI per country

Country	RCVI Average	RCVI Std Dev
Chad	0.68	0.04
Yemen, Rep.	0.67	0.03
Angola	0.66	0.04
Nigeria	0.64	0.03
Iran, Islamic Rep.	0.61	0.02
Turkmenistan	0.58	0.04
Azerbaijan	0.58	0.03
Uganda	0.58	0.01
Iraq	0.58	0.03
Syrian Arab Republic	0.57	0.06
Libya	0.57	0.05
Algeria	0.57	0.03
Egypt, Arab Rep.	0.56	0.01
Gabon	0.56	0.03
Uzbekistan	0.56	0.03
Bangladesh	0.55	0.02
Pakistan	0.54	0.02
Myanmar	0.54	0.00
Mozambique	0.53	0.01
Zambia	0.52	0.03
Kenya	0.52	0.01
Saudi Arabia	0.52	0.03
China	0.52	0.02
Ecuador	0.52	0.03
Ethiopia	0.51	0.02
Bolivia	0.51	0.03
Russian Federation	0.51	0.02
Kazakhstan	0.51	0.02
Mongolia	0.50	0.03
Burkina Faso	0.50	0.03
Cameroon	0.49	0.01

Country	RCVI Average	RCVI Std Dev
Peru	0.49	0.03
Oman	0.49	0.02
Indonesia	0.49	0.04
Papua New Guinea	0.48	0.03
Philippines	0.48	0.02
India	0.48	0.02
Bahrain	0.47	0.02
Colombia	0.47	0.03
Ghana	0.47	0.02
Tanzania	0.45	0.01
Morocco	0.45	0.02
Thailand	0.44	0.02
South Africa	0.44	0.01
Mexico	0.44	0.01
Tunisia	0.43	0.02
Turkiye	0.42	0.02
United Arab Emirates	0.41	0.04
Ukraine	0.40	0.01
Brazil	0.40	0.02
Trinidad and Tobago	0.39	0.02
Qatar	0.38	0.04
Argentina	0.36	0.01
Malaysia	0.35	0.02
Chile	0.32	0.03
Poland	0.29	0.04
Italy	0.27	0.01
France	0.25	0.02
Japan	0.25	0.04
Germany	0.21	0.03
United Kingdom	0.18	0.03
Australia	0.18	0.03
New Zealand	0.16	0.04

Country	RCVI Average	RCVI Std Dev
Netherlands	0.16	0.03
Canada	0.15	0.03
Norway	0.14	0.03
Sweden	0.13	0.03
Denmark	0.13	0.03
Finland	0.12	0.03

Source: Author's own.

Accordingly, the average RCVI over the 11 years for all the countries in the analysis is shown in Figure 5-1.

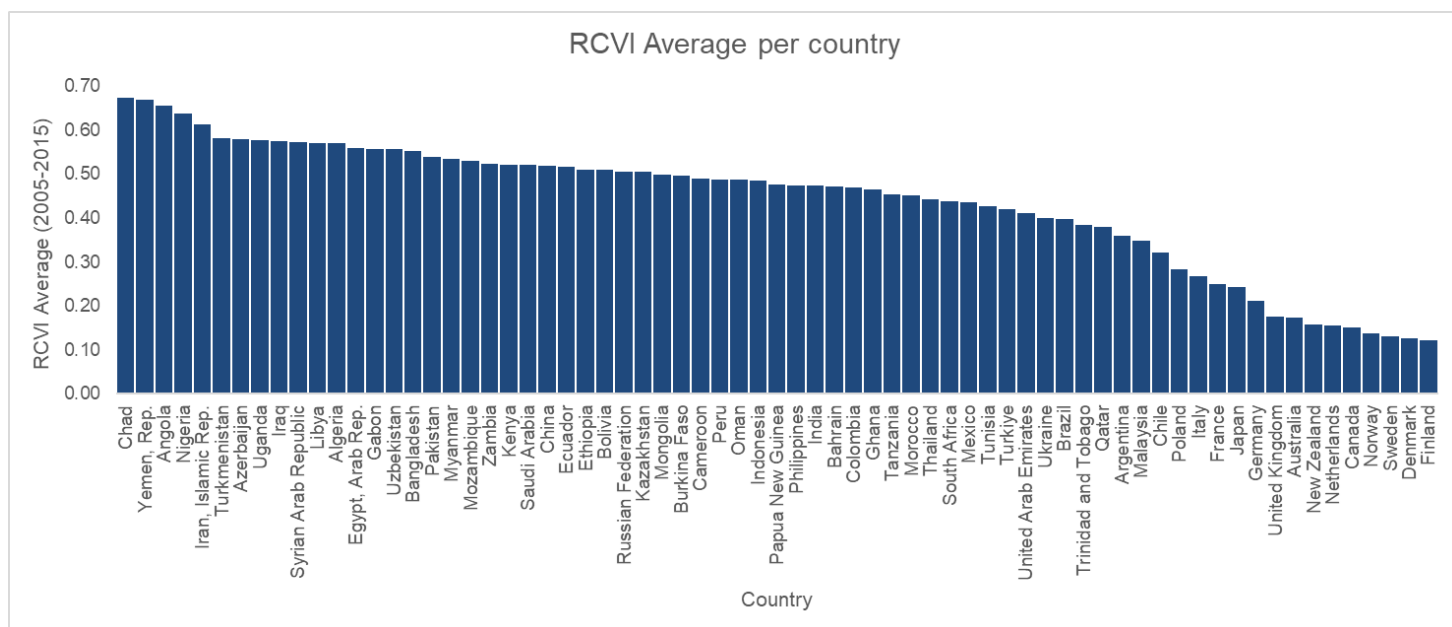


Figure 5-1: RCVI average of selected countries over the 11-year period

Source: Author's own.

The average and standard deviation RCVI for the selected countries were calculated from 2005 to 2015 at 0.43 and 0.14, respectively. Examining the standard deviations in the RCVI for individual countries revealed that the analysis results remained consistently stable throughout the entire period.

According to the study's results, a high-average-RCVI is defined as those countries with an average RCVI value of at least 0.40 during an 11-year period, while

medium-average-RCVI countries are classified with an average index between 0.15 and 0.40 (Biresseolioglua et al., 2019). Low-average-RCVI countries are the remaining nations with an average RCVI equal to or below 0.15. A breakdown of the 69 countries listed in Table 5-1 indicates that 48 countries were categorised as high-average-RCVI, 16 countries as medium-average-RCVI and lastly, 5 countries as low-average-RCVI.

5.2.1 High-average-RCVI

Table 5-1 and Figure 5-1 show countries with a high-average-RCVI of above 0.40. The top five countries that are the most vulnerable to the resource curse are Chad (RCVI = 0.68), Yemen (RCVI = 0.67), Angola (RCVI = 0.66), Nigeria (RCVI = 0.64) and Iran (RCVI = 0.61). The last countries classified within the high-average-RCVI group are Ukraine (RCVI = 0.40) and Brazil (RCVI = 0.40).

5.2.2 Medium-average-RCVI

Table 5-1 and Figure 5-1 show countries with a medium-average-RCVI between 0.40 and 0.15. The top five countries that are the most vulnerable to the resource curse within the medium RCVI category are Trinidad and Tobago (RCVI = 0.39), Qatar (RCVI = 0.38), Argentina (RCVI = 0.36), Malaysia (RCVI = 0.35) and Chile (RCVI = 0.32). The last country classified within the medium-average-RCVI group is the Netherlands (RCVI = 0.15).

5.2.3 Low-average-RCVI

Table 5-1 and Figure 5-1 show countries with a low-average-RCVI equal to or below 0.15. The five countries that are the least vulnerable to the resource curse are Canada (RCVI = 0.15), Norway (RCVI = 0.14), Sweden (RCVI = 0.13), Denmark (RCVI = 0.13) and Finland (RCVI = 0.12).

An analysis of the selected resource-rich countries based on the RCVI ranking per year showcases several upward or downward trends over the period (2005-2015), which countries could either experience for the short or long-term, as shown in Figure 5-2. Example countries include Azerbaijan, Angola, Libya, Syrian Arab Republic, United Arab Emirates, Oman and Qatar.

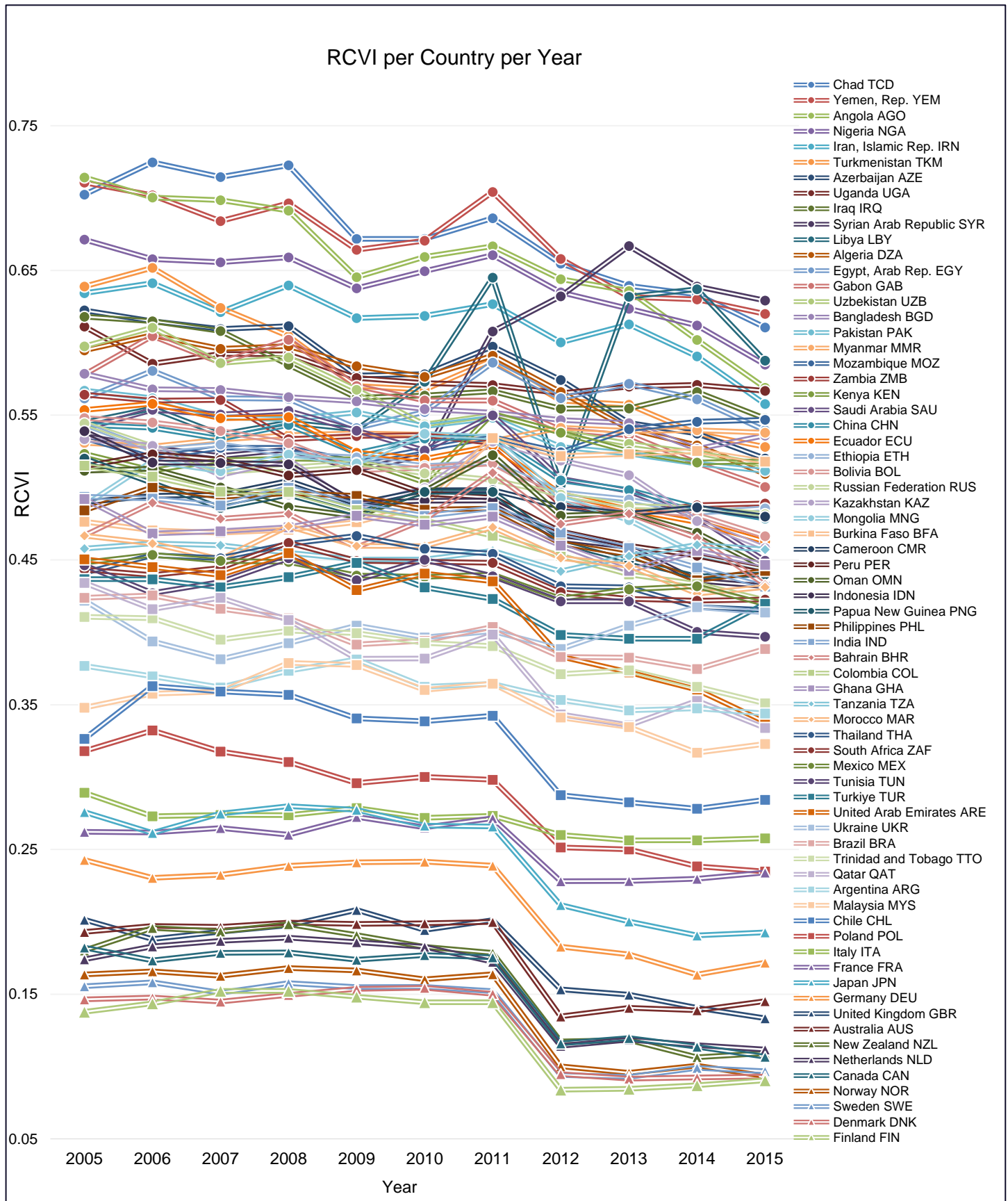


Figure 5-2: Selected countries' RCVI ranking over the period.

Source: Author's own.

Overall, Figure 5-2 shows that for the 11-year period, the RCVI per country has been gradually declining. Figure 5-3 confirms the downward trend for the 11-year period of the average RCVI from 2005 to 2015. The downward trend is corroborated by Venables (2016), arguing that in recent years there has been improvement in the quality of governance, transparency and economic management, thereby improving economic performance and making countries less susceptible to the resource curse. Similarly, von Haldenwang and Ivanyna (2018) argued that resource-dependent countries were less susceptible to the resource curse in the 2000s compared to the 1900s.

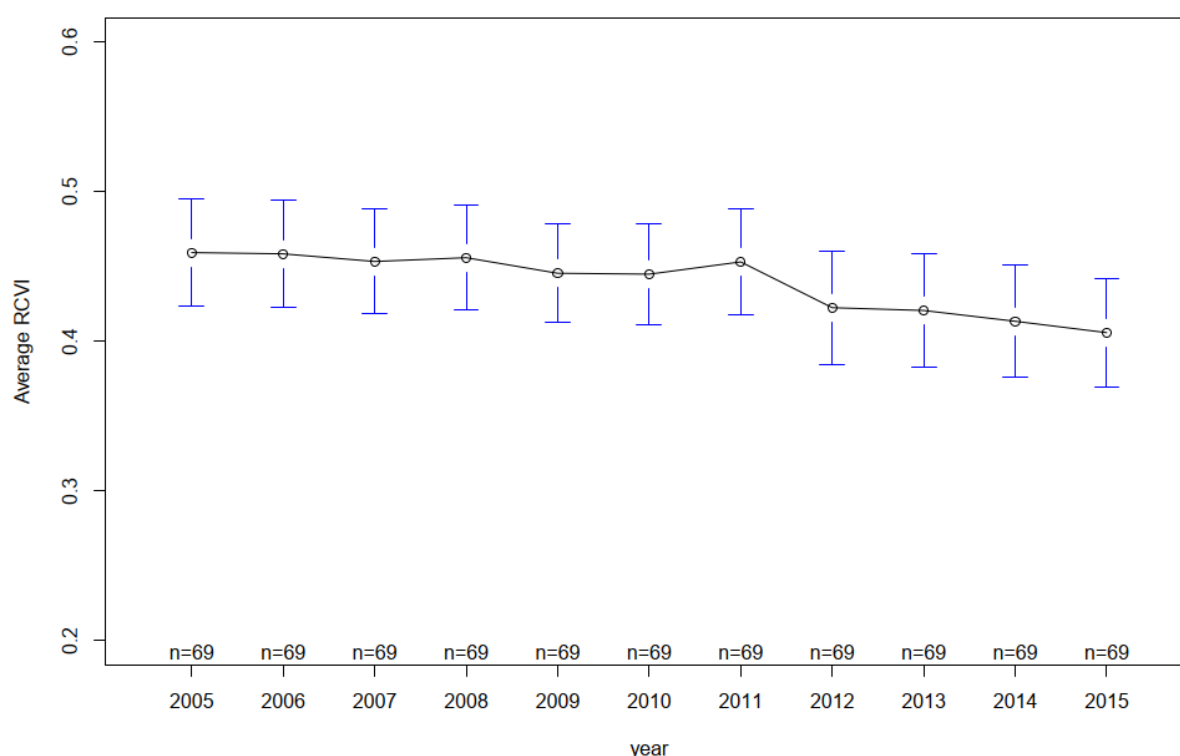


Figure 5-3: Selected countries' average RCVI over the period

Source: Author's own.

Additionally, exploratory plots for RCVI (Figure 0-1 till Figure 0-6) against the overall globalisation, the globalisation subindices, and the control variables (Gini coefficient and population growth rate percentage) are shown in Appendix B: Exploratory plots of RCVI.

5.3 Variable Summary

The descriptive statistics are summarised in Table 5-2, along with the source data for each variable, including the sub-indices for globalisation (KOF) and the sub-indices used to calculate RCVI. The table includes the nine relative indexes used to calculate RCVI.

Table 5-2: Descriptive Statistics

Variable	n	Mean	Std.Dev.	Min	Max	Source
RCVI	69	0.43	0.14	0.09	0.72	N/A
KOFGI	69	62.66	14.17	32.37	91.07	(KOF Swiss Economic Institute, n.d.)
KOFEcGI	69	55.53	15.41	27.04	89.54	(KOF Swiss Economic Institute, n.d.)
KOFSoGI	69	58.09	18.91	15.81	90.65	(KOF Swiss Economic Institute, n.d.)
KOFPoGI	69	74.34	16.43	32.45	98.06	(KOF Swiss Economic Institute, n.d.)
Population Growth	69	1.83	2.10	-6.85	19.36	(World Bank, n.d.)
Gini coefficient	69	0.58	0.09	0.38	0.76	(United Nations, n.d.)
RCVI Indicators						
Government Effectiveness	69	0.02	0.99	-1.73	2.35	(World Bank, n.d.)
GDP growth	69	4.48	6.08	-50.34	86.83	(World Bank, n.d.)
Rule of Law:	69	-0.10	1.03	-1.84	2.12	(World Bank, n.d.)
Political Stability	69	-0.31	1.00	-2.97	1.59	(World Bank, n.d.)
Voice and Accountability	69	-0.22	1.06	-2.26	1.74	(World Bank, n.d.)
Natural resources rents	69	13.36	14.34	0.01	68.05	(World Bank, n.d.)

Variable	n	Mean	Std.Dev.	Min	Max	Source
Human Development Level	69	0.70	0.16	0.33	0.95	(UNDP, n.d.)
Fragile State	69	8.63	5.97	0.00	21.00	(Center of Systemic Peace, n.d.)
Transparency	69	18.38	23.00	1.30	92.00	(Transparency International, n.d.)
RCVI Relative Index						
Government Effectiveness:	69	0.43	0.24	0.00	1.00	N/A
GDP growth	69	0.40	0.04	0.00	1.00	N/A
Rule of Law:	69	0.44	0.26	0.00	1.00	N/A
Political Stability	69	0.58	0.22	0.00	1.00	N/A
Voice and Accountability	69	0.51	0.26	0.00	1.00	N/A
Total natural resources rents	69	0.80	0.21	0.00	1.00	N/A
Human Development Level	69	0.60	0.25	0.00	1.00	N/A
Fragile State	69	0.59	0.28	0.00	1.00	N/A
Transparency	69	0.19	0.25	0.00	1.00	N/A

Source: Author's own.

The average and standard deviation KOFGI for the selected countries were calculated from 2005 to 2015 at 62.66 and 14.17, respectively. The highest average contributor for the KOFGI is the KOFPoGI at 74.34, while the lowest average is KOFecGI at 62.66. The high standard deviations for KOFGI and its

subdimensions indicate that the data points are more spread out from the mean compared to RCVI and the control variables, namely Gino coefficient and the population growth rate. The highest average of the RCVI relative indices is for the natural resource rents (%of GDP) at 0.8, while the lowest relative index is transparency at 0.19.

5.4 Model results

This section summarises data testing along with the dynamic and static model results.

5.4.1 Data testing

Two diagnostic tests in the context of panel data analysis were performed on the dataset, namely the Breusch-Godfrey/Wooldridge test for serial correlation (also known as the Breusch-Godfrey LM test) and the Pesaran CD test for cross-sectional dependence (Nguea et al., 2022). These tests are used to assess the assumptions of independence and homoscedasticity in panel data models. The results for both tests are shown in Table 5-3.

Table 5-3: Data testing

Tests	Test statistic	p-value
Breusch-Godfrey/Wooldridge test for serial correlation	$\chi^2 = 255.68$	<0.0001
Pesaran CD test for cross-sectional dependence	Z = 53.84	<0.0001

Source: Author's own.

The Breusch-Godfrey/Wooldridge test resulted in the test statistic Chi-square (χ^2) of 255.68, indicating a substantial deviation from the expected values under the null hypothesis. The p-value is very small ($p < 0.0001$), indicating strong evidence against the null hypothesis. Therefore, the results suggest a significant serial correlation in data. In other words, the values in the time series are not independent and exhibit some degree of correlation with their past values.

The Pesaran CD test resulted in a large test statistic (Z-score = 53.84) and a very low p-value ($p < 0.0001$). This indicates strong evidence against the null hypothesis, suggesting significant cross-sectional dependence in the panel data. In

practical terms, this means that the observations in the dataset are not independent; the observations are influenced by factors shared across the cross-sectional units (e.g., countries).

In both tests, the small p-values (< 0.0001) suggest that the test results are highly significant, indicating the presence of serial correlation in the time series data and cross-sectional dependence in the panel data. The researcher accounted for these issues in the analyses and modelling. To ensure the validity of the results, robust covariance estimation was used for both the static and dynamic models. This corrects the covariance matrix and therefore, also p-values in the presence of heteroskedasticity and, to some extent, for serial correlation. Therefore, since robust covariance estimation was used, a test for heteroscedasticity was not necessary (Croissant & Millo, 2008).

5.4.2 *Dynamic model*

For the dynamic models, the Blundell and bond estimator were employed. This model did not produce significant results for the relationship between RCVI and overall KOFGI, as shown in Table 5-4. In hypothesis testing, the large p-value of 0.25 suggests that the effect is not statistically significant as it is above 0.05.

Table 5-4: Dynamic model results effect of overall KOFGI on RCVI (dependent variable)

	Estimate	Std. Error	z-value	Pr(> z)
Lag RCVI, 1	0.92	0.06	14.91	<0.0001
KOFGI	-0.00	0.00	-1.15	0.25
Population Growth	0.00	0.00	1.23	0.22
Gini-coefficient	-0.08	0.04	-2.13	0.03

Source: Author's own.

To ensure no relationship between KOFGI and RCVI when accounting for dynamics over time for RCVI, a model was fit with KOFGI broken down into KOFEcGI, KOFSoGI and KOFPoGI. This model still showed no significant relationship between the three KOFGI subindices, as shown in Table 5-5. The large

p-values for KOFecGI, KOFSoGI and KOFPoGI of 0.38, 0.33 and 0.41, respectively, suggest that the effect is not statistically significant as it is above 0.05.

Table 5-5: Dynamic model results effect of KOFGI subdimension on RCVI (dependent variable)

	Estimate	Std. Error	z-value	Pr(> z)
Lag RCVI, 1	0.91	0.08	10.73	0.00
KOFecGI	-0.00	0.00	-0.88	0.38
KOFSoGI	-0.00	0.00	-0.98	0.33
KOFPoGI	-0.00	0.00	-0.82	0.41
Population Growth	0.00	0.00	1.11	0.27
Gini-coefficient	-0.06	0.04	-1.45	0.15

Source: Author's own.

Figure 5-4 plots the sample of 69 resource-rich countries, illustrating the relationship between the average values of overall globalisation (KOFGI) and the average RCVI.

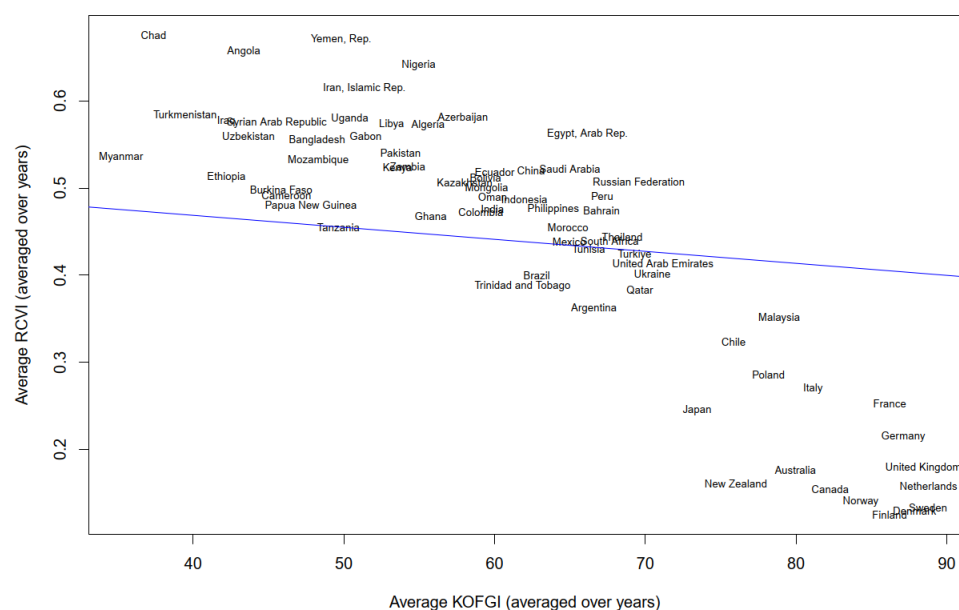


Figure 5-4: Blundell and Bond estimator for dynamic model fit (KOFGI)

Source: Author's own.

respectively, have a negative (downward slope) effect, indicating that the independent variable increase the dependent variable (RCVI) will decrease.

5.4.3 Static model

For the static model, a Hausman test was conducted to determine where a fixed effects model or random effect model should be used (Amini et al., 2012). Both these models are typical for panel data, which involves data collected over multiple time periods and for multiple entries e.g. countries in this study.

The results are shown in Table 5-6, a chi-square statistic denoted by χ^2 was calculated at 23.74, with a p-value of less than 0.0001.

Table 5-6: Hausman test results

Test	Test statistic	p-value
Hausman test	$\chi^2 = 23.74$	<0.0001

Source: Author's own.

The small p-value, which is less than 0.05, indicates that the Hausman Test null hypothesis was rejected, which suggests that the random effect model is not appropriate and the fixed effect model is preferred. In other words, there is evidence that the entity-specific effect correlated with the explanatory variables.

This model did indicate statistically significant results for the relationship between KOFGI and RCVI as shown in Table 5-7, however, does not account for the dynamics in the data. The p-value below 0.05 indicates that the effect is statistically significant.

Table 5-7: Fixed effect static model results effect of overall KOFGI on RCVI (dependent variable)

	Estimate	Std. Error	t-value	Pr(> t)
KOFGI	-0.01	0.00	-11.17	0.00
Population Growth	-0.00	0.00	-0.63	0.53
Gini-coefficient	-0.04	0.07	-0.50	0.61

Source: Author's own.

A model was constructed, where the KOFGI was further subdivided into three components: KOFecGI, KOFSoGI, and KOFPoGI. This model still showed a significant relationship between the three KOFGI sub-components and RCVI as shown in Table 5-8. The p-values below 0.05 for each subindex indicate that the effects are statistically significant.

Table 5-8: Fixed effect static model results effect of KOFGI subdimension on RCVI (dependent variable)

	Estimate	Std. Error	t-value	Pr(> t)
KOFecGI	0.00	0.00	4.04	0.00
KOFSoGI	-0.00	0.00	-9.20	0.00
KOFPoGI	-0.00	0.00	-4.66	0.00
Population Growth	-0.00	0.00	-0.42	0.67
Gini-coefficient	-0.08	0.07	-1.35	0.18

Source: Author's own.

Figure 5-8 plots the sample of 69 resource-rich countries illustrating the relationship between the average values of overall globalisation (KOFGI) and the average RCVI.

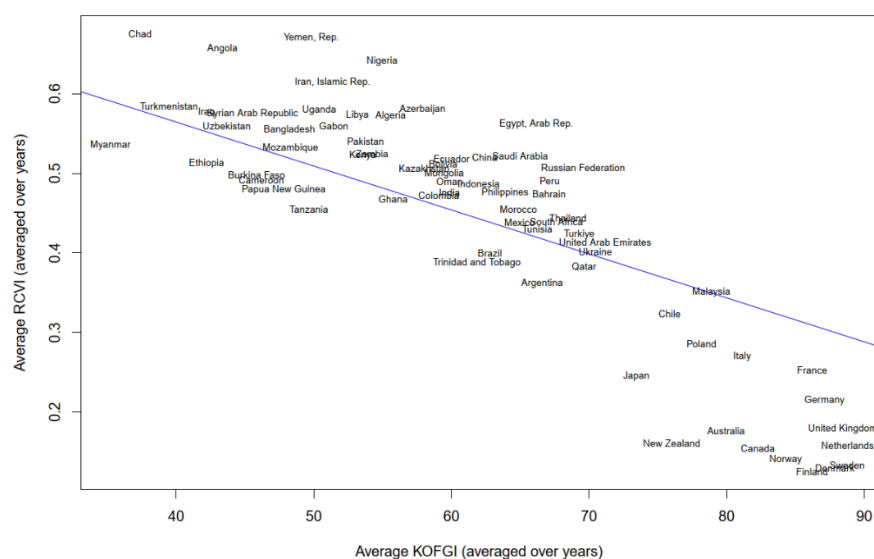


Figure 5-8: Static model - Fixed effect model (KOFGI)

Source: Author's own.

For the static model, as shown in Figure 5-8, the overall globalisation (KOFGI) has a negative (downward slope) effect, indicating that as the independent variable (KOFGI) increases, the dependent variable (RCVI) will decrease.

Figure 5-9, Figure 5-10 and Figure 5-11 show the results of the static model fit using the Fixed effect model for KOFecGI, KOFSoGI and KOFPoGI, respectively.

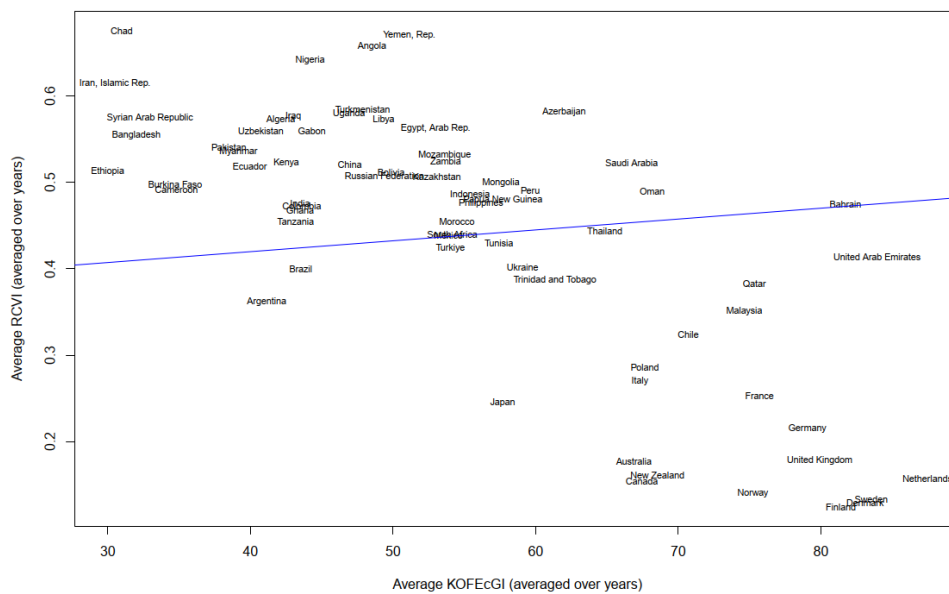


Figure 5-9: Static model - Fixed effect model (KOFecGI)

Source: Author’s own.

For the static model as shown in Figure 5-9, the economic globalisation has a positive (upward slope) effect indicating that as the independent variable (KOFecGI) increases the dependent variable (RCVI) also increases. All other model fits had a negative relationship, except for the static model for economic globalisation.

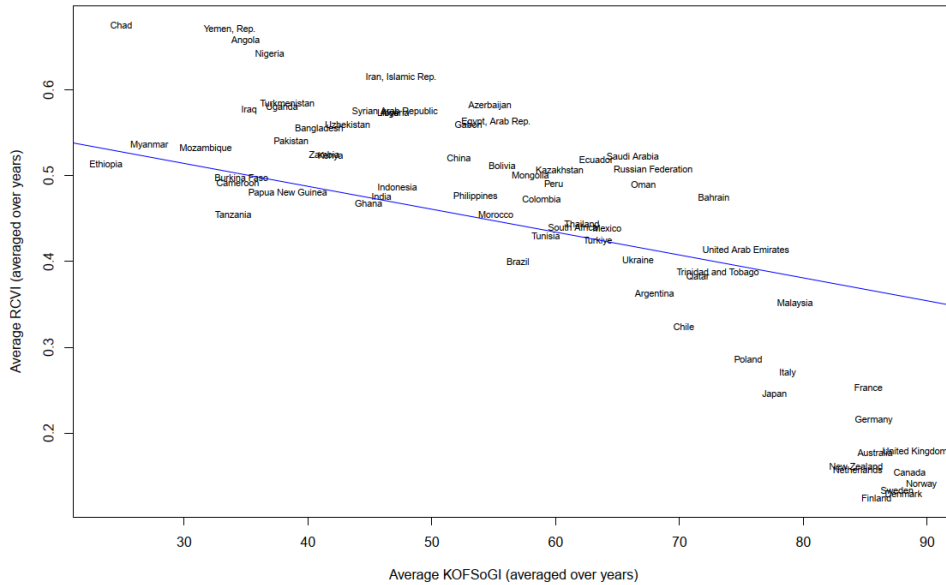


Figure 5-10: Static model - Fixed effect model (KOFSoGI)

Source: Author's own.

For the static model, as shown in Figure 5-10, the social globalisation has a negative (downward slope) effect, indicating that as the independent variable (KOFSoGI) increases, the dependent variable (RCVI) will decrease.

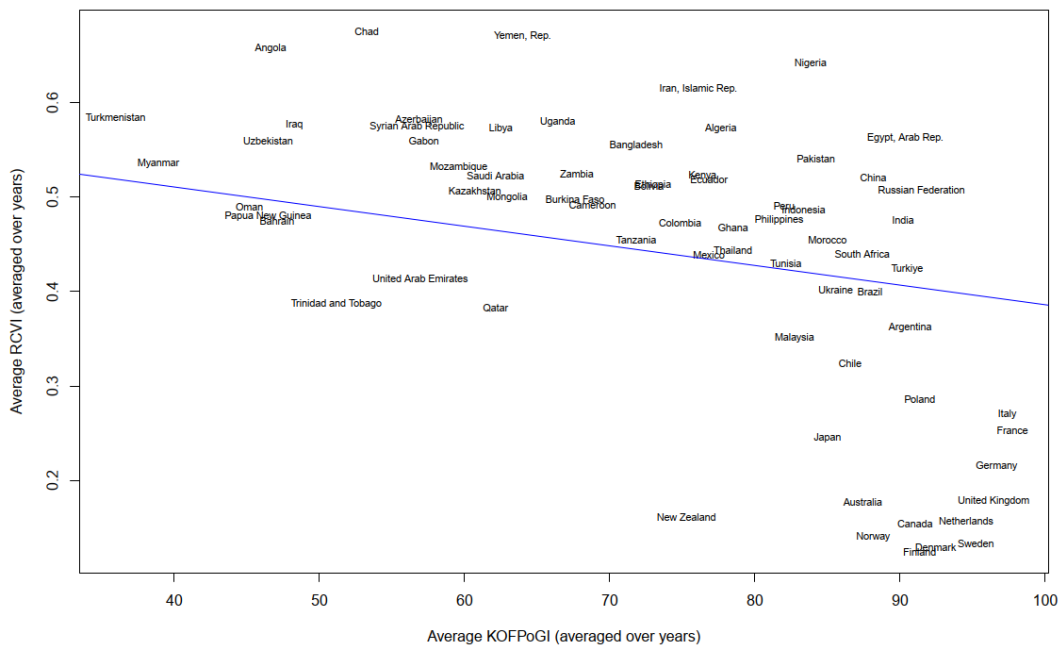


Figure 5-11: Static model - Fixed effect model (KOFPoGI)

Source: Author's own.

For the static model, as shown in Figure 5-11, the political globalisation has a negative (downward slope) effect, indicating that as the independent variable (KOFPoGI) increases, the dependent variable (RCVI) will decrease.

5.4.4 Goodness of fit (R^2)

Table 5-9 shows the R-squared (R^2) that indicates the goodness of fit for each model, both dynamic and static, along with the overall KOFGI and the KOFGI subindices. The closer R^2 is to 1, the better the model fits the data, and the line representing the model fit explains a larger proportion of the variance in the dependent variable. As R^2 decreases (approaches 0), the model's ability to explain the variance in the data decreases, and the fit line becomes less meaningful in capturing the relationship between the variables.

Table 5-9: Goodness of fit (R^2) for the four models

Models Fitted	N	R^2
Dynamic model with KOFGI	759	0.99
Dynamic model with KOFGI sub-indices	759	0.99
Static fixed effect model with KOFGI	759	0.16
Static fixed effect model with KOFGI sub-indices	759	0.29

Source: Author's own.

Both dynamic models have a high R^2 value (close to 1), indicating that the dynamic model better fits the dataset. The static models have lower R^2 values, indicating that the model explains a portion of the variance in the data. The low R^2 for the static models do not disvalue the model's usefulness or the significance of the relationships it captures. The N-values indicate the overall number of observations (N = 759) observations (69 countries times the 11-year data points).

5.5 Conclusion

In conclusion, the preliminary stages of this study involved meticulous data collection, country selection, and data quality assessment. The research focused on compiling data related to the RCVI, which assesses a country's vulnerability to

the resource curse. The study's methodology was distinguished by a dedication to data consistency and correctness, with a particular focus on the availability of data for various countries and indicators over a range of time periods. The sample of 69 resource-rich countries provided a solid foundation for subsequent analyses.

Furthermore, the study conducted diagnostic tests for serial correlation and cross-sectional dependence in panel data analysis. These tests revealed the presence of both serial correlation and cross-sectional dependence, prompting robust covariance estimation to ensure the validity of the results. In the dynamic models, the Blundell and Bond estimator was employed, while for static models, the Hausman test guided the choice between fixed and random effects models. The findings indicated that the fixed effect model was appropriate for static analysis, with significant relationships observed between the RCVI and globalisation indicators. Chapter six provides a detailed discussion of the results presented in chapter five.

6. Chapter 6 –Discussion of Results

6.1 Introduction

In this chapter, the results provided in chapter five are discussed in detail. Firstly, the RCVI findings are discussed and grouped into various categories, including high-average-RCVI, medium-average-RCVI, and low-average-RCVI countries. These classifications offer valuable insights into the RCVI countries.

Finally, the results of both the dynamic and static models are discussed. These models provide different results while revealing either positive or negative relationships. The various advantages and disadvantages of the dynamic and static models are discussed. This chapter provides a thorough explanation of the main findings.

6.2 RCVI findings

Various factors can explain the overall downward trend of the average RCVI over the 11-year period, firstly the drop in oil prices in 2014 along with the significant oil rent dependence (Biresselioglua et al., 2019). Additionally, the oil sanctions and band by the Western market on various countries is a contributing factor (Biresselioglua et al., 2019; Dreger et al., 2015). Lastly, the underdevelopment of non-resource sectors like manufacturing due to the Dutch disease and limited economic diversification (Biresselioglua et al., 2019).

According to the study's results, a high-average-RCVI is defined as those countries with an average RCVI value of at least 0.40 for 11 years, while medium-average-RCVI countries are classified with an average index between 0.15 and 0.40 (Biresselioglua et al., 2019). Low-average-RCVI countries are the remaining nations with an average RCVI equal to or below 0.15. A breakdown of the 69 countries listed in Table 5-1 indicates that 48 countries were categorised as high-average-RCVI, 16 countries as medium-average-RCVI and lastly, 5 countries as low-average-RCVI.

6.2.1 High-average-RCVI

High-average-RCVI countries have insufficient transparency and accountability, a high tendency toward rent-seeking behaviour and poor governance and policy

implementation. The human development levels indicate low human capital through poor education systems. The fragile state indicators for these countries are high, indicating that they are susceptible to political instability and the presence of conflict or violence.

High-average-RCVI countries experience severe economic and social problems because of inefficient resource utilisation. This is mostly caused by poor economic planning and development, insufficient resource management, and a lack of industrial expansion and diversification programs (Venables, 2016). They need to catch up in infrastructure R&D in the energy sector, which has increased their reliance on Western nations (Biresselioglu et al., 2019).

6.2.2 Medium-average-RCVI

For each sub-indicator used to calculate the RCVI, the medium-average-RCVI countries' averages are closer to the averages of the low-average-RCVI. Despite the medium-average-RCVI countries being closer related culturally and geographically to the high-average-RCVI countries, they outperformed the high-average-RCVI by addressing their internal stability.

The average human development level index for the medium-average-RCVI countries (0.87) is closer to the low-average-RCVI countries (0.92), indicating that these countries have a higher education system and a healthier society. The fragile state index for medium-average-RCVI countries has an average of 1.70, which is significantly lower compared to the high-average-RCVI countries with an average of 6.60. Overall, the subindexes indicate that the medium-average-RCVI perform better than high-average-RCVI countries and can implement policies better and have higher stability, lower violence and conflict and more government effectiveness (Biresselioglu et al., 2019).

6.2.3 Low-average-RCVI

The low-average-RCVI countries are all developed economies. Based on the indexes used to calculate the RCVI, the fragile state index indicates that these countries have the least fragile states with an average of 0.4 compared to the medium-average-RCVI countries with a 1.69 average for fragile state. The low-average-RCVI countries have a significantly lower natural resource rents (% of

GDP) average of 3.00 compared to medium-average-RCVI (6.10) and high-average-RCVI (6.34) countries. Additionally, for the voice and accountability, political stability and government effectiveness indexes, the low-average-RCVI countries individually score higher, indicating a stable, transparent and effective government. Lastly, these developed countries have higher human development levels and education systems compared to the other categories.

However, it is worth mentioning that low-average-RCVI countries have the lowest GDP growth rate (annual %) index. Therefore, relative to the high-average-RCVI and medium-average-RCVI countries, the developed countries are experiencing slower GDP growth rates.

Overall, the study corroborates the findings from Biresselioglu et al. (2019) that developed countries are generally less susceptible to the resource curse considering the RCVI than developing countries. However, countries like Malaysia (RCVI = 0.35) and Trinidad and Tobago (RCVI = 0.39), despite being developing countries, are performing better compared to their neighbouring or regional counterparts. Malaysia and Trinidad and Tobago have better transparency based on indexes for RCVI and governments is focusing on human capital development and diversification of various industries.

6.3 Model findings

The model findings for both the dynamic and static models are discussed in terms of the main and sub-research questions, focussing on the static model findings. In addition, the differences in results for the dynamic and static models are explained.

6.3.1 Dynamic versus Static Model

Dynamic Panel Data Models explicitly account for the time dimension, allowing for lagged values of the dependent variable. Thereby capturing the dynamic nature of panel data by considering how past values influence the current values. On the other hand, Static Panel Data Models do not consider time dynamics and treat each observation as independent of others. They assume that variables do not change over time within the panel.

The dynamic model is more complex than the static model, but both uses various assumptions. In cases with limited time periods or small samples, dynamic models

may produce less reliable estimates. In contrast, the static model may be more suitable for smaller sample sizes with shorter time dimensions as they do not rely on time dynamics (Croissant & Millo, 2008).

Considering autocorrelation and serial correlation, dynamic panel data models can account for autocorrelation or serial correlation in the error terms, which often occurs in time series data. However, static panel data models assume that errors are independent across observations, which may not hold in autocorrelation (Croissant & Millo, 2008). Lastly, the data structure for dynamic panel data models is ideal for unbalanced panel data with varying time intervals between observations. In contrast, static models may be more suitable for balanced panel data where each unit is observed at the same time points (Croissant & Millo, 2008).

Although the study's panel data was balanced, due to the accessibility and availability of data for the time-period of 11 years and the relatively small sample size of 69, along with the various assumptions, the static model and dynamic model delivered different results. Based on the above, the static model, which provided significant results was more reliable and discussed in more detail based on the sample size and time-period.

6.3.2 *Static model*

6.3.2.1 Discussion of the main research question

Research Question: What is the impact of globalisation on the resource curse vulnerability of natural resource-rich countries?

The alternative hypothesis for the static model below was proven true, suggesting strong statistical evidence that RCVI has an effect on overall globalisation.

H1_{Alt} – Alternative Hypothesis: There was a significant positive relationship between overall globalisation (*KOFGI*) and Resource Curse Vulnerability Index (RCVI).

The discussion on the main research question is provided in the proceeding section based on each sub-research question.

6.3.2.2 Discussion of sub-research question 1

Sub-research question 1: Does the level of economic globalisation effect the resource curse vulnerability of natural resource-rich countries?

The alternative hypothesis for the static model below was proven true, suggesting strong statistical evidence that RCVI has an effect on economic globalisation.

H2_{Alt} – There was a significant positive relationship between economic globalisation (*KOFEcGI*) and Resource Curse Vulnerability Index (RCVI).

Economic globalisation has a positive (upward slope) effect, indicating that as the independent variable (*KOFEcGI*) increases, the dependent variable (RCVI) also increases. All other model fits had a negative relationship, except for the static model for economic globalisation.

However, the subdimension of economic globalisation, including financial globalisation and trade globalisation, including trade openness and FDIs positively effects RCVI. In other words, the more economically globalised a country is, the more vulnerable a country is to the resource curse. However, compared to the social and political globalisation plots, the economic globalisation plot shows limited alignment with the data points, indicating a relatively weak fit between the model and the observed data. The trade war can explain the relationship as it accelerates deglobalisation (An et al., 2020). A positive relationship was established for economic globalisation by Ngueta et al. (2022) for economic sophistication.

6.3.2.3 Discussion of sub-research question 2

Sub-research question 2: Does the level of social globalisation effect the resource curse vulnerability of natural resource-rich countries?

The alternative hypothesis for the static model below was proven true, suggesting strong statistical evidence that RCVI has an effect on social globalisation. Social globalisation has a negative effect, indicating that as the independent variable (*KOFSoGI*) increase, the dependent variable (RCVI) will decrease.

H3_{Alt} – There was a significant positive relationship between social globalisation (*KOFSoGI*) and Resource Curse Vulnerability Index (RCVI).

These results were corroborated in part by Numba et al. (2022), who found in the study that social globalisation has a significant effect positive effect concerning the

human development index, which is a subindex of the RCVI. This indicates that a higher diffusion of norms and cultural ideas, and the level of knowledge and information flows make countries less vulnerable to the resource curse.

However, these results for the sub-indicator of social globalisation of internet usage (bandwidth) are in contradiction with Nguea et al. (2022), which shows that higher internet usage has a significant negative effect on economic sophistication in African countries and, therefore, more susceptible to the resource curse. This study is focused on African countries, so this can be explained by the digital divide in the countries, along with high infrastructure costs and limited technological and digital skills available among the citizens (Nguea et al., 2022).

6.3.2.4 Discussion of sub-research question 3

Sub-research question 3: Does the level of political globalisation effect the resource curse vulnerability of natural resource-rich countries?

The alternative hypothesis for the static model below was proven true suggesting, strong statistical evidence that RCVI has an effect on political globalisation. Political globalisation has a negative effect, indicating that as the independent variable (KOFPoGI) increases, the dependent variable (RCVI) will decrease.

H4_{Alt} – There was a significant positive relationship between political globalisation (KOFPoGI) and Resource Curse Index (RCVI).

Noumba et al. (2022) partially support these findings, the study discovered that political globalisation has a significant and positive influence on the human development index, a subindex of the RCVI. This suggests that a higher level of international cooperation, international treaties and international organisations result in countries being less vulnerable to the resource curse.

This is corroborated by Nguea et all (2022) studies on African countries, both the *de jure* and *de facto* subdimensions of political globalisation had a significant positive effect on economic sophistication. This indicates that a higher level of participation with international organisations and an increased number of embassies lead to economic sophistication and, thereby, countries being less susceptible to the resource curse.

The study from von Haldenwang and Ivanyna (2018), which focuses on the political resource curse, indicates that political regime type and state capacity impact the vulnerability of government resources revenues, which in turn influences a country's susceptibility to the resource curse. Although this study did not include the *de jure* and *de facto* subdimensions as part of the analyses, the study conducted by Tamasauskiene and Žičkienė (2021) showcases the complexity of political globalisation. *De jure* political globalisation increases income inequality. On the other hand, *de facto* political globalisation creates a more equal society in terms of income (Tamasauskiene & Žičkienė, 2021).

6.3.3 *Dynamic model*

6.3.3.1 Discussion of the main research question

Research Question: What is the impact of globalisation on the resource curse vulnerability of natural resource-rich countries?

The null hypothesis for the dynamic model below was proven true, suggesting there was no significant effect between RCVI and overall globalisation. The overall globalisation (KOFGI) has a negative effect, indicating that as the independent variable (KOFGI) increases, the dependent variable (RCVI) will decrease.

H1₀ – Null Hypothesis: There is no significant relationship between overall globalisation (*KOFGI*) and Resource Curse Vulnerability Index (RCVI).

6.3.3.2 Discussion of sub-research questions 1, 2 and 3

Sub-research question 1: Does the level of economic globalisation effect the resource curse vulnerability of natural resource-rich countries?

Sub-research question 2: Does the level of social globalisation effect the resource curse vulnerability of natural resource-rich countries?

Sub-research question 3: Does the level of political globalisation effect the resource curse vulnerability of natural resource-rich countries?

As per chapter three, the three null hypotheses, as detailed below, were proven to hold for the dynamic model. There was no significant effect in the dynamic models for RCVI between economic, social and political globalisation, respectively. The

economic (KOFEcGI), social (KOFSoGI) and political (KOFPoGI) globalisation, respectively, have a negative effect, indicating that the independent variable increases, the dependent variable (RCVI) will decrease.

H2₀ – There was no significant relationship between economic globalisation (*KOFEcGI*) and Resource Curse Vulnerability Index (RCVI).

H3₀ – There was no significant relationship between social globalisation (*KOFSoGI*) and Resource Curse Index (RCVI).

H4₀ – There was no significant relationship between political globalisation (*KOFPoGI*) and Resource Curse Index (RCVI).

Hence, compared to the static model, the dynamic model has no significant relationship overall for KOFGI and each subdimension of economic, social and political.

6.3.3.3 Importance of Effective Institutions and Policies

A recurring theme from the literature review and results has been the importance of effective institutions and policies which can curb the resource curse.

Strong institutions can protect countries from the resource curse, ensuring that the wealth from valuable natural resources benefits all citizens and not the political elite. Institutions are the key decisive factor in determining if a country is susceptible to the resource curse, particularly the difference in performance is dependent on how resource rents are distributed through institutional arrangements (Badeeb et. al. 2017). Improved quality of institutional agreements, which is captured by the political globalisation index, which includes international agreements and treaties, international NGOs and organisations, can limit the negative effect of the resource curse (Badeeb et al., 2017).

Strong institutions have a positive effect on human development and a robust long-term development focus which limit the resource curse (Havranek et al., 2016; Nouba et al., 2022). Similarly, institutions alone cannot curb the resource curse, but the correct institutional frameworks promote the economy and human development, while poor governance hinders an economy (Siakwah, 2017). Poor governance is common in countries with weak institutions (Elmassah & Hassanein, 2022)

In summary, the lack of strong financial and political institutions increases the rent-seeking behaviour and exploitation of the citizens and decreases policy implementation, which increases countries' vulnerability to the resource curse (Asif et al., 2020).

Regarding policy implications, effective policies and implementation can aid resource-rich countries vulnerable to the resource curse by transforming resource revenue into opportunities for sustainable growth, improved living standards, and a better future for all citizens.

Curbing the natural resource curse is complex and there is no single solution. However, a practical policy toolkit and framework can address better planning and resource management, improve governance through various anti-corruption policies, prevent corruption, provide openness and transparency, and lastly, improve revenue allocation and management (Badeeb et al., 2017; Biresselioglu et al., 2019). A wealth fund is an example of an effective policy that several countries have implemented. The critical focus of wealth funds is to diversify the economy, thereby reducing the reliance of a country on resources and a specific sector (Biresselioglu et al., 2019). The outcome is, therefore, to achieve sustainable development and social justice for all citizens by preventing the extraction and export of commodities that could be processed locally (Badeeb et al., 2017). Strong political policies are required to avoid exploitation by the elite society and to maintain resource rent levels at a desired level (Asif et al., 2020; Nounba et al., 2022).

In terms of globalisation, international monitoring and support are effective policies to ensure fair collaboration with multinational corporations (MNCs) and funders. Policies that access the explorations, local content, investment quality and production intensity can reform partnerships with MNCs (Adams et al., 2019). Corporate social responsibility should be incorporated into a long-term economic development plan, which should focus on governments being more involved with resource management usually owned by MNCs (Adams et al., 2019). Similarly, these strong inclusive financial policies considering local content and investment allow for skill development and transfer and improve information and knowledge sharing to protect local resources (Asif et al., 2020).

Through effective institutions and strategic policies, nations can harness the benefits of their resources, ensuring prosperity and well-being for generations to come. Low-average-RCVI countries have strong institutions and policies to aid them in mitigating the resource curse, while high and medium-average-RCVI countries lack proper policies and institutions.

6.4 Conclusion

In this chapter, the research findings were discussed based on the results presented for the study in chapter five. The discussion started by detailing the insights from the Resource Curse Vulnerability Index (RCVI) results. Additionally, the RCVI countries are categorised into high-average, medium-average, and low-average RCVI groups. These classifications provided a valuable framework for comprehending and comparing resource curse vulnerability across diverse countries.

The analysis of RCVI results revealed a dynamic environment where countries with abundant resources showed various degrees of vulnerability to the resource curse. Developing countries performed worse than the developed countries. These vulnerabilities were significantly shaped by influencing factors such as changes in the oil price, dependence on oil rents, economic diversification, and foreign sanctions. High-average-RCVI nations including, Chad, Yemen, Angola, Nigeria, and Iran, struggled with significant economic and social problems brought on by ineffective resource utilisation and poor governance.

Trinidad and Tobago, Qatar, Argentina, Malaysia, and Chile are examples of medium-average-RCVI countries. This group has the characteristics to manage internal stability and achieve favourable human development indices. These nations have shown their ability to implement successful policies by having better educational systems, healthier societies, and lower state fragility compared to high-average-RCVI countries.

The low-average-RCVI category, which includes developed economies such as Canada, Norway, Sweden, Denmark, and Finland, emerged as the least vulnerable to the resource curse. These nations demonstrated transparent and effective governance, stable environments, and diversified economies, distinguishing themselves from the rest of the countries in the dataset.

The model results for both the dynamic and static models were discussed, focusing on the static model's outcomes. While dynamic models accounted for time dynamics and lagged effects, the static model yielded robust and significant results due to the constraints of the panel dataset, including limited time periods and sample size. The dynamic models provided no significant results for RCVI and overall globalisation, economic, political and social globalisation, respectively.

The static model resulted in a significant negative relationship between RCVI and overall globalisation. Similarly, the social and political globalisation subdimensions showcased negative relationships with RCVI, suggesting that higher levels of social and political globalisation mitigated resource curse vulnerability. In contrast, a positive relationship between economic globalisation and RCVI was found, indicating that more economically globalised countries faced higher susceptibility to the resource curse.

However, the remarkable resiliency shown by developing nations like Trinidad and Tobago and Malaysia underlines the crucial role that strategic policies and diversification initiatives have in reducing the effects of the resource curse. Therefore, the importance of strong institutions and effective policies was discussed.

Low-average-RCVI countries, compared to high and medium-average-RCVI countries, have stronger institutions. Sufficient institutions focus on long-term human development and allow for effective international agreements and treaties between institutions and governments, which can limit the negative effect of the resource curse. Similarly, practical and strategic financial and political policies allow low-average-RCVI countries to better curb the resource curse through proper planning, revenue management and sufficient governance.

Ultimately, chapter six offers a holistic comprehension of the research outcomes based on the research questions. These findings contribute to the effect of globalisation on resource curse vulnerability, offering valuable insights for countries to navigate the complexities of resource-rich environments.

7. Chapter 7 –Conclusion

7.1 Overview of the Resource Curse Vulnerability, Globalisation and the Research Objectives

Elmassah and Hassanein (2022) use the term “resource curse” to describe resource-rich nations not reaping the economic rewards of their resource wealth as envisaged. According to recent research, it is necessary to examine a country’s resource curse vulnerability outside of the confines of traditional nationalism (which was mainly focused on economic factors) considering globalisation, among other social, political, and cultural factors, as well as cross-border interactions (Adams et al., 2019; Ullah & Ullah, 2019; Siakwah, 2017).

Resource curse vulnerability defines a country’s susceptibility to adverse events relating to the resource curse (Gnansounou, 2008). At the same time, the term globalisation refers to the expanding interconnection and interdependence between countries, including economies, cross-border interaction and the movement of people, ideas, goods, and services (Nguea et al., 2022; Nomba et al., 2022). Both these constructs, resource curse vulnerability and globalisation, are measured using two composite indices.

The Resource Curse Vulnerability Index (RCVI) is a composite index calculated using nine sub-indicators to assess how vulnerable nations are to the resource curse (Biressegioglua et al., 2019). In order to quantify and measure globalisation across countries, the KOF Globalisation Index (KOFGI) was utilised. The overall globalisation index is divided into three main subdimension namely economic globalisation, social globalisation, and political globalisation (Nomba et al., 2022).

The context of the research was focused on non-renewable natural resources-rich countries. The dataset consisted of 69 countries over 11 years from 2005 until 2015 due to data availability and accessibility.

The study offered insights into the complex relationship between a country’s resource curse vulnerability and globalisation, empowering key stakeholders with more knowledge to improve partnerships, agreements, policies, investments and negotiations leading to increased national wealth. In turn, this improves the quality of life for local residents (Adams et al., 2019; Nomba et al., 2022).

Additionally, the research aimed to improve decision-making for countries and corporations, not only academics. By leveraging the advantages of globalisation research, resource-rich countries can reduce their vulnerability to the resource curse and enhance diversified and sustainable economies.

7.2 Research Motivation – Known versus Unknown

The effects of globalisation have been mainly disregarded, even though the resource curse theory has been the subject of extensive academic research and decades' worth of studies (Adams et al., 2019; Havranek et al., 2016; Henri, 2019). Traditional research has mainly concentrated on the relationship between economic issues and the resource curse theory (Biresselioglu et al., 2019). Additionally, these studies mostly focused on national variables, including the Human Development Index (HDI), corruption, Gross Domestic Product (GDP), fragile state, natural resource rents, government effectiveness, and political stability, which limited the resource curse to within national bounds.

However, a thorough understanding of the resource curse phenomena may be hampered by the restricted study of more extensive international contacts and macro-level indicators on the globalisation level (Adams et al., 2019). Siakwah (2017) elaborated on the need to consider the globalised assemblage inside resource-rich businesses like the oil industry. The (KOF) Globalisation Index captures the connections network between governments, local and national politics, transnational interests, globalised structures, and technology actors.

Previous evaluations have neglected the potential impacts of transnational firms, global economic interdependencies, and international governance frameworks on resource curse vulnerability by neglecting to consider the role of globalisation. This theoretical gap addressing the function of globalisation in the context of a country's vulnerability to resource curse was emphasised by Siakwah (2017), and the results of Adams et al. (2019) further substantiate this gap. The resource curse is a result of nationalism, according to Siakwah (2017), who makes a convincing argument for this claim. This means that national elites and institutions are to blame for the economic restrictions on resource development.

7.3 Research Questions and Methodology Overview

Research questions and hypotheses were established to understand the relationship between globalisation and a country's vulnerability to the resource curse. The main research question was to determine the impact of globalisation on the resource curse vulnerability of natural resource-rich countries. Additionally, three sub-research questions were established to determine the resource curse vulnerability of natural resource-rich countries and the effect on economic globalisation, social globalisation and political globalisation, respectively.

The research onion model directed the research methodology as it moved through a systematic research process (Saunders & Lewis, 2018). Beginning with a positivist viewpoint, the research philosophy matched the study's empirical design and emphasised the research topic's factual aspects. Testing hypotheses based on the accepted resource curse theory, the deductive theory development approach was used. A mono-method quantitative approach emphasising a structured and scientific methodology was adopted to meet the study's broad scope within the restrictions of time and resources (Al-Ababneh, 2020). Saxena (2019) and Denscombe (2021) agreed that positivism is mainly associated with the deductive approach, using quantitative methods to test hypotheses on existing theories such as the resource curse theory.

The descripto-explanatory research design successfully combined descriptive and explanatory research objectives. This method allowed for both a thorough description of the variables and an analysis of causal links, facilitating the examination of the relationship between globalisation and vulnerability to the resource curse (Rahi, 2017). Due to the complexity and sensitivity of the macro-level study, secondary data from trustworthy open-source databases were used to verify data integrity, and a thorough data cleaning process was used. A cross-sectional design was used as the time horizon, meaning data was collected once at a specific point in time. The population, due to the available data, consisted of many countries and the unit of analysis was determined as a country. The population was reduced by the sampling method, which focused on resource-rich countries determined by the resource rent level with an average threshold of 1 billion USD per year over the period (Biresselioglua et al., 2019).

The dependent variable was RCVI, which was calculated per year per country using nine indicators from reliable databases providing a composite index to

measure the vulnerability of a country to the resource curse. The nine indicators included government effectiveness, GDP growth, the rule of law, political stability, voice and accountability, natural resource rent, human development level, fragile state, and transparency level (Biresselioglu et al., 2019). The analysis used the KOFGI as the independent variable, which represents the degree of globalisation overall and the subdimensions, including economic, social and political globalisations (Gygli et al., 2019). The Gini coefficient and population growth rate were used as control variables to prevent biases from omitted variables.

Two model equations were created for both the dynamic and static model, including the variable as discussed above. The R software, along with the *p*lm package, was used to fit the models and perform testing procedures (Croissant & Millo, 2008).

The study conducted diagnostic tests on the panel data for serial correlation and cross-sectional dependence in analysis. These tests revealed the presence of both serial correlation and cross-sectional dependence, prompting robust covariance estimation for both models to ensure the validity of the results. For the dynamic models, the Blundell and Bond estimator was employed, while for static models, the Hausman test guided the choice between fixed and random effects models. The findings indicated that the fixed effect model was appropriate for static analysis.

7.4 RCVI and Model Findings

The analysis of RCVI results revealed a dynamic environment where countries with abundant resources showed various degrees of vulnerability to the resource curse. The study's findings were categorised based on the countries' average RCVI values over an 11-year period. Countries with an average RCVI value of at least 0.40 are classified as high-average-RCVI nations, while those with an average index between 0.15 and 0.40 fall into the category of medium-average-RCVI countries (Biresselioglu et al., 2019). The remaining countries, with an average RCVI equal to or below 0.15, are designated low-average-RCVI countries. The breakdown of the 69 countries revealed that 48 countries are categorised as high-average-RCVI nations, 16 countries fall into the medium-average-RCVI category, and the remaining 5 countries are classified as low-average-RCVI countries.

Developing countries are more vulnerable to the resource curse than the developed countries. However, some developing nations like Trinidad and Tobago and

Malaysia outperform their counterpart through strategic policies and diversification initiatives, thereby reducing the effects of the resource curse. Therefore, the importance of strong institutions and effective policies was highlighted to mitigate the resource curse.

Low-average-RCVI countries, compared to high and medium-average-RCVI countries, have stronger institutions. Sufficient institutions focus on long-term human development and allow for effective international agreements and treaties between institutions and governments, which can limit the negative effect of the resource curse. Similarly, practical and strategic financial and political policies allow low-average-RCVI countries to better curb the resource curse through proper planning, revenue management and sufficient governance.

The model results for both the dynamic and static models were discussed, focusing on the static model's outcomes. Despite the dynamic models considering time-related dynamics, including the lagged variable, the static model produced strong and meaningful results. This can be attributed to the limitations posed by the panel dataset, such as a limited timeframe and sample size. The dynamic models provided no significant results for RCVI and overall globalisation, economic, political and social globalisation, respectively.

The static model revealed a significant inverse correlation between RCVI and overall globalisation. Similarly, the subdimensions of social and political globalisation displayed a negative relationship with RCVI, indicating that increased social and political globalisation acted as safeguards against resource curse vulnerability. In contrast, there was a positive association found between economic globalisation and RCVI, suggesting that nations with higher economic globalisation were more prone to the resource curse.

7.5 Academic and practical business relevance of the study

The resource curse theory has long been a focus of scholarly debate, although globalisation's contribution to this problem is frequently ignored. Traditional studies have primarily concentrated on national indicators and economic factors, neglecting the broader international interactions and macro-level indicators captured by the KOF Globalisation Index. As a result, the potential effects of global economic

interdependencies, transnational corporations, and international governance frameworks on resource curse vulnerability have been overlooked.

The resource curse theory is an important idea that highlights the difficulties experienced by nations with abundant natural resources. However, taking a globalisation perspective, academics can better understand how these countries may utilise the potential advantages of global connections to transform their economies and enhance the well-being of their citizens. Resource-rich nations can escape the resource curse and open the door to inclusive, sustainable prosperity by embracing diversification, technical advancement, and institutional reforms made possible by globalisation.

From a business context, improved technologies and the desire to find new reserves to meet the rising energy demand are driving the endless search for non-renewable natural resources. These precious resources are sought after not only on land but also offshore due to improved technology. Continuous oil and gas discoveries provide convincing evidence of the enormous scope and ongoing demands associated with the research (Offshore Technology, 2021; Zhang et al., 2019). The research aids policymakers in identifying gaps and, thereby, opportunities for enhancing partnerships, policies, and negotiations with global actors. Policymakers can leverage the research to decrease resource-rich countries' susceptibility to the resource curse and establish more diversified and sustainable economies (Biresselioglu et al., 2019; Nguea et al., 2022).

7.6 Limitations and Areas for Future Research

The research scope is limited to 69 natural resource-rich countries due to the accessibility and availability of the data. Additionally, the secondary data used in this study posed certain limitations. The original purpose of data collection may not align with the research objectives. Additionally, discrepancies could arise due to different definitions and expectations of the data from various sources (Saunders & Lewis, 2018). Since collecting of some of the indicators in the RVCI composite index, for example, voice and accountability, was obtained through qualitative methods, some of the sub-indicators collected via a survey could have unconscious biases.

Future research should consider the *de facto* and *de jure* subdimensions of the globalisation index as well as the various other subdimensions, including financial, trade, interpersonal, cultural and informational globalisation. The *de facto* and *de jure* subdimensions provides a more detailed understanding of what is actually occurring (*de facto*) and how policies and laws (*de jure*) affect the resource curse. A similar split was done for *de facto* and *de jure* by Nguea et al. (2022).

8. References

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Appendix A: Consistency Matrix

Table 0-1: Consistency Matrix

Title: Globalisation and Resource Curse Vulnerability.

Questions/	Literature review	Data Collection Tool	Analysis
What is the impact of globalisation on the resource curse vulnerability of natural resource-rich countries?	(Biresselioglu et.al., 2019).	Quantitative. Secondary Data.	Analysing 9 indicators, that affect the resource curse phenomenon for 55 countries from 2005 till 2015.
Does the level of social globalisation effect the resource curse vulnerability of natural resource-rich countries?	(Noumba et.al., 2022).	Quantitative. Secondary Data. Generalised Method of Moments (GMM) estimations. Multicollinearity tests	Globalisation, natural resource rents and human development in 49 African countries over the 2000–2017 period. Analysing data from UNDP, the World Bank, and the KOF globalisation index.
Does the level of economic globalisation effect the resource curse vulnerability of natural resource-rich countries? Note: Using KOF not specific to RC.	(Nguea et.al., 2022).	Quantitative. Secondary Data. System GMM. Driscoll and Kraay estimator. Hansen test.	27 African countries, covering the period from 1996 to 2017. first checking serial correlation, heteroskedasticity, and cross-sectional dependence of the residuals.

Source: Author's own.

Appendix B: Exploratory plots of RCVI

Figure 0-1 till Figure 0-6 shows the average RCVI over the 11-year period from 2005 until 2015 for various variables as indicated.

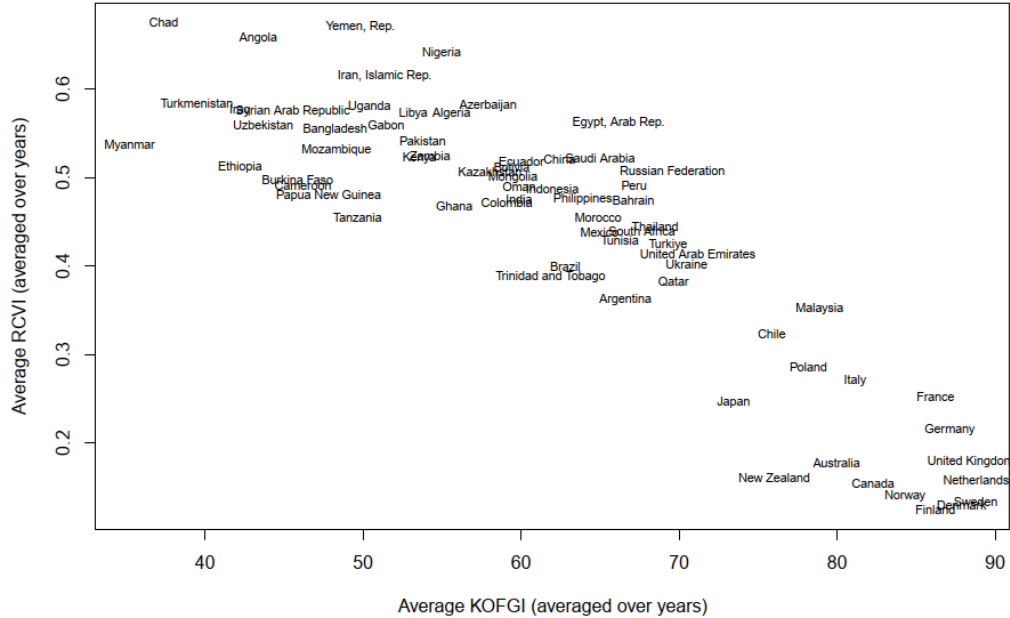


Figure 0-1: Average RCVI plotted against average globalisation (KOFGI)

Source: Author's own.

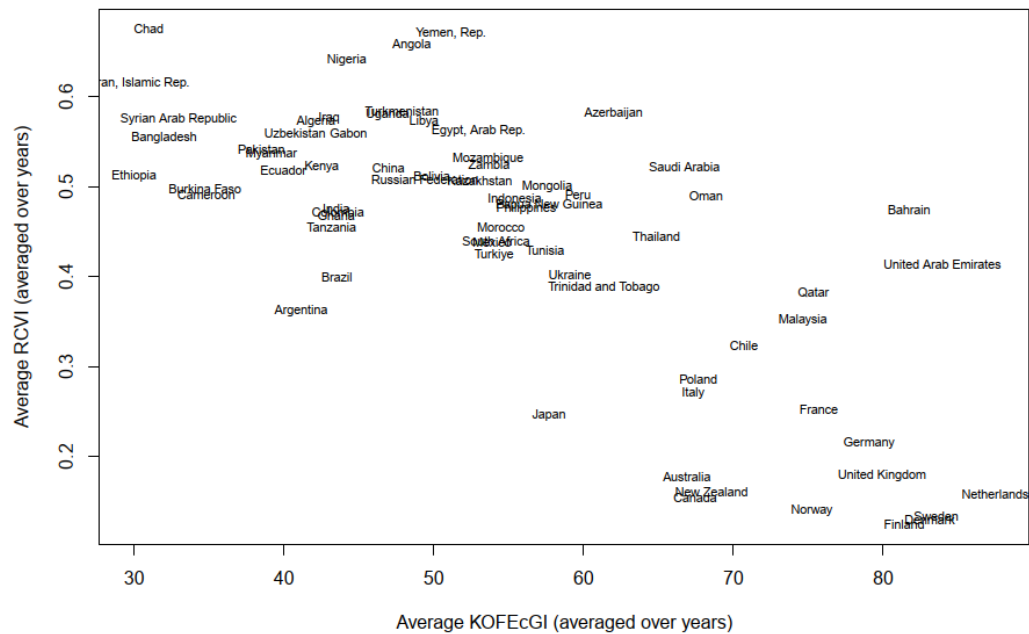


Figure 0-2: Average RCVI plotted against average economic globalisation (KOFecGI)

Source: Author's own.

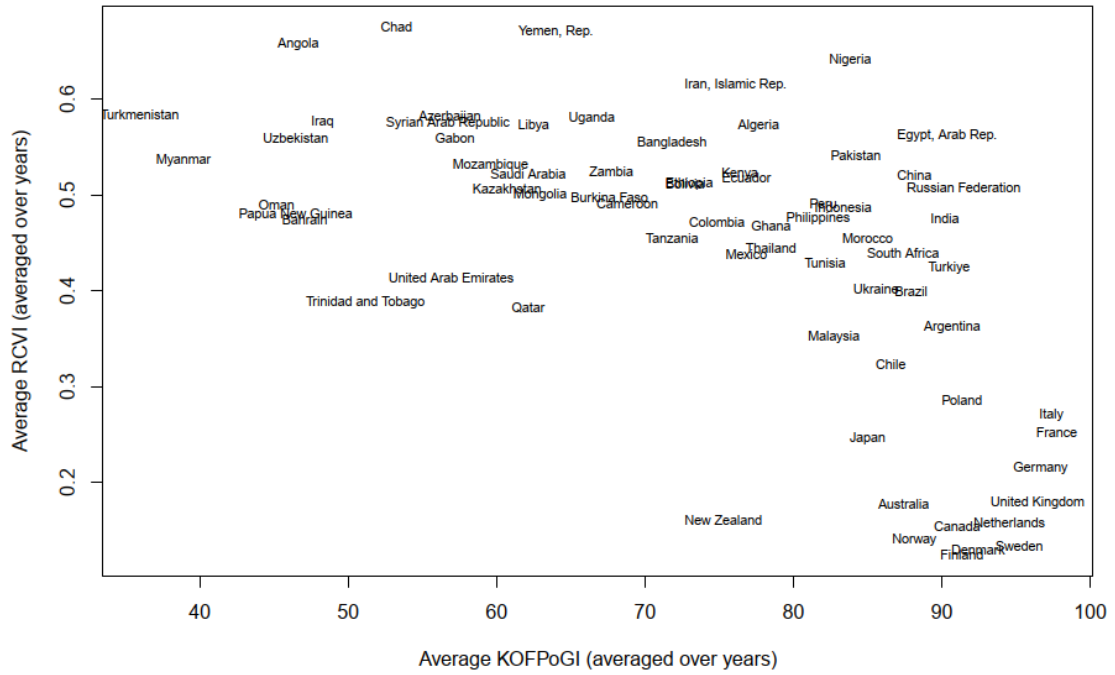


Figure 0-3: Average RCVI plotted against average political globalisation (KOFFoGI)

Source: Author's own.

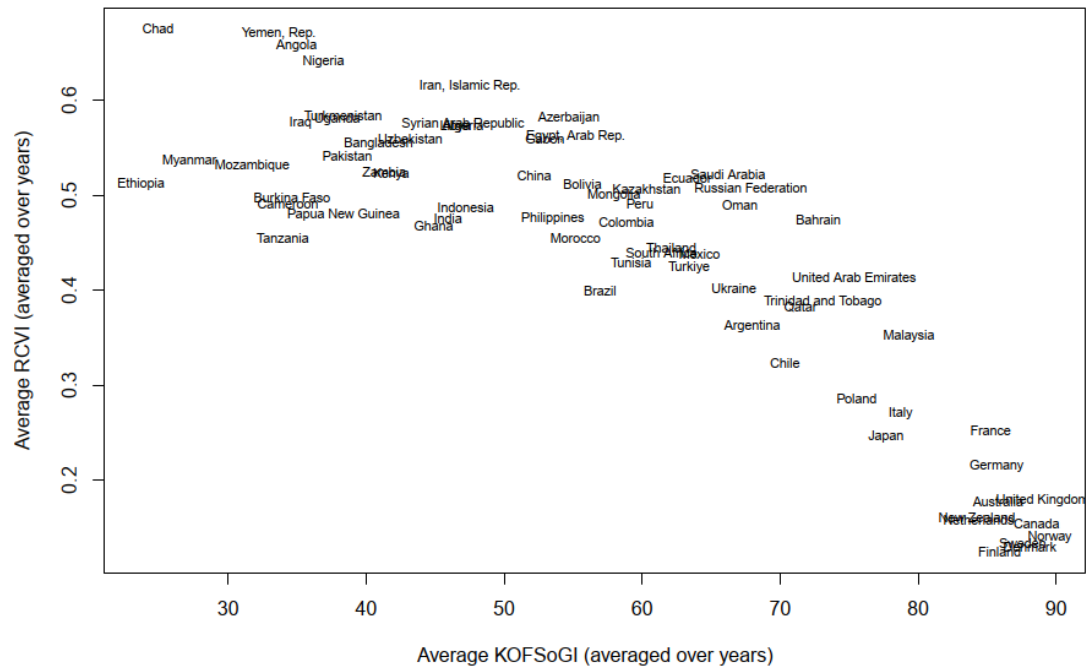


Figure 0-4: Average RCVI plotted against average social globalisation (KOFSoGI)

Source: Author's own.

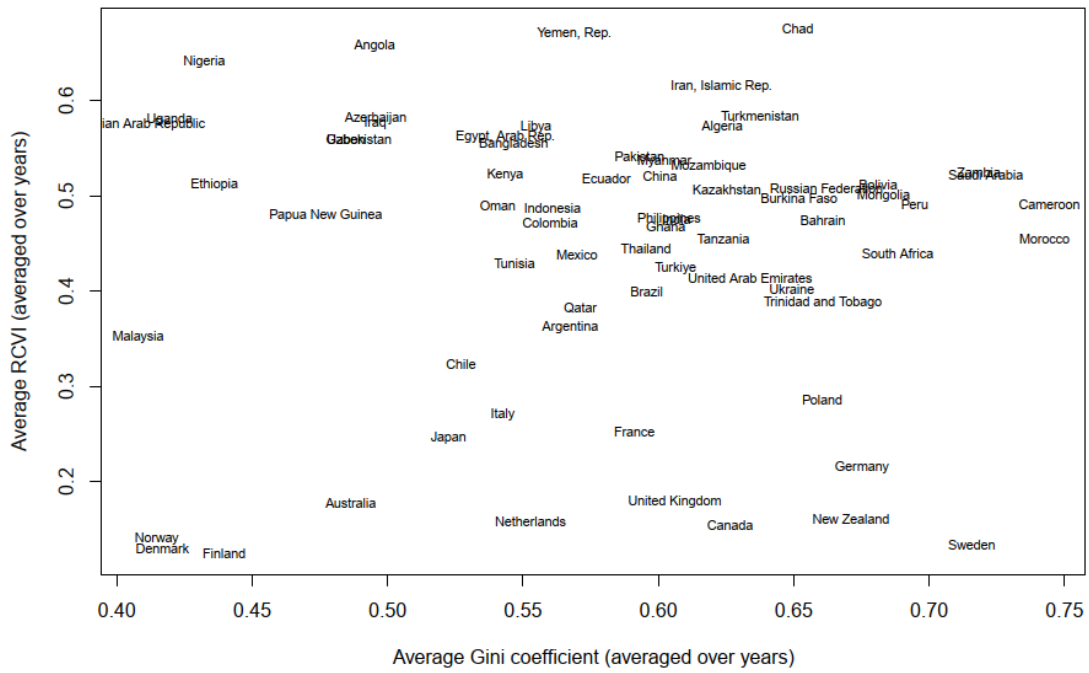


Figure 0-5: Average RCVI plotted against average Gini coefficient

Source: Author's own.

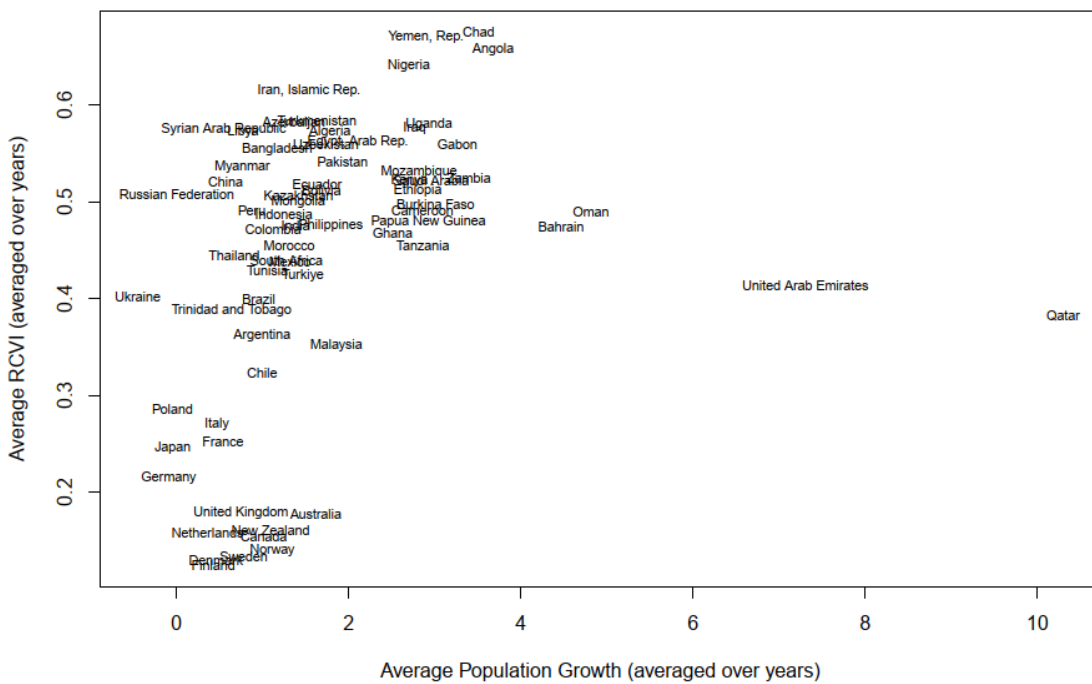


Figure 0-6: Average RCVI plotted against average population growth rate

Source: Author's own.