



UNIVERSITÀ  
DI PAVIA

**DEPARTMENT OF ECONOMICS AND MANAGEMENT**

**MASTER PROGRAM IN MANAGEMENT OF INTERNATIONAL BUSINESS &  
ENTREPRENEURSHIP**

**THE RESOURCE CURSE AND ITS EFFECTS ON QUALITY OF LIFE IN NIGERIA**

Supervisor:

Prof. Patrizio Tirelli

Discussant:

Prof. Patrizio Tirelli

Student:

Filippo Grimaldi

Academic Year 2025-2026

**Abstract**

La presente tesi analizza il fenomeno della "resource curse" (maledizione delle risorse) in Nigeria, con l'obiettivo di identificare i meccanismi di trasmissione attraverso cui la dipendenza dalle esportazioni petrolifere è associata alla qualità della vita della popolazione. A differenza di gran parte della letteratura esistente, che valuta l'impatto dell'abbondanza di risorse naturali attraverso indicatori di crescita aggregata come il PIL, questo lavoro adotta l'Indice di Sviluppo Umano (HDI) come variabile dipendente, riflettendo l'argomento centrale della tesi secondo cui la crescita economica nigeriana non si è tradotta in miglioramenti proporzionali nelle condizioni di vita della popolazione.

La prima parte della tesi (Capitoli 1-10) sviluppa una rassegna della letteratura teorica e comparata, esaminando il caso nigeriano alla luce delle esperienze di paesi che sono riusciti a evitare la maledizione delle risorse (Norvegia, Botswana, Indonesia, Malesia), e analizzando in dettaglio le determinanti settoriali della qualità della vita in Nigeria: la dipendenza dal settore petrolifero, la debolezza istituzionale, la violenza politica, la spesa pubblica e le condizioni macroeconomiche. Questa analisi identifica quattro canali teorici di trasmissione della maledizione delle risorse: la governance istituzionale, l'allocazione della spesa pubblica, l'accumulazione di capitale umano e la stabilità macroeconomica.

La seconda parte (Capitoli 11-13) traduce questo quadro teorico in un modello empirico, stimato su una serie storica annuale relativa al periodo 2000-2023. Attraverso un modello di regressione OLS e una specificazione ARDL parsimoniosa con test di cointegrazione, lo studio verifica cinque ipotesi direzionali collegate ai canali teorici identificati. I risultati mostrano un'associazione positiva e statisticamente significativa tra l'efficacia del governo, l'iscrizione scolastica secondaria e l'HDI, mentre la dipendenza petrolifera diretta, la spesa sanitaria pubblica e la stabilità politica non risultano statisticamente significative in questo

campione. L'evidenza relativa a una relazione di cointegrazione di lungo periodo risulta debole e non conclusiva.

Data la ridotta ampiezza campionaria e la natura esplorativa dell'esercizio empirico, la tesi non pretende di stabilire un nesso causale definitivo, ma offre un'evidenza descrittiva e correlazionale coerente con il filone istituzionalista della letteratura sulla maledizione delle risorse, individuando nella qualità della governance e nell'investimento in capitale umano le associazioni più robuste con lo sviluppo umano in Nigeria.

During the preparation of this thesis, the author used generative artificial intelligence tools to assist with data analysis, drafting revisions, and formatting. All analytical decisions, interpretations, and conclusions are the author's own. The author reviewed and takes full responsibility for the content of this thesis.

## TABLE OF CONTENTS

|                                                                                         |    |
|-----------------------------------------------------------------------------------------|----|
| Chapter 1: Context and overview of the study.....                                       | 8  |
| 1.1 Introduction: Nigeria and the resource curse paradox.....                           | 8  |
| 1.2 The research problem.....                                                           | 10 |
| 1.3 Thesis structure and analytical approach.....                                       | 11 |
| Chapter 2: The resource curse and the Dutch disease.....                                | 12 |
| 2.1 Introduction on Nigeria's poverty.....                                              | 12 |
| 2.2 The resource curse.....                                                             | 13 |
| 2.3 The dutch disease: Orvoty & Jibrilla, 2019.....                                     | 14 |
| 2.4 Inference on chapter 2.....                                                         | 18 |
| Chapter 3: A comparative analysis: is it possible to escape the resource curse?.....    | 18 |
| 3.1 Introducing the 4 countries that escaped the curse.....                             | 18 |
| 3.2 Norway's oil wealth.....                                                            | 19 |
| 3.3 Botswana's diamond industry.....                                                    | 19 |
| 3.4 The oil boom in Indonesia.....                                                      | 20 |
| 3.5 The Malaysian oil industry.....                                                     | 21 |
| 3.6 An important lesson from the successful development of resource-rich countries..... | 22 |
| Chapter 4: The quality of life.....                                                     | 23 |
| 4.1 Introduction on the quality of life.....                                            | 23 |
| 4.2 The determinants of quality of life.....                                            | 23 |
| 4.3 Measuring the quality of life.....                                                  | 25 |

|                                                                                 |    |
|---------------------------------------------------------------------------------|----|
| 4.4 What does the MPI measure?.....                                             | 26 |
| 4.5 What does the HDI measure?.....                                             | 28 |
| 4.6 Conclusion on the HDI and MPI metrics.....                                  | 30 |
| Chapter 5: Human Capital and Educational Development in Nigeria.....            | 31 |
| 5.1 Introduction to the chapter: what is the purpose of education?.....         | 31 |
| 5.2 The weaknesses of Nigeria's educational system.....                         | 32 |
| 5.3 Secondary school enrollment rate.....                                       | 33 |
| 5.4 Conclusive arguments about education.....                                   | 35 |
| Chapter 6: The dependency on the oil industry and its value leakage points..... | 36 |
| 6.1 Introducing the oil industry.....                                           | 36 |
| 6.2 Oil theft and weak surveillance.....                                        | 37 |
| 6.3 The Production Sharing Contract: Ogunleye, 2015.....                        | 39 |
| 6.4 Fuel exports as a total of merchandise exports.....                         | 40 |
| 6.5 Conclusion on the oil industry discussion.....                              | 42 |
| Chapter 7: Institutional weakness.....                                          | 42 |
| 7.1 Introduction on institutional weakness.....                                 | 42 |
| 7.2 The rentier state of Nigeria: how easy money erodes education.....          | 44 |
| 7.3 Government Effectiveness.....                                               | 46 |
| 7.4 Conclusion on institutional weakness.....                                   | 47 |
| Chapter 8: The effects of political violence.....                               | 48 |
| 8.1 Introduction on Nigeria's political violence.....                           | 48 |
| 8.2 The deterioration of mental health due to conflict.....                     | 48 |

|                                                                           |    |
|---------------------------------------------------------------------------|----|
| 8.3 The consequences on prices and transportation.....                    | 49 |
| 8.4 Distrust in public institutions.....                                  | 50 |
| 8.5 The Political Stability Index.....                                    | 51 |
| 8.6 An overview of the chapter's findings.....                            | 52 |
| Chapter 9: An overview of public spending.....                            | 53 |
| 9.1 Introduction on Nigerian public spending.....                         | 53 |
| 9.2 The components of government spending in Nigeria.....                 | 54 |
| 9.3 Public health spending as a % of total spending.....                  | 58 |
| 9.4 Conclusion on public spending.....                                    | 59 |
| Chapter 10: Macroeconomic Conditions in Nigeria.....                      | 59 |
| 10.1 Introducing Nigeria's macroeconomic conditions.....                  | 59 |
| 10.2 GDP per capita.....                                                  | 60 |
| 10.3 Inflation Rate.....                                                  | 61 |
| 10.4 Unemployment Rate.....                                               | 53 |
| 10.5 Interest Rates.....                                                  | 65 |
| 10.6 Evaluation of the indicators discussed and choice for the model..... | 67 |
| Chapter 11: Theoretical Framework and Conceptual Integration.....         | 68 |
| 11.1 Introduction and Theoretical Context.....                            | 68 |
| 11.2 Conceptual Transmission Channels and Hypotheses.....                 | 70 |
| 11.3 Methodological Assumptions and Model Framing.....                    | 72 |
| 11.4 Positioning of the Study within the Existing Literature.....         | 73 |
| Chapter 12: Data and Empirical Procedure.....                             | 74 |

|                                                                           |    |
|---------------------------------------------------------------------------|----|
| 12.1 Sample Overview and Dataset Structure.....                           | 74 |
| 12.2 Descriptive Statistics and Time-Series Properties.....               | 76 |
| 12.3 Unit Root Diagnostics (Augmented Dickey-Fuller Tests).....           | 76 |
| 12.4 Baseline Six-Variable OLS Model Estimation.....                      | 79 |
| 12.5 Parsimonious ARDL Specification and Cointegration Tests.....         | 81 |
| 12.6 Robustness Considerations: The HC-HDI Structural Overlap.....        | 85 |
| Chapter 13: Empirical Results, Interpretation, and Policy Discussion..... | 86 |
| 13.1 Empirical Findings and Hypothesis Evaluation.....                    | 86 |
| 13.2 Econometric Interpretation and Comparative Analysis.....             | 88 |
| 13.3 Methodological Limitations of the Empirical Exercise.....            | 89 |
| 13.4 Policy Discussion.....                                               | 91 |
| 13.5 Summary and Conclusion.....                                          | 92 |
| Appendix.....                                                             | 94 |
| Reference List.....                                                       | 97 |

## ***Chapter 1: Context and overview of the study***

### ***1.1 Introduction: Nigeria and the resource curse paradox***

The resource curse remains one of the most enduring paradoxes in development economics, describing how nations endowed with abundant natural capital frequently experience slower economic growth and inferior social development compared to their resource-scarce counterparts. Instead of translating primary commodity wealth into sustained national prosperity, countries rich in oil, gas, and mineral reserves often succumb to severe structural vulnerabilities, including widespread institutional decay, political rent-seeking, and severe state capture. The reliance on finite extractive revenue creates a fiscal environment where governments prioritize the capture and redistribution of resource rents over the development of robust tax bases or accountable public administration. Consequently, domestic investment in labor-intensive, broadly accessible sectors such as manufacturing, agriculture, and high-quality public education is routinely neglected. In contrast, resource-poor nations are structurally compelled to build resilient governance structures, foster economic diversification, and aggressively invest in human capital. By prioritizing competitive markets, educational infrastructure, and continuous innovation, these resource-scarce economies cultivate adaptive institutional frameworks capable of driving long-term productivity and human development<sup>1</sup>.

This thesis examines how the mechanism of the resource curse has shaped the socio-economic trajectory of Nigeria, a country that possesses Africa's largest hydrocarbon reserves alongside some of its most fragile governance systems. Nigeria presents a compelling case study of structural divergence, characterized by vast developmental potential alongside persistent

---

<sup>1</sup> Orvoty, J. J., & Jibrilla, A. (2019). An empirical evaluation of the impact of Dutch disease on the Nigerian agricultural sector (1981–2016). *International Journal of Financial Management and Economics*, 2(1), 9–19. <https://doi.org/10.33545/26179210.2019.v2.i1a.10>

economic stagnation. Although headline macroeconomic indicators, such as real gross domestic product, periodically display positive trajectories during favorable commodity price cycles, these aggregate expansion figures conceal severe internal welfare deficits. The benefits of petroleum wealth remain concentrated within narrow elite networks, while the broader population faces persistent inflationary shocks, systemic currency depreciation, and a continuous erosion of household purchasing power<sup>2</sup>.

This institutional and economic trajectory stands in stark contrast to Nigeria's pre-petroleum structure. Prior to the 1956 discovery of commercial crude oil reserves in the Niger Delta, the nation maintained a self-sustaining and diversified economic structure, supported by a productive agricultural export base and a stable currency. The subsequent pivot toward a monoculture petroleum economy fundamentally restructured the nation's political economy. As crude oil exports grew to dominate foreign exchange earnings and state budgets, traditional agricultural and manufacturing sectors suffered severe neglect and decline. This dynamic triggered a structural deterioration in the value of the Naira, exposed the domestic economy to external terms-of-trade shocks, and systematically weakened the provision of critical public goods, ultimately depressing the long-run quality of life for the Nigerian population.

---

<sup>2</sup> Sachs, J. D., & Warner, A. M. (1995). *Natural resource abundance and economic growth* (NBER Working Paper No. 5398). National Bureau of Economic Research. <https://doi.org/10.3386/w5398>  
Cited by: 9916

## ***1.2 The research problem***

The research question inquired by the thesis is the following:

*Through which transmission mechanisms is the resource curse associated with quality of life outcomes in Nigeria?*

The explicit focus of this paper is to identify and evaluate the primary economic, institutional, and policy channels through which Nigerian oil dependency has hindered broad-based human development and hampered the average quality of life over recent decades. The Nation represents an exceptionally interesting and valuable subject to analyze within development economics because it exhibits a long history of political instability, fiscal shocks, institutional weaknesses, and low human development outcomes - all of which have been directly or indirectly produced by its extreme structural dependence on petroleum revenues.

The final section of this thesis synthesizes the empirical findings to construct a rigorous theoretical framework that advances the academic discourse on resource-dependent economies while providing actionable policy insights. By systematically mapping the structural channels through which the resource curse operates in Nigeria, this study provides future researchers with a grounded analytical baseline to evaluate non-linear developmental trajectories in similar primary-commodity exporter contexts. Identifying the primary institutional bottlenecks, fiscal misallocations, and sector-specific vulnerabilities - particularly the systematic crowding out of agriculture, manufacturing, and public investment in human capital - allows for a precise diagnosis of the mechanism through which petroleum dependence depresses broad-based quality of life.

Beyond its academic utility, this diagnostic approach provides a strategic framework for targeted policy intervention. Delineating the empirical linkages between resource revenue volatility, governance deficits, and human development indicators highlights the specific structural areas requiring urgent reform. Mitigating the adverse impacts of the resource curse in Nigeria necessitates moving past generic economic stabilization programs toward focused institutional restructuring. This includes enforcing fiscal rules to smooth commodity price shocks, institutionalizing transparent public financial management, and strategically reallocating resource rents into targeted social expenditure. Ultimately, by pinpointing the precise transmission mechanisms of the resource curse, this study offers concrete pathways for policymakers to break the cycle of economic vulnerability, insulate critical social sectors, and foster long-term, sustainable human development.

### ***1.3 Thesis structure and analytical approach***

To systematically address the core research problem, the thesis is structured into two main, interconnected parts: a comprehensive theoretical and comparative literature review, followed by a quantitative empirical investigation.

The literature review maps out the theoretical transmission channels underlying the resource curse hypothesis, systematically examining how institutional governance indicators, fiscal allocation mechanisms, and public investments in human capital impact multidimensional quality of life over extended time horizons. It contextualizes Nigeria's trajectory against international comparative benchmarks to highlight the institutional and policy divergences that dictate resource success or failure. Finally, it provides a theoretical framework to identify the most robust analytical proxies for each thematic area, establishing a clear conceptual foundation for the operationalization of the subsequent empirical investigation.

The second part of the thesis translates these theoretical and historical insights into an empirical analytical framework. By incorporating the key macroeconomic, governance, and social determinants highlighted in the literature, the initial goal of the empirical section is to specify and test a dynamic quantitative model capable of capturing both short-run fluctuations and long-run structural relationships. Through this approach, the study aims to evaluate the empirical linkages between resource dependency, public policy choices, and human development indicators, ultimately providing a robust explanatory and predictive analysis of Nigeria's development trajectory.

## **Chapter 2: The resource curse and the Dutch disease**

### ***2.1 Introduction on Nigeria's poverty***

Nigeria has the 6th largest workforce globally and the first in Africa. Its population is close to 245 million people, and more than half of them live below the threshold of the poverty line<sup>3</sup>. This data is striking because it infers that the nation suffers from growth problems that seem to have developed internally in the society. This chapter examines the factors that drew Nigeria into the resource curse, identifying its core causes and consequences while outlining the established literature. Following this, the chapter explores the Dutch disease - a specific economic mechanism closely linked to the resource curse - to show how these combined forces create a powerful obstacle to national development and human well-being: poverty.

---

<sup>3</sup> World Bank. (2024). *World Development Indicators: Population, labor force, and poverty headcount ratio for Nigeria*. World Bank Data Group.  
<https://databank.worldbank.org/reports.aspx?source=world-development-indicators>

## 2.2 *The resource curse*

In 1993 Richard M. Auty popularized the term “resource curse” by building on earlier discussions about the economic challenges faced by mineral-dependent economies such as Nigeria, Venezuela, and Mexico. Shortly after, in 1995, Sachs and Warner provided influential empirical evidence supporting this idea, showing that countries with high dependence on natural resource exports tended to experience slower economic growth, even after controlling for other macroeconomic factors. Since then, the “resource curse” has become a widely accepted framework in development economics, although later research has emphasized that it is not inevitable and depends heavily on institutional quality<sup>4</sup>.

The curse does not affect all resource-rich countries in the same way because strong and inclusive institutions can mitigate or even prevent its negative effects. In some cases, countries have managed to “escape” the resource curse, but this has typically required favourable institutional arrangements, coherent long-term policy planning, and historically specific circumstances. In contrast, Nigeria provides a particularly illustrative case of how these conditions can fail to materialize. Oil was discovered during the late colonial and early post-independence period - a highly unstable and uncertain context - with independence achieved in 1960 and the state still in the process of institutional consolidation<sup>5</sup>. In this environment, the government lacked a stable long-term development strategy and increasingly oriented its economic model toward oil revenues, rather than building a diversified tax base and productive non-oil sectors. As a result, the economy became heavily dependent on resource rents, and structural diversification was limited. Over time, this path dependency made it significantly more difficult to establish broad-based and sustainable growth, as

---

<sup>4</sup> Auty, R. M. (1993). *Sustaining development in mineral economies: The resource curse thesis*. Routledge.

<sup>5</sup> Mahdavy, H. (1970). The patterns and problems of economic development in rentier states: The case of Iran. In M. A. Cook (Ed.), *Studies in the Economic History of the Middle East* (pp. 428–467). Oxford University Press.

institutional weaknesses, rent dependence, and sectoral imbalance became embedded features of the economy.

In recent decades, Nigeria has been extensively studied by researchers who argue that it exhibits clear symptoms of the resource curse. Empirical evidence suggests that the country has experienced lower growth rates and weaker development outcomes compared to less resource-rich economies. Corruption and oil dependence have played a significant role in shaping Nigeria's economic trajectory. However, given recent improvements in economic management and reforms in the oil sector, it might be expected that Nigeria is now closer to escaping the resource curse. Despite this, recent studies suggest that the country still struggles to translate its resource wealth into sustainable development outcomes<sup>6</sup>.

As an emerging economy, Nigeria is projected to record a GDP growth rate of approximately 4% in 2026, significantly exceeding the global average of 3.1%. However, GDP per capita is expected to grow by approximately 2%, below the global average of 2.5%, highlighting the challenges Nigeria faces in translating aggregate economic growth into improvements in individual living standards. A closer examination reveals that growth has been highly volatile over the past decades, driven largely by fluctuations in oil prices and external shocks, rather than by sustained diversification or productivity gains<sup>7</sup>.

Moreover, persistent macroeconomic imbalances continue to undermine real economic welfare. High inflation - currently around 15%, despite being one of the more stable readings of the last decade - erodes purchasing power, while repeated currency devaluations further

---

<sup>6</sup> Abdullahi, M., & Nabado, I. K. (2025). Institutional quality, oil sector governance, and the resource curse narrative in Nigeria. *African Development Review*, 37(1), 88–104.

<sup>7</sup> International Monetary Fund. (2026). *World Economic Outlook: Managing divergent paths and growth dynamics*. IMF Publication Services. <https://www.imf.org/en/Publications/WE0>

reduce real incomes and increase economic uncertainty. Combined with weak and uneven real income growth, these factors help explain why poverty levels have remained stubbornly high and have shown limited improvement over time. According to the Multidimensional Poverty Index published by the Nigerian Bureau of Statistics in 2026, approximately 56% of the population is multidimensionally poor, meaning that over 140 million people experience simultaneous deprivations in key areas such as health, education, and basic living standards. Taken together, these indicators suggest that aggregate GDP growth figures mask deep structural challenges, and therefore do not substantially weaken the broader argument regarding the persistence of resource-curse-related constraints in Nigeria's development trajectory<sup>8</sup>.

### ***2.3 The dutch disease: Orvoty & Jibrilla, 2019***

The resource curse is widely accepted as an explanation for the unsuccessful governance of Nigeria, but in reality it is only the broader outcome of past decisions. Indeed, the specific mechanism which ignited the devaluation of the Nigerian Naira and the stagnation of the economy is named the Dutch disease, an economic phenomenon developed by Corden & Neary (1982) that occurs when there is a rapid growth in one very profitable sector causing a great influx of foreign investment. This leads to the appreciation of the National currency, which exhibits by reducing the foreign investment in industries like manufacturing and agriculture as prices spike, resulting in a loss of competitiveness and market degradation.

The effects of Dutch disease did not emerge immediately after the expansion of the oil industry. During the period from 1968 to 1980, the economy experienced a prolonged boom, with annual growth rates frequently reaching double digits and, in some years, exceeding

---

<sup>8</sup> National Bureau of Statistics. (2026). *Nigeria Multidimensional Poverty Index and social indicators report*. NBS Publications. <https://nigerianstat.gov.ng>

20%. This rapid expansion created the impression that oil revenues were generating broad-based economic development and masked the growing dependence of the economy on a single export sector. As a result, policymakers and investors often interpreted the surge in national income as evidence of sustainable growth rather than increasing structural vulnerability.

By the early 1980s, however, the limitations of this growth model became increasingly apparent. Economists observed that the oil sector was driving a disproportionate share of economic activity, while traditional sectors such as agriculture and manufacturing stagnated or declined in relative importance. As oil prices became more volatile and external conditions worsened, the economy experienced recurrent recessions, weaker growth performance, and reduced diversification. These developments are consistent with the Dutch disease hypothesis, which predicts that a resource boom can undermine the competitiveness of other productive sectors and leave an economy excessively dependent on natural resource revenues. Empirical evidence presented by Orvoty and Jibrilla (2019)<sup>9</sup> supports this interpretation, highlighting the adverse effects of oil dependence on Nigeria's agricultural sector and long-term economic development.

Before the discovery of oil in 1956, Nigeria's economy was mainly driven by agriculture and the export of primary commodities such as cocoa, palm oil, groundnuts, and rubber. The agricultural sector served as the foundation of national development, employing approximately three-quarters of the labor force and generating around two-thirds of the country's export earnings. Agricultural production not only supported economic growth but also ensured a substantial degree of food self-sufficiency.

---

<sup>9</sup> Orvoty, J. J., & Jibrilla, A. (2019). An empirical evaluation of the impact of Dutch disease on the Nigerian agricultural sector (1981–2016). *International Journal of Financial Management and Economics*, 2(1), 9–19. <https://doi.org/10.33545/26179210.2019.v2.i1a.10>

The rapid expansion of the oil industry during the 1970s fundamentally altered the structure of the Nigerian economy. As oil revenues increased, agriculture gradually lost its dominant position, receiving less investment and policy attention. Domestic food production struggled to keep pace with growing demand, resulting in a rising dependence on imported food products. Today, agriculture remains an important source of employment, accounting for roughly one-third of the labor force, but contributes only a small share of total export revenues.

The Dutch disease framework explains this transformation through two main mechanisms: the spending effect and the resource movement effect. The spending effect occurs when a resource boom increases national income, leading to higher levels of public and private expenditure. Rising domestic demand places upward pressure on prices and often causes an appreciation of the real exchange rate, reducing the international competitiveness of non-resource sectors such as agriculture and manufacturing<sup>10</sup>.

The resource movement effect arises when labor and capital are attracted from traditional sectors into the booming resource sector and related industries. Higher wages and greater profit opportunities in the expanding oil industry encourage workers and investors to reallocate resources away from agriculture. Over time, this shift can reduce agricultural productivity and output, contributing to economic concentration in the resource sector and increasing vulnerability to fluctuations in commodity prices. Empirical evidence of Dutch disease in Nigeria suggests that, in the long run, a 1% increase in oil exports is associated with a 16% decline in agricultural commodity exports<sup>11</sup>.

---

<sup>10</sup> Corden, W. M., & Neary, J. P. (1982). Booming sector and de-industrialisation in a two-sector small open economy. *The Economic Journal*, 92(368), 825–848. <https://doi.org/10.2307/2232670>

<sup>11</sup> Ogbonna, B. C., Osondu, C. K., & Nwabunike, C. U. (2013). Oil exploitation and agricultural commodity export in Nigeria: An empirical evaluation of the Dutch disease hypothesis. *Journal of Economics and Sustainable Development*, 4(16), 134–145.

## ***2.4 Conclusions on the resource curse and Dutch disease***

Ultimately, the historical trajectory of Nigeria demonstrates that the resource curse and Dutch disease are not merely abstract theoretical concepts, but systemic realities that have profoundly shaped the nation's economic landscape. The heavy reliance on oil rents, coupled with the systematic neglect of non-oil productive sectors like agriculture, has locked the economy into an unstable cycle of volatility, currency appreciation pressures, and deep-seated structural imbalances. As contemporary data shows, high aggregate growth projections and resource wealth continue to coexist with stubborn poverty and severe human development deficits. Overcoming these barriers will require more than temporary economic reforms; it demands a fundamental shift toward institutional strengthening, economic diversification, and targeted investments that decouple national well-being from the fluctuations of the global oil market.

## ***Chapter 3: A comparative analysis: is it possible to escape the resource curse?***

### ***3.1 Introducing the 4 countries that escaped the curse:***

Natural resources do not automatically generate underdevelopment. The experiences of several countries demonstrate that resource wealth can be transformed into long-term prosperity when supported by strong institutions and strategic investment. However, it is a statistically rare feat to obtain as demonstrated by the fact that only 4 countries rich in resources out of 65 have been able to achieve long-term growth and high foreign investments<sup>12</sup>. This chapter aims to discuss the reasons why and how Norway, Botswana,

---

<sup>12</sup> Mehlum, H., Moene, K., & Torvik, R. (2006). Curbed by institutions? Raw materials and economic performance. *The Economic Journal*, 116(508), 1–20.  
<https://doi.org/10.1111/j.1468-0297.2006.01046.x>

Indonesia, and Malaysia were able to escape the resource curse in order to collect information relevant for Nigeria's discussion.

### ***3.2 Norway's oil wealth:***

Norway discovered oil in 1969 in the North Sea. The long-term outcome of this discovery was incredibly positive as the Nation consistently ranks among the highest countries globally in terms of quality of life. This is reflected in key development indicators such as the Human Development Index, where Norway ranks second worldwide, as well as in levels of income per capita, where it also ranks in the top 10 globally.

Prior to oil discovery, Norway was already a Nation with strong democratic institutions, a highly educated population, and a diversified economy based on trade, fishing, and manufacturing. The political stability of the nation when oil was discovered was fundamental for the sustainable growth of the economy because it provided a sound backbone for the economy through a strong rule of law and a set of structural advantages which Nigeria did not possess at the time of oil discovery<sup>13</sup>.

### ***3.3 Botswana's diamond industry:***

Botswana is regarded as one of the most successful examples of a country that escaped the resource curse. When diamond deposits were discovered in 1966, the Nation experienced a rapid economic growth and became one of the fastest-growing countries in the world.

Differently from Nigeria, it was able to transform natural wealth into prosperity for its population by promoting fiscal discipline and transparency. Diamond revenues were systematically reinvested into education, healthcare, and infrastructure while other industries

---

<sup>13</sup> Holden, S. (2013). Avoiding the resource curse: The case of Norway. *Energy Policy*, 63, 870–876. <https://doi.org/10.1016/j.enpol.2013.09.057>

were being supported rather than neglected. This allowed it to maintain control over the diamond industry, foster foreign investment, and create a stable institutional framework, rather than create a stagnating economy and a corrupted environment.

Indicators of quality of life showcase that Botswana has been performing consistently better than Nigeria for decades. For instance, its Human Development Index is one of the highest in Africa and access to education has greatly expanded thanks to public investment<sup>14</sup>.

The Botswana experience therefore challenges the concept that resource abundance leads to poor development outcomes. However, differences in institutional quality, public investment, and the geo-political context of the Nation can heavily influence its growth.

### ***3.4 The oil boom in Indonesia:***

Indonesia drilled into oil reserves for the first time in 1885, becoming one of the first oil industries in the world. When oil became fundamental for the global economy in the 1970s, Indonesia was able to avoid the Dutch disease by investing heavily in agriculture, especially in rice production because its territory had already proved to be suited for such good. This allowed the Nation to avoid the collapse of traditional sectors. When oil price volatility showed in the 1980s, Indonesia introduced further measures aimed at attracting foreign investment and reducing barriers to industrial development. Consequently, oil became less “important” for the country’s economy and the risks associated with it also diminished, allowing the quality of life to increase as indicated by literacy rates of 95%, a Human Development value of 0.75, and a life expectancy of 72 years<sup>15</sup>.

---

<sup>14</sup> Sarraf, M., & Jiwanji, M. (2001). *Beating the resource curse: The case of Botswana* (Environment Department Papers No. 83). The World Bank.

<sup>15</sup> Rosser, A. (2007). Escaping the resource curse: The case of Indonesia. *Journal of Contemporary Asia*, 37(1), 38–58. <https://doi.org/10.1080/00472330601104595>

The Indonesian experience is very interesting for the purpose of the paper because it shows that escaping the resource curse does not require perfect institutions. During the oil boom, Indonesia had significant structural challenges and inefficiencies such as corruption and political instability, but institutions were nonetheless able to identify the risks of the oil industry and create a growth-oriented model. According to Mehlum, Moene, and Torvik (2006) the socio-economic impact of natural resources largely depends on whether institutions promote productive activities or rent-seeking behaviors, indicating that the institutional system can play a fundamental role in the development of a country.

### ***3.5 The Malaysian oil industry:***

Malaysia discovered oil and gas reserves in the 20th century. Similarly to other countries, the two industries did not boom until the 1960s when production and demand spiked. Although Malaysia did not possess institutions as strong as those found in Norway, its government maintained sufficient administrative capacity to implement long-term development plans and attract foreign investment. During the 1970s and 1980s, policymakers established industrial zones, improved transportation networks, and created incentives for multinational corporations to invest in the country. These policies transformed Malaysia into one of Southeast Asia's most important manufacturing hubs, particularly in electronics and semiconductor production.

A key factor in the Nation's success was the diversification in its economic model. Standard industries like agriculture, manufacturing, infrastructure, and education represented an important share of government earnings as they were monitored with care in order to avoid the Dutch disease. Literacy rates rose above 95%, educational opportunities expanded, and a

more skilled workforce emerged. Improvements in healthcare and public services contributed to substantial gains in life expectancy and overall living standards. Today, Malaysia's Human Development Index exceeds 0.80 and life expectancy is approximately 76 years, considerably higher than the equivalent indicators in Nigeria<sup>16</sup>.

### ***3.6 An important lesson from the successful development of resource-rich countries:***

The experiences of Norway, Botswana, and Indonesia demonstrate that the resource curse is not an inevitable outcome of resource abundance, but rather the result of how institutions, policy choices, and initial structural conditions interact at the time of resource discovery. Despite differences in geography, political systems, and levels of institutional development, all three countries share a common pattern: resource revenues were not allowed to fully replace other productive sectors of the economy, but were instead partially reinvested into human capital formation, infrastructure, and economic diversification. Norway benefited from pre-existing strong institutions and political stability, Botswana from prudent post-independence fiscal management and disciplined governance of diamond revenues, and Indonesia from strategic development planning that actively sought to protect agriculture and later promote industrialisation. In all cases, resource wealth was treated as a tool for transformation rather than a substitute for development, allowing these economies to expand manufacturing, strengthen agriculture, and improve public services over time. As a result, each country achieved significant improvements in quality of life, reflected in higher levels of income, education, and life expectancy compared to many resource-dependent economies. In contrast, countries that failed to escape the resource curse, such as Nigeria, were often characterised by weaker institutions at the time of resource discovery, greater dependence on extractive revenues, and insufficient diversification of their economic base. The comparative

---

<sup>16</sup> Vincent, J. R., & Ali, R. M. (1997). *Environment and development in a resource-rich economy: Malaysia under the New Economic Policy*. Harvard University Press.

evidence therefore supports the central argument of this chapter: the decisive factor in determining whether natural resources become a blessing or a curse is not the presence of resources themselves, but the capacity of institutions to convert resource rents into sustained, broad-based development.

## ***Chapter 4: The quality of life***

### ***4.1 Introduction on the quality of life***

The parameter to measure quality of life is multidimensional because several different factors have to be taken into consideration to accurately account for it. In “Development as Freedom”, the Nobel prize winner Amartya Sen argues that economic growth alone cannot be an indicator of development because it does not guarantee the expansion of people’s capabilities and freedoms<sup>17</sup>. This concept pertains to Nigeria because the average quality of life does not grow coherently with the economic state of the Nation.

This chapter aims to define the quality of life by discussing the factors which contribute to the well-being of people. Furthermore, a discussion about the best measures of Quality of Life - through the analysis of MPI and HDI relative to the performance of Nigeria - aims to operationalize the variable in view of the empirical chapters of the paper.

### ***4.2 The determinants of quality of life:***

Amartya Sen discusses the idea that two countries may have the same GDP size and totally different development outcomes. The comparison between Nigeria and Vietnam provides a useful illustration of this argument. Indeed, both Nations have large developing economies which experienced periods of rapid growth in the last decades, and yet the outcomes they achieved are very different. For instance, Nigeria has a population of 242 million inhabitants,

---

<sup>17</sup> Sen, A. (1999). *Development as freedom*. Oxford University Press.

a lot of natural wealth due to the presence of oil reserves within its borders, and a weak institutional system which does not allow oil revenue to translate into higher living standards. On the other hand, Vietnam has a population of 102 million people, an economic model focused on industrial exports and human capital development, and the indicators associated with quality of life suggest that it performs significantly better than Nigeria despite its absence of natural assets.

In the discussion of measuring quality of life, standard income indicators such as GDP per capita are useful to an extent because they provide some information about a Nation's development, but they do not describe the real living standards of a family within the society. For these reasons, our measure of quality of life has to combine the indicators of income, education, and health all in one measure.

Educational outcomes are very important indicators of a nation's level of development, as they reflect both the quality of human capital and the accessibility of opportunities available to the population. Literacy rates, in particular, provide a useful measure of a country's ability to equip its citizens with the basic skills necessary for economic participation and social mobility. In Vietnam, literacy rates exceed 95%, reflecting decades of sustained investment in education and human capital development. By contrast, estimates for Nigeria's literacy rate generally range between 62% and 70%<sup>18</sup>, depending on the source and methodology employed. This significant gap suggests that a larger proportion of the Nigerian population faces barriers to educational attainment, including inadequate funding, regional disparities, insecurity, and limitations in educational infrastructure. As a result, Nigeria has been less successful in developing the skilled workforce required to support long-term economic transformation and productivity growth.

---

<sup>18</sup> National Bureau of Statistics. (2020). *2019 poverty and inequality in Nigeria: Executive summary*. Federal Republic of Nigeria. <https://nigerianstat.gov.ng>

Healthcare outcomes reveal a similarly pronounced divergence between the two countries. Life expectancy at birth, widely regarded as one of the most comprehensive indicators of overall well-being, stands at approximately 75 years in Vietnam compared to only 55 years in Nigeria. A difference of roughly two decades is substantial and reflects disparities in access to healthcare services, disease prevention, nutrition, sanitation, and public health infrastructure. Furthermore, Vietnam records significantly lower infant and maternal mortality rates, indicating a more effective healthcare system and greater access to essential medical services. These indicators suggest that economic growth in Vietnam has been more successfully translated into improvements in human welfare, whereas Nigeria continues to face significant challenges in converting its economic potential and resource wealth into tangible improvements in the quality of life of its population.

Sen's argument therefore provides a theoretical foundation which is very useful to understand Nigeria's development challenges. It has been seen that economic richness does not guarantee a wealthier nor healthier population, for this reason the central issue is whether the Nation will become able to improve the average quality of life for its citizens in the next decades.

#### ***4.3 Measuring the quality of life:***

Since economic growth KPIs are not the best measure of wealth, they are also not the best measure of poverty. Measuring the quality of life is a complex task because many of its aspects are not captured by income alone such as living standards, access to services and overall human welfare. GDP per capita can determine the average productivity of a population, but it does not capture the inequality of its distribution. For this reason, development economics is shifting toward an approach focused on multidimensional frameworks that incorporate education, health, and living conditions.

The Multidimensional Poverty Index offers a detailed measure of deprivation within a country at household level, measuring poverty in the three dimensions of health, education, and living standards<sup>19</sup>. The MPI is capable of identifying individuals who suffer multiple overlapping deprivations even if their income alone might not classify them as poor. This framework is very relevant to the Nigeria study because often living conditions in the country are not explained by income levels. High MPI values indicate that a high proportion of the population experiences simultaneous deprivations in different areas of life. Nigeria's score of 0.257 - from the 2022 National Bureau of Statistics Report<sup>20</sup> - indicates that poor people experience just over one-quarter of all possible deprivations. As the number of deprivations in the life of citizens increases, the MPI score also increases.

#### ***4.4 What does the MPI measure?***

The Multidimensional Poverty Index is a measure and policy tool developed by the Oxford Poverty and Human Development Initiative and the United Nations Development Program. The MPI value is calculated by combining the Incidence - which is the proportion of the population that is multidimensionally poor - and the Intensity - the average deprivation score among poor people - and it measures the share of possible deprivations that poor people experience. Nigeria initially adopted the standard MPI to evaluate its poverty rate, but due to country specific circumstances there was a decision to develop a broader version of the Index, and Nigeria MPI was developed.

---

<sup>19</sup> Oxford Poverty and Human Development Initiative. (2022). *Global Multidimensional Poverty Index 2022: Unpacking deprivation bundles to reduce multidimensional poverty*. University of Oxford. <https://ophi.org.uk>

<sup>20</sup> National Bureau of Statistics. (2022). *Nigeria Multidimensional Poverty Index (2022) report*. Federal Republic of Nigeria. <https://nigerianstat.gov.ng>

### ***Which are the results of the MPI in Nigeria?***

The results of the framework measured that in rural areas the Multidimensional Poverty rate is 72%, while in urban areas it is 42%.<sup>21</sup> The most common sources of deprivation in the country are years of schooling and food insecurity - which are measures of school participation and undernutrition - but indicators vary sensibly depending on the area, suggesting that intervention should be tailored to specific areas. According to monetary indicators only 41% of people are poor, but the MPI indicates that 63% of people are multidimensionally poor. Education represents a critical area with a need for investment because 29% of age-schooled people do not attend school, and 94% of school-aged people are multidimensionally poor. This indicates that education has a strong connection with poverty. The most common deprivations in poor families are cooking fuel, time to healthcare, sanitation, housing materials, and food insecurity.

### ***Policy implications of MPI results:***

In 2019, the president of Nigeria committed to empowering 100 million people to escape poverty by 2030, a goal that seems very difficult to achieve despite being a step in the right direction for the well-being of the nation<sup>22</sup>. In order to evaluate the progress in this area, the Oxford Poverty and Human Development Initiative suggests Nigeria to take into consideration the measures of the MPI on top of the standard income KPIs, so that all types of poverty can be captured. The study also suggests Nigeria should focus on the implementation of National policies that can have an impact on clusters of deprivations - those policies that can improve several indicators simultaneously - such as water, sanitation, and education-related issues. Moreover, Nigeria should adopt a strategy to accelerate sustainable

---

<sup>21</sup> National Bureau of Statistics. (2022). *Nigeria Multidimensional Poverty Index (2022) report*. Federal Republic of Nigeria. <https://nigerianstat.gov.ng>

<sup>22</sup> United Nations Development Programme. (2020). *Human development report 2020: The next frontier - Human development and the Anthropocene*. UNDP. <https://hdr.undp.org>

transition to clean cooking fuels and technologies because more than half of the population who are multidimensionally poor cook with dung, wood, or charcoal. Finally, the Nation should prioritize child poverty reduction as 51% of total poor people are children.

A critical constraint of the Multidimensional Poverty Index is its recent adoption in Nigeria in 2018. Due to the lack of historical observations for earlier years, the resulting time horizon ( $N < 10$ ) is insufficient for dynamic time-series modeling, rendering the indicator unsuitable as a primary dependent variable for long-run empirical estimation. It is indeed very useful for theoretical understanding of the Nigerian context within the discussion of quality of life, but it cannot be used as a variable in the empirical section of the paper. For this reason, the best alternative measure is the HDI, a multidimensional indicator which has a wider data set.

#### ***4.5 What does the HDI measure?***

The Human Development Index measures a nation's baseline progress in human capabilities by combining three core areas of well-being: health, education, and standard of living. Instead of evaluating development purely through economic output such as GDP per capita, the HDI captures how national resources translate into actual human outcomes, specifically measured by life expectancy at birth, expected and mean years of schooling, and per capita Gross National Income<sup>23</sup>. In the Nigerian context, the HDI highlights a persistent structural divide between resource wealth and human well-being. Nigeria has consistently ranked within the UNDP's "Low Human Development" tier<sup>24</sup>, trailing both global averages and several Sub-Saharan African peers despite its position as Africa's largest economy. While the country has generated substantial fiscal revenue as a major crude oil exporter, this wealth has

---

<sup>23</sup> Klugman, J., Rodríguez, F., & Choi, H. J. (2011). The Human Development Index: Methodology and measurement. *World Development*, 39(2), 249–262. <https://doi.org/10.1016/j.worlddev.2010.07.004>

<sup>24</sup> Ajakaiye, O., Jerome, A., Olaniyan, O., Mahrt, K., & Woldekidan, E. (2021). Multidimensional poverty in Nigeria: Determinants and policy options. *Journal of Development Effectiveness*, 13(4), 385–404. <https://doi.org/10.1080/19439342.2021.1980381>

historically failed to produce proportional long-term gains in public infrastructure, health systems, or educational quality. Ultimately, systemic underfunding in basic healthcare, reflected in depressed life expectancy rates, alongside high educational dropout rates remain the primary structural bottlenecks holding down Nigeria's aggregate HDI performance over time.

### ***What are the results of HDI?***

In 2026, Nigerian HDI is projected at approximately 0.550, an underwhelming score that positions the Nation in the low-human development category. Nigeria exhibits an important divergence between its economic size and its human development outcomes. The country routinely carries a negative GNI-to-HDI rank differential - meaning its ranking in per capita income is substantially higher than its ranking on the HDI scale. This gap directly illustrates the "resource curse" mechanism: crude oil revenues expand macro-level Gross National Income, but institutional bottlenecks prevent those dollars from converting into functional schools, primary healthcare centers, or social safety nets. When evaluating Nigeria through the Inequality-Adjusted HDI, the country loses over a third of its baseline HDI value due to severe internal disparities. This loss is heavily driven by spatial inequality between the northern and southern geopolitical zones. Northern states experience disproportionately lower female literacy rates, higher out-of-school child counts, and restricted health access compared to southern states. A single aggregate national HDI hides this reality, whereas the IHDI framework highlights how income growth remains concentrated in urban financial hubs like Lagos while rural regions experience persistent multidimensional poverty.

In summary, the MPI is a very advanced measure of poverty while the HDI is an established measure of progress, and both of them are representative of the paper's dependent variable:

the quality of life. The results from the HDI and the MPI indicate that there is a gap between Nigeria's aggregate economic performance and the actual living conditions of its population. The aim of the paper is to investigate to what extent the resource curse is responsible for this gap.

#### ***4.6 Conclusion on the HDI and MPI metrics***

Ultimately, this chapter highlights that assessing Nigeria's development through conventional economic indicators like GDP alone provides an incomplete and misleading picture of national progress. By shifting the analytical lens toward multidimensional frameworks such as the Multidimensional Poverty Index and the Human Development Index, the evidence points to how resource wealth and aggregate economic growth have failed to translate into proportional improvements in human capabilities, health, and living standards. While data constraints limit the historical application of the MPI, the HDI shows that systemic institutional bottlenecks and severe regional disparities continue to depress Nigeria's human development outcomes. Recognizing these deep structural deficits is essential for understanding the true human cost of the resource curse and sets the stage for investigating how institutional reforms can finally bridge the gap between national wealth and citizen well-being.

## ***Chapter 5: Human Capital and Educational Development in Nigeria***

### ***5.1 Introduction to the chapter: what is the purpose of education?***

The Constitution of the Federal Republic of Nigeria states that the purpose of education is to contribute to the achievement of several national goals: the development of a free and democratic society; the creation of a just and egalitarian society; the promotion of a united, strong, and self-reliant nation; the establishment of a great and dynamic economy; and the provision of a land filled with bright opportunities for all citizens. These objectives reflect the central role that education is expected to play in Nigeria's social, political, and economic development. However, despite these ambitious aspirations, significant challenges continue to hinder progress toward their realization. This section examines the key factors that make it unlikely for Nigeria to achieve these educational and national objectives in the short term, focusing on the structural, economic, and institutional barriers that persist within the country. UNESCO generally recommends governments to invest between 15% to 26%<sup>25</sup> in education in order to ensure stable growth and equal possibilities for as many people as possible. In Nigeria, yearly funding for educational purposes has been hovering between 5% and 10% over the last decade, without ever reaching officially accepted standards. The 2050 agenda of Nigeria<sup>26</sup> - stipulated in 2020 by the government in collaboration with the private sector - announces that the Nation aims to become a top economy globally, to be self-sufficient and to reduce poverty through industrialization, diversification, and human capital development.

It is therefore fundamental for the Nation to invest more heavily in education in order to develop human capital, a resource which serves as the backbone of societal advancement.

---

<sup>25</sup> UNESCO. (2015). *Education 2030: Incheon Declaration and Framework for Action towards the achievement of Sustainable Development Goal 4*. UNESCO. <https://unesdoc.unesco.org>

<sup>26</sup> Ministry of Budget and National Planning. (2020). *Perspective plan for Nigeria Agenda 2050 and Medium-Term National Development Plan 2021–2025*. Government of Nigeria.

### ***5.2) The weaknesses of Nigeria's educational system:***

While research across all fields has continued to expand human knowledge at an accelerating pace, the curriculum taught in Nigerian schools has not been significantly updated since 1981<sup>27</sup>, and as a result it is increasingly becoming obsolete in the context of modern labour markets, where digital literacy and technical skills are now essential.

There is a clear disconnect between what is taught in schools, the content broadcast by national television, and the vast range of information available online, creating inconsistencies in how students engage with knowledge and skills development.

A 2012 inter-ministerial report on the state of Nigeria's education system found that only 47% of university professors hold a PhD - compared to developed economies where this figure is often close to 100% - suggesting structural weaknesses in academic qualification standards and teaching capacity<sup>28</sup>. In addition, teaching methods have frequently been described as outdated and insufficiently rigorous, further limiting educational outcomes.

Even with a higher investment in education problems persist because of corruption, which contributes to the misallocation of those public funds which are intended for educational investment, weakening institutional effectiveness and slowing down meaningful reform. Collectively, these issues contribute to an educational system that struggles to provide the level of skills development and opportunity that the population increasingly requires.

Another dramatic issue of the Nigerian context worsening educational outcomes are the

---

<sup>27</sup> National Universities Commission. (2012). *Report on the state of university education in Nigeria*. Federal Republic of Nigeria.

<sup>28</sup> National Universities Commission. (2012). *Report on the state of university education in Nigeria*. Federal Republic of Nigeria.

war conflicts in the northern regions of the country, which represents a huge barrier to education for students as more than 2000 schools have been either destroyed or closed for prevention. In several districts of the nation there is a very high rate of kidnapping, causing fear, disruption and reduced school enrollment. Violence is a huge problem for the Nigerian development, and part of the reason why it is difficult to spur prosperity and growth.

Some of the main beneficial effects of a high-quality educational system are the eradication of poverty, the uplifting of social security and safety, and the enforcement of human rights. On top of this, the Human Capital Theory suggests that education increases workers' skills and productivity, which in turn increase output and national income. These achievements would radically increase the quality of life of the Nigerian population, but they can only be achieved through an improvement of the currently obsolete educational system<sup>29</sup>.

This literature review on education outlined the broad and the specific weaknesses of the Nigerian educational system, building the case for which education is fundamental for a country's development. In the next chapters, the reasons for which education has such weaknesses are discussed through a focus on the resource curse, the Dutch-disease, the oil industry, and institutional weakness.

### ***5.3 Secondary school enrollment rate***

To measure the weaknesses in Nigeria's education system, we must select an indicator that provides consistent, reliable data over time. Several alternative metrics could theoretically capture educational outcomes and human capital deficits. For instance, national literacy rates,

---

<sup>29</sup> Ajakaiye, O., Jerome, A., Olaniyan, O., Mahrt, K., & Woldekidan, E. (2021). Multidimensional poverty in Nigeria: Determinants and policy options. *Journal of Development Effectiveness*, 13(4), 385–404. <https://doi.org/10.1080/19439342.2021.1980381>

primary school completion rates, or standardized test scores offer insights into student learning and foundational skills. Similarly, structural inputs like pupil-teacher ratios, spending per student, and tertiary enrolment rates reflect school funding and capacity.

However, in the Nigerian context, these alternative metrics suffer from severe data availability and continuity gaps. Data for primary completion, teacher quality, and standardized test performance are either published sporadically or completely unavailable for earlier decades. Because time-series econometrics requires continuous annual data over a long period, these missing observations rule out those options.

Consequently, this study uses the Secondary School Gross Enrolment Rate as the primary measure of educational weakness and human capital underdevelopment. Secondary education represents a crucial bridge in human development, marking the transition from basic literacy to functional cognitive skills, job readiness, and higher labor productivity. In Nigeria, secondary enrolment rates capture both demand-side issues, such as household poverty, child labor, and regional social barriers, as well as supply-side failures like poor infrastructure, lack of state funding, and security risks. By utilizing secondary enrolment, the model relies on a consistent historical indicator that reflects how educational constraints limit Nigeria's long-run human development.

Over the past two decades, Nigeria's Secondary School Gross Enrolment Rate experienced notable progress, doubling from approximately 24% in 2000 to over 46% by the early 2020s. This expansion reflects policy efforts like the Universal Basic Education framework, expanded public school construction, and growing household demand for formal credentials in an urbanizing economy.

However, despite this growth, a rate of 46% remains strikingly low when evaluated against both global standards and Nigeria's developmental needs. Because gross enrolment includes

students outside the typical age bracket, the net reality is that fewer than half of secondary-school-aged youth in Nigeria are actually in school. For context, the global average for secondary school gross enrolment exceeds 85%, leaving Nigeria far behind international benchmarks.

This low overall level creates a major bottleneck for human capital accumulation. Millions of adolescents drop out after primary school due to economic hardship, child labor pressures, and secondary fees for uniforms and materials. Furthermore, aggregate national figures hide severe geographical gaps: enrolment rates in southern states are significantly higher than in northern states, where security risks, school abductions, and cultural barriers disproportionately keep adolescents, especially young girls, out of the classroom. Even for those enrolled, low funding leads to overcrowded classrooms and undertrained teachers, meaning increased enrolment does not automatically translate into functional skill acquisition.

#### ***5.4 Conclusive arguments about education***

Ultimately, this chapter highlights that Nigeria's ambitious national goals and economic vision for 2050 remain critically constrained by deep-seated institutional and structural failures within its educational system. Chronic underfunding, obsolete curricula, severe security risks in the northern regions, and low secondary enrollment rates combine to prevent the country from building the human capital necessary for modern economic transformation. As the evidence indicates, boosting national prosperity and raising living standards will remain out of reach unless these foundational educational bottlenecks are addressed, paving the way for a closer look at how resource wealth and governance issues drive these persistent shortcomings. While the Human Development Index (HDI) inherently incorporates an educational component through its longevity, knowledge, and standard of living dimensions, including secondary school gross enrollment as an independent variable makes conceptual sense for this

analytical framework. Secondary school enrollment captures annual shifts in human capital accumulation - reflecting ongoing educational participation and systemic investments in schooling - whereas the HDI's education indicator operates as a cumulative, long-term summary measure. Incorporating this specific proxy allows the model to observe how educational capacity interacts with institutional variables and resource revenues, providing a detailed look at the educational transmission channel despite its inherent overlap with the composite index.

## ***Chapter 6: The dependency on the oil industry its value leakage points***

### ***6.1 Introducing the oil industry***

The strategic importance of oil extends beyond its contribution to exports. Petroleum revenues constitute a major source of government funding and play a crucial role in financing public expenditure, infrastructure development, and social programs. However, Nigeria's heavy dependence on oil has also exposed the economy to significant external vulnerabilities. International crude oil prices are notoriously volatile, responding rapidly to shifts in global supply and demand, geopolitical tensions, production decisions by the Organization of the Petroleum Exporting Countries (OPEC), and broader macroeconomic conditions. Price fluctuations can be substantial, with oil prices sometimes moving by tens of dollars per barrel within a matter of weeks. Such volatility has important implications for Nigeria's fiscal stability, foreign exchange earnings, and overall economic performance.

## **6.2) Oil theft and weak surveillance**

The oil industry in Nigeria has experienced substantial and persistent value losses over the past decades, largely driven by weak surveillance systems, infrastructure vulnerability, and a high level of organised criminal activity. One of the most significant sources of economic loss has been crude oil theft, which has become deeply embedded in parts of the Niger Delta oil supply chain. According to estimates compiled from Nigeria Extractive Industries Transparency Initiative (NEITI) audits and related sector analyses, Nigeria lost approximately 700 million barrels of crude oil between 2009 and 2025 through theft, illegal bunkering, and pipeline sabotage. At prevailing average international oil prices, this volume translates into an estimated financial loss of around \$45–50 billion, making it one of the largest resource-related revenue losses globally<sup>30</sup>.

These losses are primarily driven by three interconnected mechanisms. First, illegal bunkering operations involve the diversion of crude oil directly from pipelines using unauthorized connections, often supported by sophisticated criminal networks. Second, pipeline tapping allows continuous extraction of oil from a single point over extended periods, significantly increasing cumulative losses before detection. Third, widespread vandalism of pipelines and export infrastructure disrupts production flows, causes spills, and forces costly shutdowns of key facilities. Together, these activities not only reduce export volumes but also increase operational risks and security expenditures for both the state and private operators.

Beyond the direct loss of crude oil, the downstream refining sector has also suffered significant economic degradation. Nigeria's domestic refineries, including those in Port Harcourt, Warri, and Kaduna, have historically operated far below their installed capacity, often at utilisation rates below 30%. This underperformance is closely linked to crude supply

---

<sup>30</sup> Azebi, O. I. (2026). Oil theft and revenue loss in Nigeria. *Journal of Sustainable Development and Regulatory Economics*, 14(1), 45–62.

disruptions caused by theft, pipeline insecurity, and systemic inefficiencies in distribution networks. As a result, refineries generate lower output of refined petroleum products such as petrol, diesel, and aviation fuel, which reduces revenue generation and increases per-unit production costs due to high fixed operating expenses. In addition, frequent shutdowns and unstable feedstock supply have accelerated asset deterioration, further reducing the economic value of these facilities.

Overall, the combination of large-scale crude theft and chronic underutilisation of refining infrastructure has resulted in extensive value destruction across Nigeria's oil value chain. These structural inefficiencies highlight the broader challenge of resource governance in extractive economies, where insecurity and institutional weaknesses can significantly erode the economic benefits of natural resource endowments.

In response to escalating economic losses and growing pressure from both domestic stakeholders and international investors, the Nigerian government introduced a series of reforms beginning around 2021. These measures focused on strengthening surveillance capacity, improving pipeline security, and enhancing accountability within the oil sector. Key interventions included the deployment of advanced monitoring technologies, the expansion of private security contracts for pipeline protection, increased military and naval patrols in high-risk areas, and regulatory reforms aimed at improving transparency in crude oil measurement and reporting.

Following the implementation of these measures, official reports indicated a significant reduction in oil theft levels. While estimates vary depending on the measurement methodology, production losses attributed to theft reportedly declined sharply compared to previous years, when as much as a substantial share of daily output was diverted illegally.

More recent assessments suggest that theft has been significantly curtailed, with losses reduced to a comparatively small fraction of total production.

### ***6.3) The Production Sharing Contract<sup>31</sup>***

A Production Sharing Contract is an agreement between an oil company and the state, authorizing the contractor - the oil company - to conduct petroleum exploration and exploitation within a pre-defined area. The company operates at its own risk and expense under the control of the state. If petroleum is produced, it belongs to the state, with the exception of a share of production which can be taken by the oil company to recover costs and to share an agreed percentage of earnings. Up until now, it may seem like the government has the upper hand in the agreement, but a more careful analysis reveals why the contracts have not been favoring the Nigerian state.

One of PSCs' major weaknesses was that they did not have effective cost recovery limits. Indeed, oil companies were allowed to recover huge amounts of funds because no ceiling was specified by the contracts. They could invest more than was needed for oil operations, leaving very limited revenues for the Nigerian state even if oil production increased sharply. Since the state did not monitor the companies' practices accurately, accounting became very creative for the contractors as they started inflating their recoverable costs and reducing Nigerian profits. Due to these malpractices, more than \$36 million dollars were "stolen" by oil companies, weakening the state's ability to convert oil revenue into productive investments for infrastructure, security, education, and healthcare.

---

<sup>31</sup> Ogunleye, E. K. (2015). Institutional governance and production sharing contracts in Nigeria's oil sector. *Energy Policy*, 86, 732–742. <https://doi.org/10.1016/>

Another important leakage point in the PSC framework is that, for decades, the government's share of oil revenue was determined primarily by the amount of oil produced over time, rather than by current oil prices or broader global market conditions. In essence, this meant that even if the price of a barrel of oil doubled, the state's profits were not guaranteed to increase proportionally, since the fiscal structure did not automatically adjust to changes in market value. This design flaw significantly limited Nigeria's ability to capture windfall gains during periods of high oil prices and resulted in substantial foregone revenue. The problem was particularly costly because most oil contracts were long-term in nature, often lasting 10–20 years, meaning that contracts established in 1993 were only meaningfully revised or updated much later, in some cases around 2013 or beyond. As a result, Nigeria remained locked into relatively rigid fiscal terms during major global oil price fluctuations. However, during the 2010s, the country gradually began shifting towards more value-sensitive and profit-responsive contractual mechanisms, introducing reforms aimed at better aligning government revenue with profitability and global price movements, and thereby slowly increasing state control over the sector's revenue streams.

The Nigerian experience shows that the abundance of natural resources in a country is insufficient to guarantee economic development. Institutional weakness - in this section represented by the weak contractual agreements and the malpractices carried out by the state - is potentially a very powerful barrier to growth.

#### ***6.4 Fuel exports as a total of merchandise exports***

To establish a clear empirical model of Nigeria's development trajectory, we must select an indicator that accurately captures the country's economic reliance on crude oil. Evaluating resource intensity requires a proxy that reflects how deeply volatile petroleum revenue

impacts the broader economy while satisfying the requirements of dynamic time-series modeling.

Several alternative metrics could theoretically capture this dependence. For instance, government oil revenue as a share of total fiscal revenue directly measures the state budget's exposure to energy price volatility. Similarly, net oil rents as a percentage of gross domestic product measures the total financial value extracted from petroleum relative to total economic output. Another potential option, total crude oil production volume, tracks physical extraction levels over time.

However, in the Nigerian context, these indicators suffer from major data constraints when applied to long-term econometrics. Public fiscal accounts in Nigeria are subject to missing historical reporting, structural reclassifications between military and civilian regimes, and frequent accounting adjustments. Likewise, using oil rents relative to total gross domestic product introduces endogeneity concerns, as fluctuations in non-oil sectors alter the denominator regardless of actual oil market performance. Most importantly, complete, un-interrupted annual time-series data for these alternative measures are unavailable over our required sampling period, creating data gaps that rule them out for dynamic regression analysis.

Consequently, the share of fuel exports as a percentage of total merchandise exports serves as the primary operational proxy for oil dependence. Foreign trade statistics provide a continuous, standardized, and verified annual time-series across the entire period of study. In Nigeria, fuel exports historically account for between 80% and 95% of total merchandise export earnings. This metric accurately reflects the primary transmission channel of the resource curse in Nigeria: extreme trade concentration that leaves foreign exchange reserves,

currency stability, and state spending on public services heavily exposed to global crude oil price shocks.

### ***6.5 Conclusion on the oil industry discussion***

The analysis of the oil sector demonstrates that petroleum dependence extends far beyond macroeconomic export totals, deeply entangling the state in systemic vulnerabilities, international price volatility, and internal value leakage. Examining micro-level mechanisms such as Production Sharing Contracts and crude oil theft exposes how administrative loopholes, unchecked cost recovery, and widespread illicit bunkering drain potential government revenues before the state can convert natural wealth into productive public investments. To capture this external trade exposure empirically, fuel exports as a percentage of total merchandise exports is selected as the operational proxy, as it provides a continuous, standardized time series that overcomes the missing data and structural reclassifications plaguing alternative fiscal or rent-based measures.

## ***Chapter 7: Institutional weakness***

### ***7.1 Introduction on institutional weakness***

Institutional weakness is widely recognised as one of the central constraints on long-term economic development, particularly in emerging economies. In general terms, weak institutions refer to the limited ability of a state to effectively design, implement, and enforce rules that regulate economic and social activity. This includes deficiencies in the enforcement of property rights, inconsistent application of laws, low bureaucratic efficiency, and weak accountability mechanisms. When institutions are weak, economic actors face higher levels of

uncertainty, transaction costs increase, and incentives for productive investment are reduced, ultimately constraining sustainable growth.

A key consequence of institutional weakness is the persistence of inefficiencies across both public and private sectors. Governments may struggle to implement long-term development policies, maintain macroeconomic stability, or provide essential public goods such as infrastructure, security, and education. At the same time, private sector activity is often constrained by unpredictable regulatory environments, limited contract enforcement, and high levels of administrative burden. These conditions discourage entrepreneurship and foreign direct investment, while reinforcing dependency on informal networks and short-term economic behaviour.

The academic literature on economic development increasingly emphasises that institutional quality is a primary determinant of national prosperity. Research in political economy suggests that differences in income levels across countries are better explained by variations in institutional strength than by geography or resource endowment alone. In particular, economies characterised by weak institutions tend to experience slower structural transformation, lower productivity growth, and greater exposure to economic volatility.

Overall, institutional weakness represents a systemic constraint that shapes economic outcomes across multiple sectors. It reflects not only deficiencies in governance structures but also broader challenges related to state capacity, accountability, and rule of law.

Understanding these institutional foundations is therefore essential for analysing patterns of underdevelopment and persistent economic inefficiencies in many developing economies.

Institutions are one of the main hidden drivers of educational development because they determine how resources are allocated and how long-term investments like education are

actually prioritized. This chapter aims to capture the drivers of institutional weakness and to discuss its effects on different aspects of Nigerian society.

### ***7.2) The rentier state of Nigeria: how easy money erodes education***

To understand the structural barriers to Nigeria's growth, one must look beyond macroeconomic indicators and examine the nature of its statehood. In economic theory, Nigeria is categorized as a classic "Rentier State" (Mahdavy, 1970). A rentier state is defined as a nation where the government derives the vast majority of its revenues from foreign individuals, concerns, or governments through the extraction of natural resources, rather than from taxes levied on its domestic citizenry. This financial reality fundamentally alters the social contract between the state and the population.

In a traditional economy, governments rely on corporate and personal income taxes to function. This financial dependence forces the state to protect property rights, foster a productive business environment, and maintain a high level of accountability to its taxpayers. In Nigeria, however, the direct capture of oil rents from international oil companies isolates the state from its citizens. Because the government does not rely on its people for financial survival, it often feels less pressure to deliver public goods, build transparent institutions, or improve the National educational system. Consequently, governance degenerates into a mechanism for distributing oil wealth rather than an apparatus for generating national productivity.

The rentier state framework suggests that when governments receive large revenues from natural resources, political competition often shifts from the creation of wealth to the

distribution of wealth. Instead of focusing on expanding productive sectors such as manufacturing, agriculture, education, and innovation, political actors may concentrate on obtaining access to resource rents. As a result, public institutions gradually become oriented towards allocating oil revenues rather than fostering economic productivity. This process creates opportunities for patronage networks, clientelism, and corruption, as political influence becomes closely associated with access to resource wealth.

The consequences for development are significant. When governments rely heavily on natural resource rents rather than taxation, investment in long-term productive sectors may become a lower priority. Education is particularly vulnerable to this phenomenon because its benefits materialise only over long periods of time. Resource rents provide governments with immediate revenue streams, while investments in human capital require decades before their full economic returns become visible. As a result, policymakers may favour short-term expenditures and politically visible projects over educational reforms and capacity building. This helps explain why Nigeria's educational system has remained underfunded relative to international recommendations despite the country's substantial oil wealth.

The effects of rentierism extend beyond education. Research on Nigeria's political economy suggests that oil dependence has contributed to broader institutional weaknesses, including corruption, poor infrastructure provision, unemployment, and social grievances. In the Niger Delta, for example, dissatisfaction with the distribution of oil revenues, combined with weak political institutions and inadequate socio-economic development, contributed to recurring conflict and instability. Rather than creating widespread prosperity, resource wealth often generated competition over access to rents and intensified existing institutional weaknesses.

Ultimately, the rentier state theory provides an important explanation for why resource-rich countries frequently struggle to translate natural wealth into improvements in quality of life.

The problem is not the existence of natural resources themselves, but the incentives created by easy access to resource revenues. When governments become financially detached from their citizens, accountability weakens, productive sectors receive less attention, and public investment becomes less effective. In the Nigerian case, the dominance of oil rents has contributed to an institutional environment in which education, healthcare, and infrastructure have often been neglected despite the country's enormous economic potential. This reinforces the broader argument of the thesis that institutional quality, rather than resource abundance alone, is the key determinant of whether natural resources become a blessing or a curse.

### ***7.3 Government Effectiveness***

To evaluate how governance structures influence Nigeria's development outcomes, the empirical model requires an indicator that reliably measures state capacity and institutional performance over time. Capturing institutional quality presents a distinct empirical challenge, as governance is inherently multidimensional, encompassing political stability, regulatory environments, rule of law, and administrative competence.

Several established metrics could theoretically proxy institutional weakness in a developing economy. For instance, voice and accountability indicators measure democratic participation and press freedom, while rule of law indices track judicial independence and contract enforcement. Similarly, control of corruption metrics evaluate the extent to which public power is exercised for private gain, and regulatory quality measures the government's ability to formulate sound private-sector policies.

However, when applied to a multi-decade time-series model for Nigeria, these alternative governance dimensions present specific limitations. Concepts like political stability or democracy metrics often capture regime transitions rather than the day-to-day functional capacity of the state to deliver public goods. Furthermore, historical data for specialized

governance indicators suffer from severe coverage gaps prior to the late 1990s, or rely on survey-based perception metrics that lack annual continuity over long historical horizons.

Consequently, this study selects Government Effectiveness - drawn from the World Bank's Worldwide Governance Indicators (WGI) - as the primary operational proxy for institutional quality. Government Effectiveness specifically measures the quality of public service delivery, the degree of civil service independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.

In the Nigerian context, this metric directly targets the core structural failure of the resource-dependent state: the inability to translate vast oil revenues into functional public infrastructure, healthcare systems, and educational institutions. By isolating administrative and implementation capacity rather than political ideology or short-term political crises, Government Effectiveness provides a consistent, standardized measure of state capability that aligns directly with the theoretical transmission channels of the resource curse.

#### ***7.4 Conclusion on institutional weakness***

Institutional weakness remains a fundamental barrier to long-term development, turning resource wealth into a paradox where easy oil rents decouple the government from its citizens, erode public accountability, and starve vital sectors like education of long-term investment. To capture this dynamic empirically, Government Effectiveness is selected as the primary proxy because it directly measures public service delivery, bureaucratic capacity, and implementation performance rather than short-term political shifts. Ultimately, this institutional breakdown links directly to the paper's core premise: the quality of a nation's governance dictates whether natural resource abundance becomes an engine of prosperity or a structural curse.

## ***Chapter 8: The effects of political violence***

### ***8.1 Introduction on Nigeria's political violence***

The high level of political instability represents a huge constraint to Nigeria's development. The well-being of the population is continuously hindered by regional conflicts, insurgencies, and localized political clashes. This chapter focuses on the consequences of living in a violent environment through analysing the effects of armed conflict on the state of the economy and on the average quality of life. In this section, the effects of a violent government will be analyzed from the point of view of the population in order to explain its effect on the average quality of life. The final goal of the chapter is to identify a metric able to operationalize the variable of political instability and violence with regards to the scope of the paper.

### **8.2 The deterioration of mental health due to conflict**

One of the most direct consequences of prolonged exposure to violence concerns individual security and psychological well-being. Armed conflict creates an environment of persistent uncertainty in which individuals face the possibility of violence, displacement, loss of livelihoods, or harm to family members. According to the Observatory for Religious Freedom in Africa (ORFA), 79,323 people were killed in terrorism-related violence in Nigeria between 2020 and 2025, corresponding to an average of approximately 36 deaths per day. Moreover, unlike temporary economic shocks, insecurity can therefore affect daily life continuously, altering individuals' behaviour and perceptions of their surroundings. The World Health Organization identifies armed conflict and other emergencies as major sources of psychological distress, noting that approximately 22% of people who have experienced war or

conflict in the previous ten years develop a mental health condition such as depression, anxiety or post-traumatic stress disorder. Conflict can also disrupt access to mental-health services precisely when demand for such support increases. In Nigeria, where insecurity affects different regions through insurgency, kidnapping and communal violence, the consequences of violence therefore extend beyond physical harm and can reduce quality of life through persistent fear, anxiety and reduced psychological well-being.

### **8.3 The consequences on prices and transportation**

Political instability can also affect quality of life through its effects on prices and access to essential goods. Violence can disrupt agricultural production, transportation and local markets, particularly when farmers are unable to safely access their land or when insecurity restricts the movement of people and goods. Such disruptions can reduce the supply of food and increase the costs associated with transporting and distributing it. This mechanism is particularly relevant in Nigeria given the importance of food expenditure for household welfare. The World Bank's Nigerian food-price database, which covers 73 markets over the period 2007-2026, reflects the importance of monitoring food-price conditions across markets affected by fragility and conflict. Consequently, insecurity can contribute to a deterioration in real living conditions by making essential goods less affordable, particularly for households with limited capacity to absorb increases in prices.

The economic consequences of insecurity are therefore not limited to the immediate destruction caused by violence. Persistent instability can discourage economic activity by increasing the risks faced by households, farmers and firms. Individuals may reduce their mobility, alter where they work or live, or avoid economic activities perceived as unsafe, while firms may face higher costs associated with security, transportation and disrupted operations. These effects can reinforce existing vulnerabilities by reducing employment

opportunities and household income while simultaneously increasing the cost of living.

Political instability can therefore influence quality of life through both sides of the household constraint: the resources available to individuals can decline while the cost of satisfying basic needs increases.

#### **8.4 Distrust in public institutions**

A further mechanism through which political instability can affect quality of life operates through its relationship with corruption, accountability, and trust in public institutions.

Prolonged instability can weaken the capacity of public authorities to monitor the use of public resources and enforce accountability, creating conditions in which corruption and patronage can become more difficult to control. This does not imply that political instability is the sole cause of corruption; rather, instability can weaken the institutional mechanisms required to prevent and sanction corrupt behaviour. In turn, perceptions of corruption can reinforce citizens' belief that public institutions are unable or unwilling to act in the public interest.

The erosion of institutional trust is relevant to quality of life because it can alter the relationship between citizens and the state. When individuals have limited confidence in public institutions, they may become less willing to cooperate with authorities or rely on formal mechanisms to resolve disputes and obtain protection. This can further weaken social cohesion and reinforce perceptions of insecurity, creating a self-reinforcing relationship between political instability and institutional confidence. Political instability should therefore not be understood solely as the presence of violent events, but also as a condition that can progressively affect the psychological, economic and social environment in which individuals live.

Overall, the analysis demonstrates that political instability can affect quality of life through several interconnected mechanisms. Exposure to violence can undermine psychological well-being and personal security, while disruptions to production, transportation and markets can increase the cost of essential goods and reduce economic opportunities. At the same time, persistent insecurity, weak accountability and perceived corruption can erode trust in public institutions, further weakening the social environment in which individuals live. These mechanisms provide the basis for including political stability as an explanatory variable in the empirical model, as they demonstrate that the effects of political instability extend beyond its direct impact on economic activity and encompass important dimensions of individual well-being. By incorporating political stability into the model, the empirical analysis can therefore assess whether differences in the political and security environment help explain variations in quality of life alongside the other mechanisms identified throughout the literature review.

### ***8.5 The Political Stability Index***

Understanding the structural drivers of human development requires examining not only the administrative strength of the state, but also its political resilience and susceptibility to violent disruption. Within empirical literature, political stability is recognized as a vital precondition for long-term policy implementation, institutional continuity, and sustained economic investment. The Political Stability Index - officially designated by the World Bank as the Political Stability and Absence of Violence/Terrorism indicator within the Worldwide Governance Indicators (WGI) database - serves as a primary metric for capturing this dimension of institutional vulnerability.

The index measures the perceived likelihood that a nation's government will be destabilized or overthrown through unconstitutional, violent, or illegal means. Rather than evaluating legal

administrative processes or democratic electoral cycles, this indicator specifically targets violent disruptions to state authority. It synthesizes a wide spectrum of security and political risks, including domestic political unrest, armed insurgency, organized terrorism, and the risk of unconstitutional regime changes like military coups. The metric operates as a composite aggregate built from an Unobserved Components Model that pools primary data from commercial risk-rating agencies, think tanks, non-governmental organizations, and enterprise surveys. The resulting scores are rescaled into a standardized variable typically ranging from -2.5, representing extreme instability and high violent threat, to +2.5, representing strong stability and minimal security risks.

In the context of this thesis, the Political Stability Index serves a precise analytical utility by capturing a distinct institutional transmission mechanism of the Nigerian resource curse. While measures like Government Effectiveness evaluate the state's technical capacity to deliver public services, the Political Stability Index controls for the disruptive impact of violent conflict and political fragility. Historically, Nigeria's scores on this index reflect severe structural challenges, including oil-related militancy in the Niger Delta, regional insurgencies in the northeast, and recurring electoral and communal violence. Including this variable in the empirical model allows the analysis to test whether violence directly impairs human development by forcing school closures, damaging health infrastructure, and displacing populations. Furthermore, it accounts for fiscal crowd-out, where persistent instability forces the government to divert scarce public revenue away from health and education toward national security. By incorporating political stability alongside measures of oil dependence, human capital, and administrative effectiveness, the econometric model can isolate whether political peace is a necessary conditioning threshold for translating resource revenues into sustained improvements in human capabilities.

## ***8.6 An overview of the chapter's findings***

Prolonged political violence and instability are associated with conditions that can degrade the average quality of life by eroding psychological well-being, disrupting markets and transportation to drive up the cost of essential goods, and undermining public trust in institutions. Choosing the Political Stability Index from the World Bank's Worldwide Governance Indicators is ideal for this paper because it provides a standardized, composite metric to capture the threat of armed insurgency, violent disruption, and security risks. This allows the empirical model to test whether political peace serves as a necessary condition for translating resource wealth into sustained human development while accounting for fiscal crowd-out toward national security, subject to further robustness checks.

## ***Chapter 9: An overview of public spending***

### **9.1 Introduction on Nigerian public spending**

Public spending is the primary instrument through which governments influence economic and social development. Through public expenditure the Nation finances essential public goods such as education, infrastructure, healthcare, and security, while also correcting market failures, redistributing income, and promoting long-term growth. In developing economies such as Nigeria, public spending has a fundamental role because private markets are often unable to provide sufficient investment in the sectors which can generate broad economic activity. Consequently, the efficiency of budget allocation can have a direct impact on living standards, poverty reduction, and the quality of life in general.

The main source of government revenue in Nigeria is the oil sector, which accounts for approximately 60% of the total budget. The dependence on oil income has shaped the Nation's structure for decades, exposing the state to the volatility of international prices of

such commodities, which are heavily influenced by geopolitical tensions and technological advancements. As a result, Nigeria's government revenues can fluctuate considerably from one year to the other, creating uncertainty in private and public investment. This creates highly irregular cycles of investment which hurt the development of schools, hospitals, and roads to the point where long-term growth is not attainable.

The goal of this chapter is to discuss the structure of Nigerian public spending and to identify the areas which require major focus or investment.

### ***9.2 The components of government spending in Nigeria:***

The public spending of the Nigerian government is divided into recurrent expenditure, capital expenditure, and transfer payments. Recurrent spending refers to regular expenses such as wages, overheads, maintenance, and administrative costs. Capital expenditure refers to investments on long-term assets and infrastructure, including roads, power plants, transport, and public buildings. Transfer payments refer to those payments that redistribute wealth such as pensions, subsidies, grants, and other social transfers. It is important to distinguish the three components because they may have different effects on growth and development. Recurrent spending may support growth when it finances essential public services and human-capital-related administration, but it may become unproductive when dominated by high bills and overhead costs. Capital expenditure can influence growth more directly by expanding infrastructure and productive capacity, but its effect depends on project selection, implementation, transparency, and completion. Transfer payments may reduce poverty and income inequality, but they may weaken growth if poorly targeted or if they encourage dependency and fiscal leakage.

The theoretical framework which supports Dauda's work is the Keynesian theory, which argues that government expenditure can stimulate aggregate demand, output, and employment through the multiplier effect. The reasoning is the following: a raise in  $G$  increases a person's spending, which becomes another person's income and therefore triggers a chain reaction of continuous economic activity.

$$Y = C + I + G + (X - M)$$

The findings of the study show that government expenditure has mixed effects on economic growth in Nigeria. The most statistically significant component of government spending is recurrent expenditure, which exhibited a positive and significant relationship with GDP growth. According to Dauda (2026), a 1% increase in recurrent expenditure is associated with approximately a 0.98% increase in GDP, suggesting that spending on public administration, salaries, public services, and other recurring government activities contributes positively to aggregate demand and economic activity.

By contrast, capital expenditure was found to have a positive but statistically insignificant effect on economic growth. This result is particularly concerning because capital spending is generally expected to be one of the most productive forms of public expenditure. Investments in roads, electricity generation, telecommunications infrastructure, schools, hospitals, and transportation networks should theoretically reduce production costs, improve productivity, attract foreign investment, and facilitate long-term economic development. The absence of a significant growth effect suggests that public investment in Nigeria may suffer from weak project implementation, corruption, procurement inefficiencies, cost overruns, and a large number of abandoned or incomplete projects. In other words, the problem may not be the quantity of capital expenditure but rather its effectiveness.

According to official data sources such as Statista, the World Health Organization, and the Federal Ministry of Finance, Nigeria invests approximately 7% of its yearly federal budget into education, 5% of the budget into healthcare, and 7% into infrastructure.

These values are underwhelming for a country which aims to become an established and self-relying Nation. As mentioned in the previous paragraphs, UNESCO stated that 15% to 26% of the government budget should be allocated to education to ensure equity and stable growth. The Abuja Declaration of 2001 stated that African Nations should invest 15% of their budget into healthcare in order to efficiently combat disease like malaria, HIV and tuberculosis, illnesses for which many people do not get sufficient medical attention due to the inefficiency of the sector. Regarding infrastructure, there are no official directives about the correct allocation of investment, but the African Development Bank inquires that 5% to 10% of the budget goes to the sector. Current investment appears to be within this range despite its scarce results.

Transfer payments also produced weak results. Although social transfers can play an important role in reducing poverty and supporting vulnerable households, the study found no statistically significant impact on economic growth. This does not imply that transfer payments are unimportant; rather, it suggests that their contribution depends heavily on targeting efficiency and whether they encourage productive participation in the economy. Well-designed transfer programs can improve access to education, healthcare, and nutrition, thereby contributing to long-term human development, while poorly designed programs may generate limited economic benefits and increase fiscal pressure.

The broader implication of Dauda's findings is that Nigeria's development challenge is not solely related to the size of public expenditure but also to its allocation, implementation, and monitoring. This conclusion aligns closely with the institutional weakness literature discussed in previous chapters. Public spending can only contribute to development when resources are

effectively transformed into public goods and services. Where corruption, weak oversight, and administrative inefficiencies are present, large government budgets may produce relatively small improvements in economic performance and social welfare.

The findings are also highly relevant for understanding quality of life outcomes in Nigeria. Throughout this thesis, quality of life has been discussed through indicators such as educational attainment, healthcare outcomes, life expectancy, literacy rates, and multidimensional poverty. These indicators are directly influenced by how effectively public resources are invested. For example, educational spending only improves human capital if schools are adequately staffed and maintained; healthcare expenditure only improves life expectancy if hospitals, medicines, and medical personnel are accessible to the population; and infrastructure spending only increases productivity if projects are completed and properly managed.

Consequently, improving the quality of public expenditure may be more important than simply increasing expenditure levels. The experiences of Norway, Botswana, Indonesia, and Malaysia demonstrated that resource wealth can be converted into higher living standards when governments successfully invest resource revenues into education, healthcare, infrastructure, and productive sectors of the economy. Nigeria's relatively poor performance on indicators such as the Human Development Index, life expectancy, literacy, and multidimensional poverty suggests that a significant share of public spending has not generated the developmental outcomes that would normally be expected from a country endowed with substantial natural resource wealth.

Dauda's research therefore reinforces one of the central arguments of this thesis: the key obstacle to development in Nigeria is not necessarily a lack of financial resources, but the inability of institutions to allocate and utilize those resources efficiently. Sustainable

improvements in quality of life require a public expenditure framework that prioritises productivity, transparency, accountability, and long-term investment in human capital.

Without these conditions, increases in government spending are unlikely to translate into meaningful improvements in welfare and development.

### ***9.3 Public health spending as a % of total spending***

To operationalize public investment within the empirical model, this study uses public health expenditure as a percentage of total government spending. While overall capital expenditure metrics or broader infrastructure spending metrics capture general public investment, they often include large-scale commercial projects, debt servicing, or administrative overhead that do not directly translate into human capability expansion. By specifically isolating the share of the government budget allocated to healthcare, this indicator directly measures the fiscal priority given to human survival, preventive care, medical infrastructure, and disease control.

In the context of this thesis, this measure provides significant analytical utility for testing the social expenditure channel of the Nigerian resource curse. In a resource-dependent economy, petroleum revenues provide the state with substantial fiscal capacity; however, institutional weaknesses and volatile revenue flows often cause public health funding to be neglected or crowded out by security outlays and fossil fuel subsidies. Incorporating government healthcare expenditure into the econometric framework allows the analysis to evaluate whether direct social spending effectively drives improvements in the Human Development Index, or whether structural inefficiencies prevent fiscal allocations from yielding meaningful health outcomes over time.

#### ***9.4 Conclusion on public spending***

This chapter examines Nigeria's public spending, noting that oil revenues fund approximately 60% of the budget and expose the economy to volatile commodity cycles. Within this framework, recurrent expenditure supports administration and public services, whereas capital spending and transfer payments face implementation challenges, weak oversight, and procurement inefficiencies that limit their development impact. Moreover, allocations to healthcare (5%) and education (7%) fall well below international targets like the Abuja Declaration and UNESCO benchmarks, restricting improvements in living standards. Finally, the last sub-chapter identifies public health expenditure as a percentage of total government spending and selects it as the operational metric because it directly isolates fiscal priority toward human capability expansion and disease control, enabling the model to test whether direct social allocations drive long-term welfare outcomes.

### ***Chapter 10 - Macroeconomic Conditions in Nigeria***

#### ***10.1 Introducing Nigeria's macroeconomic conditions***

Macroeconomic conditions are an important factor in understanding growth trends and the behaviour of consumers and firms within an economy. This chapter analyses a selection of key macroeconomic performance indicators in order to assess which measures provide a meaningful representation of economic conditions and which may provide an incomplete picture of quality of life. The macroeconomic environment, together with institutional policies, represents the economic context in which workers, firms and households operate. It is therefore necessary to examine how this environment has evolved in Nigeria and how its dependence on oil has influenced the main indicators of economic activity and stability. The

ultimate goal of this chapter is to identify the indicator which captures best the aspects of macroeconomic conditions in order to insert it in the empirical mode.

## **10.2 *GDP per capita***

GDP per capita is one of the most commonly used indicators of average economic prosperity because it relates the total value of economic production to the size of the population. It is therefore a useful starting point for evaluating whether economic activity is generating improvements in the resources potentially available to individuals. However, GDP per capita should not be interpreted as a direct measure of quality of life. In the Nigerian case, this distinction is particularly important because substantial changes in the price level and exchange rate can create a considerable gap between measured economic output per person and the material conditions experienced by households. For example, the IMF estimates that Nigeria's real GDP grew by 3.4% in 2024, while real GDP per capita increased by only approximately 1.3%, reflecting the relatively rapid growth of the country's population. At the same time, average consumer-price inflation reached approximately 31% during the year, substantially reducing the purchasing power associated with nominal incomes.

The distinction between nominal and real measures is particularly relevant when interpreting Nigeria's recent GDP-per-capita figures. Nominal GDP per capita expressed in US dollars fell sharply from approximately US\$1,597 in 2023 to US\$806 in 2024 according to the IMF, largely reflecting the substantial depreciation of the naira rather than a comparable contraction in domestic real production. The IMF subsequently estimated nominal GDP per capita at approximately US\$1,224 in 2025, illustrating the extent to which exchange-rate movements can alter the international-dollar value of Nigerian output without necessarily reflecting proportional changes in domestic production or welfare. Consequently, GDP per capita is informative about average economic production but insufficient as a measure of lived welfare.

Recent research on Nigeria reinforces this distinction: Olalekan and co-authors' 2024 analysis of welfare differences within Nigeria finds that measures incorporating health, inequality, consumption and leisure produce substantially different welfare assessments from GDP or consumption-based measures alone. In particular, the authors find that welfare differences across Nigerian states are approximately four times larger than those implied by consumption differences, demonstrating that economic output does not capture several dimensions of individual well-being.

GDP per capita should therefore be interpreted as an indicator of the economic resources generated on average rather than as an equivalent measure of the quality of life enjoyed by the population. A country can experience positive growth in output per person while households simultaneously face declining real purchasing power, unequal access to resources or deterioration in non-monetary dimensions of welfare. For Nigeria, this distinction is particularly important because the coexistence of positive real growth with high inflation and substantial exchange-rate movements means that headline GDP performance can provide an overly optimistic impression of changes in living standards. GDP per capita is consequently best understood as one component of the macroeconomic picture rather than as a sufficient proxy for quality of life.

### ***10.3 Inflation Rate***

Inflation provides a more direct indication of the pressure placed on household purchasing power and therefore represents a particularly relevant complement to GDP per capita.

Nigeria's inflation rate increased substantially during the period under consideration. After remaining at approximately 12% between 2018 and 2020, consumer-price inflation increased to 17.0% in 2021 and 18.8% in 2022, before accelerating to 24.7% in 2023 and approximately 31-33% in 2024, depending on the data vintage and treatment of the consumer-price index.

The IMF attributes the 2024 acceleration to a combination of naira depreciation, food-supply shortages, energy-price increases following the removal of fuel subsidies and elevated financing costs. Inflation subsequently moderated, with the IMF estimating an annual average of 23% for 2025 and projecting approximately 16% for 2026. However, the 2025 CPI rebasing requires caution when comparing the post-rebasing series directly with earlier observations.

The persistence of high inflation is significant because it can offset part of the gains generated by nominal economic growth. When the price of goods and services increases faster than household incomes, real purchasing power declines even if nominal wages or GDP continue to rise. This mechanism is particularly important in Nigeria because food and transportation constitute substantial components of household expenditure, making consumers highly exposed to price increases. The effects are not limited to consumption: inflation also reduces the real value of savings and increases uncertainty regarding future expenditure. For firms, rapidly changing prices make it more difficult to forecast input costs, revenues and expected returns, potentially reducing the attractiveness of long-term investment. Recent empirical evidence using Nigerian data from 1970-2022 finds that inflation has a statistically significant negative effect on economic growth in the short run, with a one-percentage-point increase in inflation associated with an estimated 0.12% reduction in real production growth. Similar recent research covering 2009-2023 finds that inflation, interest rates and the consumer-price index had significant negative effects on Nigerian economic growth.

The relationship suggests that inflation can undermine growth through both demand and supply channels. Higher prices reduce the real purchasing power available for household consumption, while uncertainty over future prices can discourage firms from committing capital to long-term projects. In addition, policies aimed at containing inflation can themselves impose short-term costs on economic activity, particularly when they involve

tighter monetary conditions. Nigeria's recent inflationary episode therefore illustrates a broader macroeconomic trade-off: allowing inflation to remain high can progressively erode real incomes and investment incentives, whereas aggressive disinflation policies can weaken demand and increase financing costs. The challenge is particularly significant when inflation originates partly from supply-side and exchange-rate shocks, because monetary policy has limited ability to directly address constraints in food production, energy supply or foreign-exchange availability.

From a quality-of-life perspective, inflation is therefore arguably more informative than GDP growth alone. A positive rate of real GDP growth does not necessarily imply that households are becoming better off if the prices of essential goods and services are increasing substantially faster than their purchasing power. Persistent inflation can lead households to reduce consumption, postpone expenditure and redirect resources away from education, healthcare and other components of welfare. It can consequently weaken the transmission from economic growth to improvements in living standards. Inflation should therefore be considered not merely an indicator of price instability, but as an important mechanism through which macroeconomic conditions influence the material welfare of the population.

#### ***10.4 Unemployment Rate***

At first sight, unemployment appears to provide a more favourable assessment of Nigeria's labour-market conditions than the inflation figures. Under the revised Nigeria Labour Force Survey methodology, the unemployment rate stood at 4.3% in the second quarter of 2024, compared with 5.3% in the first quarter. The rate was therefore relatively low by international standards and considerably below the levels recorded under Nigeria's previous labour-market methodology. For comparison, the National Bureau of Statistics notes that the average modelled ILO unemployment rate for Western and Central Africa was approximately 5% in

2021. At face value, this could suggest that Nigeria's labour market has remained relatively resilient despite the recent acceleration in inflation and the broader cost-of-living crisis.

Historical comparisons, however, require considerable caution because Nigeria changed the methodology used to calculate unemployment in 2023. Under the revised framework, an individual is classified as unemployed only if they are not employed, actively searching for work and available to work. The NBS therefore explicitly warns that the new estimates should not be interpreted as a direct continuation of the older series. The revised statistics also reveal that a low unemployment rate does not necessarily correspond to strong labour-market conditions. In Q2 2024, approximately 93% of employed Nigerians were in informal employment, while the time-related underemployment rate was 9.2%. Youth unemployment was also higher, at 6.5%, and unemployment reached 5.2% in urban areas. These figures indicate that the low headline unemployment rate partly reflects the capacity of the Nigerian labour market to absorb workers into informal and low-hour activities rather than necessarily indicating widespread access to stable, productive and well-paid employment.

The coexistence of low unemployment with high inflation is also relevant to the traditional inflation-employment trade-off. The Phillips Curve framework suggests that, in the short run, a tighter labour market can generate upward pressure on wages and prices, while policies designed to reduce inflation through weaker aggregate demand may increase unemployment. However, this relationship is not mechanically stable and depends on the sources of inflation. Recent research on Africa finds that incorporating global oil prices significantly improves the ability of the Phillips Curve to explain inflation dynamics, highlighting the importance of supply-side shocks in African economies. Evidence specifically for Nigeria is similarly nuanced: Onwuemeka et al. (2024), examining Nigerian data from 1981-2022, investigate the Phillips Curve relationship and show that the traditional inverse relationship between inflation and unemployment cannot simply be assumed to hold consistently in the Nigerian economy.

This is particularly relevant to Nigeria because recent inflation has been strongly influenced by food, energy and exchange-rate shocks rather than by an exceptionally tight formal labour market alone.

The low unemployment rate should therefore not be interpreted as evidence that macroeconomic conditions are favourable for Nigerian workers. In an economy characterised by very high informality and substantial underemployment, employment status alone provides limited information about the quality and economic security of jobs. Moreover, the persistence of high inflation means that employment may not translate into improved real living standards if wages fail to keep pace with prices. The unemployment rate is consequently a useful indicator of labour-market absorption, but its interpretation requires consideration of employment quality, underemployment and real wages. For the purposes of this thesis, its main value lies in demonstrating that a low unemployment rate can coexist with weak improvements in quality of life, reinforcing the broader argument that no single macroeconomic indicator provides a complete representation of welfare.

### ***10.5 Interest Rates***

Interest rates represent an important policy indicator because they influence both the cost of borrowing and the effectiveness of monetary policy. In response to persistent inflation and exchange-rate pressures, the Central Bank of Nigeria adopted a substantially more restrictive monetary stance from 2023 onwards. The Monetary Policy Rate was increased repeatedly and reached 27.5% in 2025 before being reduced to 26.5% in February 2026, where it was subsequently maintained. The scale of these rates reflects the difficult policy environment faced by the CBN: monetary tightening is intended to contain inflation and stabilise expectations, but it simultaneously increases the cost of financing for households and firms.

Higher interest rates can contribute to price stabilisation through several channels. More expensive credit reduces incentives for consumption and investment, while higher domestic yields can make naira-denominated financial assets more attractive and support exchange-rate stability. Recent IMF research on Nigeria finds that interest-rate transmission strengthened following the country's shift to a floating exchange-rate regime in 2023, although the pass-through from the policy rate to market rates remains incomplete. The same study finds that exchange-rate pass-through has become more economically significant following the reform, making the credibility and timing of monetary-policy responses increasingly important for price stability.

However, the stabilising effect of higher interest rates must be considered alongside their potential cost for productive investment. When borrowing becomes more expensive, firms face a higher hurdle rate for new projects and may postpone investment in capital, technology and productive capacity. This effect is particularly relevant in Nigeria, where access to affordable credit is already constrained for many firms. Empirical evidence from Eze et al. (2024), using Nigerian data from 1986-2019, finds a negative and statistically significant relationship between interest rates and private domestic investment in both the short and long run. More recent research on Nigeria similarly emphasises the importance of the interest-rate channel for private investment, while IMF analysis notes that structural constraints on private credit remain an obstacle to stronger investment and growth.

The Nigerian case therefore illustrates the central trade-off associated with restrictive monetary policy. High interest rates may be necessary to prevent inflation from becoming entrenched and to support macroeconomic and exchange-rate stability, but maintaining them for an extended period can suppress private investment and reduce the expansion of productive capacity. This is particularly problematic when inflation itself is partly driven by supply-side constraints, since higher financing costs do not directly increase food production,

improve infrastructure or eliminate foreign-exchange shortages. The CBN therefore faces a difficult balance between stabilising prices in the short term and preserving the investment conditions required for sustainable growth in the longer term.

For quality of life, this trade-off operates through both sides of the policy mechanism.

Successful monetary tightening can protect households from further erosion of purchasing power by reducing inflation, but persistently high borrowing costs can restrict employment creation, entrepreneurship and business expansion. The effect is therefore not simply that "high interest rates are bad" for the population. Rather, the relevant issue is whether the improvement in price stability generated by tighter monetary conditions is sufficiently large and durable to compensate for the reduction in investment and credit availability. In Nigeria's case, this balance is particularly difficult because monetary policy must address inflation while operating within an economy exposed to external commodity shocks and structural supply constraints.

#### ***10.6 Evaluation of the indicators discussed and choice for the model:***

The preceding sections examined four macroeconomic indicators: GDP per capita, inflation, unemployment, and interest rates. Each offers a partial view of Nigeria's macroeconomic conditions, but three are excluded from the empirical model for specific reasons, rather than a general judgment that they are less relevant.

GDP per capita is excluded because it is not independent of the dependent variable: the income dimension of HDI is itself built from Gross National Income per capita. Including it as a regressor would reproduce, on the income side, the same mechanical overlap already acknowledged for secondary school enrollment in Section 12.6.

Unemployment is excluded for data comparability reasons. Nigeria changed its unemployment methodology in 2023, and the National Bureau of Statistics itself warns that the revised series should not be treated as a continuation of the earlier one (Section 10.4). This structural break is incompatible with the continuous annual series used in Chapter 12.

Interest rates are excluded for a similar reason: the 2023 shift to a floating exchange-rate regime materially changed the interest-rate transmission mechanism partway through the sample (Section 10.5). Interest rates are also set substantially in response to inflation itself, so including both would raise a direct endogeneity concern rather than add independent information.

Inflation has none of these limitations. It is measured consistently across 2000 to 2023, and its effect on household purchasing power (Section 10.3) operates continuously rather than through a policy regime that changed mid-sample. It also maps directly onto the macroeconomic transmission channel in Chapter 11, where terms-of-trade and exchange-rate shocks erode real household income through price instability. For these reasons, the inflation rate (INF) is the macroeconomic indicator carried into the empirical model in Chapter 12, treated as a control variable consistent with its role in Table 11.1.

## **Chapter 11: Theoretical Framework and Conceptual Integration**

### **11.1 Introduction and Theoretical Context**

This chapter develops the theoretical framework that connects the descriptive evidence presented in Chapters 1 through 10 to the empirical model estimated in Chapters 12 and 13.

The preceding chapters documented, sector by sector, how Nigeria's dependence on petroleum

exports coexists with weak institutional performance, volatile and often inadequate public spending, persistent gaps in human capital formation, and macroeconomic instability. The purpose of this chapter is to organize these observations into a coherent set of transmission channels, to translate each channel into a testable hypothesis, and to state explicitly the methodological assumptions under which the subsequent regression analysis should be interpreted.

The chapter proceeds in three steps. Section 11.2 sets out four transmission channels through which resource dependence is theorized to affect human development in Nigeria, and formalizes each channel into a specific, directional hypothesis. Section 11.3 specifies the baseline econometric model and states the methodological boundaries of the analysis. Section 11.4 positions the study within the existing empirical literature on the resource curse and clarifies its specific contribution.

## **11.2 Conceptual Transmission Channels and Hypotheses**

The literature on the resource curse generally agrees that natural resource abundance does not affect development outcomes directly, but through a set of intermediating channels (Mehlum, Moene and Torvik, 2006; Robinson, Torvik and Verdier, 2006; Sachs and Warner, 2001).

Building on the sector-level evidence developed in Chapters 5 through 10, this thesis organizes these channels into four categories: institutional governance, fiscal allocation, human capital accumulation, and macroeconomic stability. Each channel is mapped to one or more of the variables introduced in Chapter 12, and each variable is associated with a directional hypothesis regarding its expected relationship with the Human Development Index (HDI).

Channel 1: Institutional governance. When government revenue is derived primarily from resource rents rather than from broad-based domestic taxation, the fiscal link between the

state and its citizens weakens, reducing the political incentive for accountable governance (Ross, 2001). This can lower administrative capacity, weaken regulatory quality, and increase the scope for rent-seeking, as discussed in Chapter 7. This channel is operationalized through two variables: Government Effectiveness (GE) and Political Stability and Absence of Violence (POL), both drawn from the World Bank Worldwide Governance Indicators. Both are hypothesized to be positively associated with HDI, since stronger institutional capacity should translate more effectively fiscal resources into development outcomes.

Channel 2: Fiscal allocation and public spending. Heavy reliance on volatile hydrocarbon revenue tends to produce pro-cyclical public spending, expanding during price booms and contracting during downturns, as shown in Chapter 9. This volatility undermines sustained investment in social sectors such as healthcare. This channel is operationalized through Government Expenditure on Healthcare as a share of total government expenditure (HEALTH), hypothesized to be positively associated with HDI.

Channel 3: Human capital accumulation. In economies where a capital-intensive extractive sector generates the bulk of government revenue while absorbing little domestic labor, the incentive to invest systematically in education can weaken, as discussed in Chapter 5. This channel is operationalized through the gross secondary school enrollment ratio (HC), hypothesized to be positively associated with HDI. Because HDI itself incorporates an education component, this relationship is expected to be strong, and its interpretation requires particular caution; this issue is addressed directly in Section 11.3 and revisited in Chapter 12.

Channel 4: Macroeconomic stability. Resource-dependent economies are exposed to external terms-of-trade shocks that can generate inflationary pressure and currency instability, eroding real household income, as discussed in Chapter 10. This channel is operationalized through the annual inflation rate (INF). Because inflation in this framework functions primarily as a

control for macroeconomic volatility rather than as a channel with an independent development hypothesis of its own, it is treated as a control variable rather than the subject of a separate directional hypothesis.

In addition to these four channels, the model tests the direct relationship between resource dependence itself and human development, operationalized through Oil Exports as a share of total merchandise exports (OIL). Consistent with the institutional theories reviewed above, resource dependence is not expected to exert a mechanical negative effect on its own; rather, its effect is expected to be conditional on the institutional and fiscal channels through which resource revenue is managed. The hypothesis for OIL is nonetheless stated in its direct form, consistent with the baseline specification in Section 11.3, and the distinction between a direct and a mediated effect is discussed further in Chapter 13.

Table 11.1 summarizes the channels, variables, expected signs, and corresponding hypotheses that structure the empirical analysis in Chapters 12 and 13.

**Table 11.1: Transmission Channels, Variables, and Hypotheses**

| Channel                               | Variable                                           | Expected Sign | Hypothesis                                                       |
|---------------------------------------|----------------------------------------------------|---------------|------------------------------------------------------------------|
| Direct resource dependence            | OIL (Oil Exports, % of merchandise exports)        | Negative      | H1: Oil export dependence is negatively associated with HDI      |
| Institutional governance              | GE (Government Effectiveness)                      | Positive      | H2: Government effectiveness is positively associated with HDI   |
| Fiscal allocation and public spending | HEALTH (Government Health Expenditure, % of total) | Positive      | H3: Public healthcare spending is positively associated with HDI |

|                            |                                                   |          |                                                                   |
|----------------------------|---------------------------------------------------|----------|-------------------------------------------------------------------|
| Human capital accumulation | HC (Secondary School Enrollment, %)               | Positive | H4: Secondary school enrollment is positively associated with HDI |
| Institutional governance   | POL (Political Stability and Absence of Violence) | Positive | H5: Political stability is positively associated with HDI         |
| Macroeconomic stability    | INF (Inflation Rate)                              | Negative | Control variable; no independent directional hypothesis is tested |

### 11.3 Methodological Assumptions and Model Framing

The baseline econometric model evaluating the reduced-form relationship across these operationalized variables is specified as follows:

$$HDI_t = b_0 + b_1 OIL_t + b_2 GE_t + b_3 HEALTH_t + b_4 HC_t + b_5 POL_t + b_6 INF_t + e_t$$

To interpret this empirical equation appropriately, four methodological boundaries must be stated explicitly.

First, the model acknowledges potential endogeneity and reverse causality. Oil dependence, government effectiveness, social spending, human capital, and inflation interact dynamically with one another and with the dependent variable, and a single-equation reduced-form model can only estimate conditional linear associations, not structural causal effects. For example, higher human development can itself contribute to improved government effectiveness or to higher tax revenue available for social spending, so causality plausibly runs in both directions.

Second, the limited number of annual observations available for Nigeria constrains the statistical power of the estimations that follow. For this reason, the empirical exercise in this thesis is framed explicitly as an exploratory time-series case study rather than a definitive

structural test of the resource curse hypothesis. This framing is carried through consistently in the interpretation of results in Chapter 13.

Third, omitted variable bias is an inherent limitation of any single-country macroeconomic model of this kind. Factors such as international crude oil price movements, exchange rate policy, demographic change, and security conditions all plausibly affect Nigeria's human development trajectory but cannot all be included as regressors without exhausting the available degrees of freedom. The error term,  $\epsilon_t$ , absorbs these unobserved influences, and the estimated coefficients must be read as conditional associations net of the included variables, not as fully controlled causal estimates.

Fourth, a structural overlap exists between two of the explanatory variables and the dependent variable itself. Because the Human Development Index incorporates education and health-related components in its own construction, including secondary school enrollment (HC) and, to a lesser extent, health expenditure (HEALTH) as regressors, it introduces a degree of mechanical association between the right-hand side and the left-hand side of the model. This overlap is addressed directly in Chapter 12 through a dedicated robustness discussion, and it means that strong associations involving HC in particular should not be read as independent causal evidence of the role of education, a point that is emphasized again in Chapter 13.

#### **11.4 Positioning of the Study within the Existing Literature**

Much of the empirical literature on the Nigerian resource curse evaluates the relationship between oil dependence and aggregate output measures, typically real GDP growth or capital accumulation. This thesis takes a different dependent variable as its point of departure. Rather than treating national output growth as a proxy for societal progress, it positions the Human Development Index, a composite measure of health, education, and living standards, as the

outcome of interest, and integrates institutional governance, public spending, human capital, and macroeconomic stability into a single empirical framework.

This choice reflects the broader argument developed across Chapters 2 through 10: that the costs of resource dependence in Nigeria are visible not primarily in aggregate growth figures, which have at times remained positive, but in the population's lived welfare and capabilities. By combining institutional indicators such as government effectiveness and political stability with sector-level indicators such as health expenditure and school enrollment, the empirical model developed in Chapter 12 is designed to test not simply whether oil dependence correlates with development outcomes, but which of the specific mechanisms identified in Section 11.2 appear, within the constraints of the available data, to be more strongly associated with Nigeria's human development trajectory. The results of this test, and their limitations, are presented and discussed in Chapter 13.

## **Chapter 12: Data and empirical procedure**

### **12.1 Sample Overview and Dataset Structure**

The quantitative analysis evaluates annual time-series data for Nigeria covering the period from 2000 to 2023, representing 24 annual observations. Earlier years (1990 to 1999) are excluded from the estimation sample because government effectiveness, healthcare expenditure, secondary school enrollment, and political stability are almost entirely unavailable for that decade in the source databases; interpolating across such long, multi-year gaps would require assumptions about institutional development that the available data cannot support.

Within the 2000 to 2023 window, by contrast, the remaining gaps are isolated single-year gaps rather than multi-year blocks. Specifically: Oil Exports (OIL) is missing only in 2004; Government Effectiveness (GE) and Political Stability (POL) are each missing only in 2001; and Secondary School Enrollment (HC) is missing in 2003, 2017, 2019, and 2022, with no two missing years adjacent to one another. Public healthcare expenditure (HEALTH) has no missing years in this window. Each of these isolated gaps was filled using linear interpolation between the two adjacent known observations. This produces a complete, continuous annual series of 24 observations (2000 to 2023), rather than the 18 non-consecutive observations used in the previous version of this chapter, which had been constructed by discarding every year in which any single variable was missing. The revised appendix reports the complete interpolated series, with interpolated cells marked accordingly.

All data series were retrieved from verified international databases. The Human Development Index (HDI) is sourced from the United Nations Development Programme (UNDP). Oil exports as a percentage of total merchandise exports (OIL), the gross secondary school enrollment ratio (HC), and the annual inflation rate (INF) are retrieved from the World Bank World Development Indicators (WDI). Government effectiveness (GE) and political stability and absence of violence (POL) are obtained from the World Bank Worldwide Governance Indicators (WGI). Domestic general government health expenditure as a percentage of general government expenditure (HEALTH) is collected from the World Health Organization (WHO) Global Health Expenditure Database.

Because the Human Development Index inherently incorporates educational attainment into its composite measure, Human Capital (HC) cannot be treated as a strictly exogenous regressor. This structural overlap, and its implications for interpreting the HC coefficient, are addressed directly in Section 12.6.

## 12.2 Descriptive Statistics and Time-Series Properties

Table 12.1 reports summary statistics for the seven variables over the complete 24-year interpolated sample.

**Table 12.1: Descriptive Statistics (N = 24, 2000-2023, interpolated series)**

| Statistic      | HDI     | OIL     | GE      | HEALTH | HC      | POL     | INF     |
|----------------|---------|---------|---------|--------|---------|---------|---------|
| Mean           | 0.5077  | 92.1180 | -1.0673 | 4.1417 | 38.5817 | -1.8777 | 13.1271 |
| Median         | 0.5100  | 91.2317 | -1.0478 | 3.9000 | 40.1931 | -1.9050 | 12.7073 |
| Std. Deviation | 0.0366  | 4.4014  | 0.1733  | 1.2507 | 7.2574  | 0.1941  | 4.4623  |
| Skewness       | -0.4498 | 0.1751  | -1.1141 | 0.9709 | -0.2648 | 0.3937  | 0.4966  |
| Kurtosis       | -0.6972 | -1.1129 | 0.7125  | 0.5100 | -0.6908 | -0.6092 | 0.1868  |
| Minimum        | 0.4350  | 84.0390 | -1.5264 | 2.4000 | 23.9613 | -2.2100 | 5.3861  |
| Maximum        | 0.5600  | 99.6565 | -0.8458 | 7.3000 | 52.7967 | -1.4600 | 24.6596 |

HDI shows a strong, nearly monotonic upward trend over the sample period (correlation with a linear time trend of 0.983), which motivates the inclusion of a deterministic trend term in the unit root tests reported in Section 12.3.

## 12.3 Unit Root Diagnostics (Augmented Dickey-Fuller Tests)<sup>32</sup>

Before estimating time-series regressions, it is necessary to establish the order of integration of each variable, both to avoid spurious regression and to confirm that no variable is integrated of order two,  $I(2)$ , which would invalidate the Autoregressive Distributed Lag (ARDL) bounds testing procedure used in Section 12.5.

<sup>32</sup> Anthropic. (2025). *Claude* (Sonnet 4.5) [Large language model]. <https://claude.ai>

Two methodological choices are made explicit here, in response to the previous version of this chapter. First, the deterministic specification (constant only, or constant with trend) for each level-series ADF test is chosen based on the correlation between the series and a linear time trend: a trend term is included when this correlation is at least 0.7 in absolute value, and excluded otherwise. On this criterion, HDI, GE, and HC are tested with a constant and trend; OIL, HEALTH, POL, and INF are tested with a constant only. First-difference tests are conducted with a constant only, consistent with standard practice once the deterministic trend has been removed by differencing.

Second, the lag length for each ADF regression is selected using the Schwarz Information Criterion (SIC), searching over lag orders 0 to 2, given the small sample size. Third, because dedicated statistical software was not used for this revision, exact MacKinnon finite-sample p-values are not reported; instead, each test statistic is compared directly against MacKinnon (1994) asymptotic response-surface critical values, computed for the actual regression sample size in each case. This is stated explicitly so that the basis for each stationarity decision is transparent.

**Table 12.2: ADF Unit Root Tests, Levels<sup>33</sup>**

| Variable | Spec.    | Lag (SIC) | N  | tau    | CV 1%  | CV 5%  | CV 10% | Decision                            |
|----------|----------|-----------|----|--------|--------|--------|--------|-------------------------------------|
| HDI      | c, trend | 1         | 22 | -6.174 | -4.441 | -3.633 | -3.253 | Reject H0 (stationary around trend) |
| OIL      | c        | 2         | 21 | -1.985 | -3.785 | -3.011 | -2.646 | Fail to reject H0                   |
| GE       | c, trend | 0         | 23 | -2.245 | -4.417 | -3.622 | -3.247 | Fail to reject H0                   |
| HEALTH   | c        | 0         | 23 | -2.490 | -3.750 | -2.997 | -2.638 | Fail to reject H0                   |
| HC       | c, trend | 2         | 21 | -2.391 | -4.469 | -3.645 | -3.260 | Fail to reject H0                   |

<sup>33</sup> Anthropic. (2025). *Claude* (Sonnet 4.5) [Large language model]. <https://claude.ai>

|     |   |   |    |        |        |        |        |                   |
|-----|---|---|----|--------|--------|--------|--------|-------------------|
| POL | c | 0 | 23 | -2.617 | -3.750 | -2.997 | -2.638 | Fail to reject H0 |
| INF | c | 2 | 21 | -1.263 | -3.785 | -3.011 | -2.646 | Fail to reject H0 |

**Table 12.3: ADF Unit Root Tests, First Differences<sup>34</sup>**

| Variable  | Lag (SIC) | N  | tau    | CV 1%  | CV 5%  | CV 10% | Decision               | Order    |
|-----------|-----------|----|--------|--------|--------|--------|------------------------|----------|
| D(HDI)    | 0         | 22 | -2.599 | -3.767 | -3.004 | -2.642 | Fail to reject H0      | see note |
| D(OIL)    | 0         | 22 | -5.980 | -3.767 | -3.004 | -2.642 | Reject H0 (stationary) | I(1)     |
| D(GE)     | 0         | 22 | -3.796 | -3.767 | -3.004 | -2.642 | Reject H0 (stationary) | I(1)     |
| D(HEALTH) | 0         | 22 | -4.733 | -3.767 | -3.004 | -2.642 | Reject H0 (stationary) | I(1)     |
| D(HC)     | 0         | 22 | -5.567 | -3.767 | -3.004 | -2.642 | Reject H0 (stationary) | I(1)     |
| D(POL)    | 0         | 22 | -5.584 | -3.767 | -3.004 | -2.642 | Reject H0 (stationary) | I(1)     |
| D(INF)    | 2         | 20 | -3.556 | -3.807 | -3.020 | -2.650 | Reject H0 (stationary) | I(1)     |

Six of the seven variables display a consistent pattern: the null hypothesis of a unit root cannot be rejected in levels but is rejected in first differences, indicating that OIL, GE, HEALTH, HC, POL, and INF are integrated of order one, I(1). HDI is a genuine borderline case: the level test with a trend rejects the unit root null, suggesting HDI may be trend-stationary, I(0), yet the first-difference test does not clearly reject a unit root under a no-trend specification. This ambiguity is itself informative: it illustrates, on the corrected dataset, the low power of unit root tests in samples of this size, which the previous version of this chapter did not acknowledge explicitly. For the purposes of the ARDL bounds testing

<sup>34</sup> Anthropic. (2025). *Claude* (Sonnet 4.5) [Large language model]. <https://claude.ai>

procedure in Section 12.5, this ambiguity is not disqualifying, since the Pesaran, Shin and Smith (2001) approach remains valid whether the dependent variable is  $I(0)$  or  $I(1)$ , provided no regressor is  $I(2)$ ; no evidence of  $I(2)$  behavior is found for any variable here. HDI is nonetheless treated with caution throughout the remainder of this chapter, and this caveat is carried through to the interpretation in Chapter 13.

It is also worth noting that this corrected sample changes two conclusions relative to the previous version of this chapter. First, inflation (INF) is now found to be  $I(1)$  rather than  $I(0)$  in levels; second, the general pattern of integration is more internally consistent across variables. Both changes follow directly from replacing the 18 non-consecutive observations with the complete, continuous 24-year interpolated series, and are reported here for transparency.

#### 12.4 Baseline Six-Variable OLS Model Estimation

The baseline specification estimates a six-variable Ordinary Least Squares (OLS) model in levels:

$$HDI_t = b_0 + b_1 OIL_t + b_2 GE_t + b_3 HEALTH_t + b_4 HC_t + b_5 POL_t + b_6 INF_t + et$$

As in the previous version of this chapter, this levels regression is treated strictly as a descriptive summary of conditional associations across the sample window, not as a structural causal model. Table 12.4 reports the corrected results, estimated on the complete 24-year interpolated series; this table, and no other, is the authoritative OLS output referenced throughout the remainder of this thesis, including Chapter 13.

**Table 12.4a: Model Summary**

| Statistic  | Value  |
|------------|--------|
| Multiple R | 0.9355 |
| R Square   | 0.8751 |

|                   |        |
|-------------------|--------|
| Adjusted R Square | 0.8310 |
| Standard Error    | 0.0150 |
| Observations (N)  | 24     |

**Table 12.4b: ANOVA**

| Source     | df | SS      | MS       | F      | Significance F |
|------------|----|---------|----------|--------|----------------|
| Regression | 6  | 0.02693 | 0.00449  | 19.846 | 0.0000         |
| Residual   | 17 | 0.00384 | 0.000226 |        |                |
| Total      | 23 | 0.03077 |          |        |                |

**Table 12.4c: Regression Coefficients**

| Variable                            | Coefficient | Std. Error | t-Stat | p-value |
|-------------------------------------|-------------|------------|--------|---------|
| Intercept                           | 0.6343      | 0.1580     | 4.015  | 0.0009  |
| Oil Exports (OIL)                   | -0.0011     | 0.0012     | -0.859 | 0.4020  |
| Government Effectiveness (GE)       | 0.0991      | 0.0295     | 3.357  | 0.0037  |
| Gov. Expenditure on Health (HEALTH) | 0.0002      | 0.0035     | 0.070  | 0.9453  |
| Human Capital (HC)                  | 0.0027      | 0.0007     | 3.860  | 0.0013  |
| Political Stability (POL)           | 0.0232      | 0.0312     | 0.744  | 0.4672  |
| Inflation Rate (INF)                | 0.0011      | 0.0009     | 1.200  | 0.2464  |

Government Effectiveness (GE,  $p = 0.0037$ ) and Secondary School Enrollment (HC,  $p = 0.0013$ ) display statistically significant positive conditional associations with human development, consistent with Hypotheses H2 and H4 set out in Chapter 11. Oil export

concentration (OIL) again yields a negative coefficient, but remains statistically insignificant ( $p = 0.4020$ ). Public healthcare spending (HEALTH,  $p = 0.9453$ ), political stability (POL,  $p = 0.4672$ ), and inflation (INF,  $p = 0.2464$ ) are also statistically insignificant in this specification. These conclusions are qualitatively similar to those obtained from the flawed 18-observation sample, but they now rest on a single, internally consistent regression output rather than on two conflicting sets of figures.

### 12.5 Parsimonious ARDL Specification and Cointegration Tests

To evaluate short-run and long-run dynamics while conserving degrees of freedom, the model is reduced to a parsimonious four-variable specification comprising HDI, Oil Export Concentration (OIL), Government Effectiveness (GE), and Secondary School Enrollment (HC). As before, including all six regressors in a dynamic model with  $N = 24$  would leave too few degrees of freedom for reliable inference.

The parsimonious model is specified as an ARDL(1,0,0,0): one lag of the dependent variable, and only the contemporaneous value of each of the three regressors. Its derivation into the estimated error-correction form is made explicit here, in response to the request to document this step. The ARDL(1,0,0,0) model in levels is:

$$HDI_t = c + a1 HDI_{t-1} + b0 OIL_t + b1 GE_t + b2 HC_t + \varepsilon_t$$

Subtracting  $HDI_{t-1}$  from both sides and adding and subtracting the lagged levels of each regressor yields the standard Bardsen (1989) reparameterization, estimated here as an unrestricted error-correction model (UECM):

$$D(HDI_t) = c + \lambda * HDI_{t-1} + \vartheta 1 * OIL_{t-1} + \vartheta 2 * GE_{t-1} + \vartheta 3 * HC_{t-1} + \varphi 1 * D(OIL_t) + \varphi 2 * D(GE_t) + \varphi 3 * D(HC_t) + \varepsilon_t$$

This algebraic rearrangement is the reason the estimated table below contains contemporaneous first differences of all three explanatory variables alongside their lagged levels: both sets of terms come from the same single lag structure of the original

ARDL(1,0,0,0) model, not from two separate lag decisions. The coefficient lambda is the error-correction term; a negative and statistically significant lambda is evidence of cointegration. The long-run coefficient on each regressor is recovered as minus theta divided by lambda.

**Table 12.5a: Unrestricted Error-Correction Model (N = 23)**

| Variable              | Coefficient | Std. Error | t-Stat | p-value |
|-----------------------|-------------|------------|--------|---------|
| Intercept             | -0.0152     | 0.0327     | -0.466 | 0.6480  |
| HDI(-1) [ $\lambda$ ] | -0.0186     | 0.0440     | -0.423 | 0.6786  |
| OIL(-1) [ $\theta$ 1] | 0.0001      | 0.0002     | 0.591  | 0.5632  |
| GE(-1) [ $\theta$ 2]  | -0.0127     | 0.0067     | -1.897 | 0.0773  |
| HC(-1) [ $\theta$ 3]  | 0.0001      | 0.0002     | 0.558  | 0.5853  |
| D(OIL)                | 0.0003      | 0.0002     | 1.510  | 0.1519  |
| D(GE)                 | -0.0024     | 0.0066     | -0.369 | 0.7172  |
| D(HC)                 | -0.0000     | 0.0002     | -0.180 | 0.8595  |

On the corrected, interpolated dataset, the error-correction coefficient is -0.0186 and is not statistically significant ( $p = 0.6786$ ), a substantially weaker result than the marginal 10% significance obtained on the previous, flawed 18-observation sample. The bounds F-test for the joint significance of the four lagged-level terms (HDI(-1), OIL(-1), GE(-1), HC(-1)) is reported in Table 12.5b.

**Table 12.5b: ARDL Bounds Test for Cointegration**

| Test               | Statistic | df      | Pesaran et al. (2001) 5% Lower Bound I(0) | Pesaran et al. (2001) 5% Upper Bound I(1) | Conclusion                          |
|--------------------|-----------|---------|-------------------------------------------|-------------------------------------------|-------------------------------------|
| ARDL Bounds F-test | 4.154     | (4, 15) | 3.23                                      | 4.35                                      | Inconclusive (falls between bounds) |

The bounds test statistic remains inconclusive under the standard Pesaran et al. (2001) critical values for  $k = 3$  regressors, Case III (unrestricted intercept, no trend). These critical values, and the small-sample tables developed by Narayan (2005) as an alternative, are tabulated starting from a minimum sample size of approximately  $T = 30$ ; the present sample of  $N = 23$  for this regression falls below the range covered by either table. The bounds test result is therefore reported as indicative only, and should not be read as a precise significance statement at this sample size.

As a complementary check, the Engle-Granger two-step procedure was also applied. The long-run static regression of HDI on OIL, GE, and HC in levels ( $N = 24$ ) yields an R-squared of 0.8407; the Augmented Dickey-Fuller test on the residuals of this regression produces a test statistic of -2.321 (lag length 0, selected by SIC). This is well short of the Engle-Granger critical values for a four-variable system, which are approximately -4.10 at the 5% level, so the null hypothesis of no cointegration cannot be rejected. This result is consistent with the inconclusive bounds test and with the statistically insignificant error-correction coefficient. Taken together, the error-correction coefficient, the bounds test, and the Engle-Granger test provide no reliable evidence of a long-run cointegrating relationship among HDI, OIL, GE, and HC in this sample. This conclusion is more cautious than the one drawn from the previous, flawed dataset, not less: correcting the sample construction has weakened, rather than strengthened, the case for a stable long-run relationship. Because  $\lambda$  is not

statistically distinguishable from zero, the implied long-run coefficients (recovered as minus theta divided by lambda) are numerically unstable: dividing by a coefficient this close to zero and this imprecisely estimated produces long-run estimates with very large standard errors, including a sign reversal for GE relative to its short-run coefficient. For this reason, the long-run coefficients are reported in Table 12.5c for completeness, but are not treated as established long-run effects, and are not used as the basis for any conclusion in Chapter 13.

**Table 12.5c: Implied Long-Run Coefficients (not interpreted as established effects; see text)**

| Variable | Long-Run Coefficient | Std. Error | t-Stat | p-value |
|----------|----------------------|------------|--------|---------|
| OIL      | 0.0071               | 0.0200     | 0.357  | 0.7261  |
| GE       | -0.6802              | 1.8688     | -0.364 | 0.7210  |
| HC       | 0.0062               | 0.0111     | 0.562  | 0.5825  |

Diagnostic tests on the UECM residuals are reported in Table 12.5d. Consistent with the more cautious language requested for this chapter, the results are described in terms of what each test does or does not detect, rather than as confirmation of the model's validity.

**Table 12.5d: Diagnostic Tests**

| Diagnostic Test            | Test Statistic | p-value | Result                                 |
|----------------------------|----------------|---------|----------------------------------------|
| Breusch-Godfrey LM (1 lag) | LM = 0.017     | 0.8966  | Does not detect serial correlation     |
| ARCH LM (1 lag)            | LM = 0.769     | 0.3804  | Does not detect ARCH effects           |
| Jarque-Bera Normality      | JB = 0.537     | 0.7647  | Does not reject normality of residuals |

|                           |                                                 |        |                                                                                                                                                                          |
|---------------------------|-------------------------------------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ramsey RESET<br>(2 terms) | $F = 3.654$ (df 2, 13)                          | 0.0551 | Borderline: mild evidence of functional-form misspecification at the 10% level, not at 5%                                                                                |
| CUSUM Stability           | $\max  \text{CUSUM}  / \text{boundary} = 0.325$ | --     | Recursive residuals remain within the 5% boundary throughout; no instability detected, though the small number of recursive residuals (15) limits the power of this test |

## 12.6 Robustness Considerations: The HC-HDI Structural Overlap

Section 12.1 and Chapter 11 both note that Human Capital (HC) and the Human Development Index (HDI) are not fully independent, because HDI's own construction incorporates educational attainment. This section quantifies that concern directly, as requested.

Variance Inflation Factors (VIF) computed for the six-variable OLS model of Section 12.4 are reported in Table 12.6. All VIF values are below conventional concern thresholds (the highest is 3.74, for POL), indicating that multicollinearity among the six regressors themselves is not severe.

**Table 12.6: Variance Inflation Factors, Six-Variable OLS Model**

| Variable | VIF  |
|----------|------|
| OIL      | 2.96 |
| GE       | 2.66 |
| HEALTH   | 1.90 |
| HC       | 2.63 |
| POL      | 3.74 |
| INF      | 1.67 |

This VIF result, however, addresses only correlation among the regressors, not the separate concern raised in Chapter 11: the raw correlation between HC and HDI themselves is 0.858, reflecting the mechanical overlap between the two series rather than ordinary multicollinearity. A fully independent robustness check, such as re-estimating the model with HDI net of its own education component, or with an alternative human capital proxy, would require sub-index or alternative data that were not part of the dataset collected for this thesis, and is therefore not feasible here; this data limitation is acknowledged explicitly rather than treated as resolved. Given this constraint, the strong and consistently significant association between HC and HDI reported in Sections 12.4 and 12.5 should be read as evidence of a shared underlying development dynamic between education and composite human development, and not as independent evidence that secondary school enrollment causally drives human development in Nigeria. This qualification is carried through to the interpretation of results in Chapter 13.

## **Chapter 13: Empirical Results, Interpretation, and Policy Discussion**

### **13.1 Empirical Findings and Hypothesis Evaluation**

This section evaluates the five directional hypotheses set out in Chapter 11 against the single authoritative regression output from Chapter 12: the six-variable OLS model estimated on the complete, interpolated 24-year sample (Table 12.4). The ARDL and cointegration results from Section 12.5 are discussed separately in Section 13.2, because, as shown there, they do not provide reliable evidence of a stable long-run relationship and cannot be used to confirm or reject a hypothesis in the same way the OLS estimates can.

| Hypothesis | Target Variable                  | OLS Coefficient | p-value | Statistical Status | Outcome                                          |
|------------|----------------------------------|-----------------|---------|--------------------|--------------------------------------------------|
| H1         | Oil Dependency (OIL)             | -0.0011         | 0.4020  | Insignificant      | Not statistically supported in this sample       |
| H2         | Government Effectiveness (GE)    | 0.0991          | 0.0037  | Significant        | Supported                                        |
| H3         | Health Spending (HEALTH)         | 0.0002          | 0.9453  | Insignificant      | Not statistically supported in this sample       |
| H4         | Secondary School Enrollment (HC) | 0.0027          | 0.0013  | Significant        | Supported, subject to the caveat in Section 12.6 |
| H5         | Political Stability (POL)        | 0.0232          | 0.4672  | Insignificant      | Not statistically supported in this sample       |

*Note: INF is included in the model as a control variable and is not attached to a directional hypothesis.*

Inflation (INF) is included in the model as a control variable for macroeconomic volatility, consistent with its treatment in Chapter 11, and is not attached to a directional hypothesis. Its coefficient is small and statistically insignificant (0.0011,  $p = 0.2464$ ).

Two hypotheses, H2 and H4, are supported by statistically significant positive coefficients. The remaining three, H1, H3, and H5, are not statistically supported. Consistent with the distinction requested in Chapter 12's feedback, this thesis treats "not statistically supported" as a statement about insufficient evidence at this sample size, not as evidence against the underlying relationship. With only 24 annual observations, the model has limited statistical

power, and a true effect for OIL, HEALTH, or POL cannot be ruled out; it simply cannot be detected with confidence here.

### **13.2 Econometric Interpretation and Comparative Analysis**

The statistically significant, positive coefficients on Government Effectiveness (GE) and Secondary School Enrollment (HC) are the most robust findings to come out of the OLS model, in the sense that they survive the correction of the dataset, remain of similar magnitude to earlier estimates, and remain significant at conventional levels. This is consistent with modern institutional theories of the resource curse, which argue that natural resource abundance affects development outcomes primarily through the institutions that govern how resource revenue is managed, rather than through a direct mechanical channel (Mehlum, Moene and Torvik, 2006; Robinson, Torvik and Verdier, 2006). The statistically insignificant direct coefficient on oil export concentration (OIL) is consistent with this literature: it does not indicate that petroleum dependence is harmless, only that its effect, if any, is not detectable as a simple direct association in this specification and sample.

These OLS findings should nonetheless be read narrowly. They describe a conditional association within a single-country, 24-year annual sample, not a structural or long-run relationship. This distinction matters because the ARDL and cointegration results in Section 12.5, which were specifically designed to test for a long-run relationship among HDI, OIL, GE, and HC, do not support one. The error-correction coefficient is small and statistically insignificant ( $\lambda = -0.0186$ ,  $p = 0.6786$ ); the bounds F-test (4.154) falls between the Pesaran et al. (2001) critical bounds and is therefore inconclusive; and the Engle-Granger residual test ( $\tau = -2.321$ ) fails to reject the null of no cointegration. On the corrected dataset, this evidence is, if anything, weaker than it was on the previous, flawed sample.

Consequently, this thesis does not treat the significant OLS coefficients on GE and HC as

evidence of a stable long-run equilibrium relationship, only as evidence of a conditional within-sample association. The long-run coefficients implied by the ARDL model are reported in Table 12.5c for transparency but are not used to support any claim in this chapter, because they are numerically unstable given the statistically insignificant error-correction term.

The coefficient on public healthcare spending (HEALTH) is close to zero and far from significant ( $p = 0.9453$ ). Several explanations are plausible: measurement issues in a spending series that averages only 4.1 percent of total government expenditure over the sample period, sub-national leakage in how health funds are disbursed, concentration of spending in urban tertiary facilities rather than primary care, or simply that the true effect is smaller than this sample can detect. The data used in this thesis cannot distinguish among these explanations, and none of them is asserted as the explanation. This is a deliberate departure from the previous version of this chapter, which attributed the insignificant HEALTH coefficient to "broader allocative inefficiencies" without evidence in the model to support that specific claim.

Similarly, the positive but insignificant coefficient on political stability (POL,  $p = 0.4672$ ) is consistent with, but does not confirm, the institutional narrative developed in Chapter 7. Given that GE and POL are both governance indicators and are likely to move together over time, part of the explanatory power that might otherwise appear on POL may already be captured by GE in this specification; this is a plausible interpretation, not a tested one, given the scope of this thesis.

### **13.3 Methodological Limitations of the Empirical Exercise**

The following limitations apply to the empirical exercise as a whole and should be read alongside every finding in this chapter.

Limited sample size. Even after correcting the dataset construction, the estimation sample covers only 24 annual observations (2000 to 2023), and the ARDL specification in Section 12.5 uses 23. This is a small sample by the standards of time-series econometrics, and it limits statistical power throughout: insignificant coefficients on OIL, HEALTH, and POL may reflect a genuine absence of association, or may simply reflect the difficulty of detecting a true effect with this few observations. The two are not distinguishable here.

No reliable evidence of cointegration. The bounds test, the Engle-Granger test, and the error-correction coefficient are all either inconclusive or insignificant. This thesis therefore does not claim to have identified a long-run equilibrium relationship among HDI, OIL, GE, and HC; it reports conditional associations from a single-equation OLS model, explicitly bounded by an exploratory framing, as set out in Chapter 11.

Structural overlap between HC and HDI. As shown in Section 12.6, HC and HDI are correlated at 0.858, and HDI's own construction incorporates educational attainment. The significant HC coefficient throughout this thesis should be read as reflecting this shared underlying development dynamic, not as independent causal evidence that secondary school enrollment drives human development in Nigeria.

Borderline diagnostics. The Ramsey RESET test on the ARDL specification is borderline ( $p = 0.0551$ ), suggesting mild, inconclusive evidence of functional form misspecification that this thesis does not attempt to resolve further given the sample size.

Omitted variable bias and endogeneity. As discussed in Chapter 11, a single-equation reduced-form model of this kind cannot rule out reverse causality (for example, higher human development enabling more effective governance or higher tax revenue for social spending) or the influence of unobserved factors such as international oil price movements, exchange rate policy, or security conditions.

Absence of sub-national granularity. National aggregate series mask substantial disparities between Nigeria's geopolitical zones, particularly between petroleum-producing and non-producing regions, which this thesis is not able to capture with the available data.

### **13.4 Policy Discussion**

Because the empirical evidence in this thesis identifies conditional associations rather than established causal or long-run effects, the observations below are framed as jointly motivated by the descriptive and empirical findings of this thesis and by the wider resource curse literature discussed in Chapters 2 through 10, rather than as policy conclusions that follow directly and exclusively from the regression results.

The significant positive association between Government Effectiveness and HDI, together with the institutional evidence presented in Chapter 7, is consistent with continued attention to state capacity, civil service quality, and public sector delivery as an area of policy relevance in Nigeria, though this thesis does not claim to have isolated government effectiveness as the cause of Nigeria's human development trajectory.

The significant positive association between secondary school enrollment and HDI is consistent with the importance the literature attaches to human capital formation, though, as emphasized throughout this chapter, this association cannot be separated from the mechanical overlap between HC and HDI, and should not be read as an independent, standalone empirical case for education policy.

The lack of a statistically significant direct association between oil export concentration and HDI does not imply that diversification away from petroleum dependence is unimportant; it is consistent with the institutional literature's view that resource dependence operates through

governance and fiscal channels rather than through a direct mechanical effect, a view this thesis's data are not positioned to confirm or refute conclusively.

### **13.5 Summary and Conclusion**

This thesis set out to examine, through an exploratory time-series case study of Nigeria between 2000 and 2023, whether oil dependence, institutional governance, public spending, human capital, and macroeconomic conditions are associated with the country's human development trajectory.

Two findings are reasonably robust across the corrected specification: Government Effectiveness and Secondary School Enrollment are both positively and significantly associated with HDI in the baseline OLS model, and these associations persist after correcting the dataset from 18 non-consecutive to 24 continuous annual observations. These findings should nonetheless be read as conditional associations within a small sample, not as causal or long-run effects, and the HC finding in particular is qualified by its mechanical overlap with HDI.

Several findings are inconclusive. The direct association between oil dependence and HDI is not statistically significant, and this thesis cannot determine whether this reflects a genuinely limited direct effect, an effect mediated entirely through other channels, or simply low statistical power. The associations for health spending and political stability are similarly inconclusive. Most importantly, the attempt to establish a long-run cointegrating relationship among HDI, OIL, GE, and HC did not succeed: the bounds test, the Engle-Granger test, and the error-correction coefficient all fail to provide reliable evidence of a stable long-run equilibrium.

For these reasons, this thesis does not claim to have established a resource curse in Nigeria in any statistically rigorous sense. What it offers instead is descriptive and correlational evidence, developed across ten chapters of contextual analysis and three chapters of empirical testing, that is broadly consistent with the institutional strand of the resource curse literature, without being able to isolate a definitive causal mechanism from 24 annual observations.

What can be learned from this Nigerian case study is therefore bounded but still meaningful: institutional governance and human capital appear, descriptively, to move together with human development in Nigeria over this period, in a way that is consistent with, though not proof of, the mechanisms discussed throughout this thesis. What cannot be learned from this case study, given the data available, is the precise causal weight of oil dependence relative to these other factors, or whether the observed associations would hold over a longer time horizon, a larger cross-section of resource-dependent countries, or sub-national data.

Future research on this question would benefit most directly from three things this thesis could not obtain: a longer and more complete annual time series as Nigerian data collection improves, sub-national data capturing the divergence between oil-producing and non-producing regions, and a comparative panel design across multiple resource-dependent economies, which would allow the institutional channels identified here to be tested with considerably more statistical power than a single-country case study permits.

## 14 Appendix:

The original data-set from which the study derives its model

| Year | HDI    | OIL (%)        | GE             | HEALTH (%)     | HC (%)         | POL            | INF (%) |
|------|--------|----------------|----------------|----------------|----------------|----------------|---------|
| 1990 | 0.3790 | <i>missing</i> | <i>missing</i> | <i>missing</i> | 23.9810        | <i>missing</i> | 7.3644  |
| 1991 | 0.3830 | <i>missing</i> | <i>missing</i> | <i>missing</i> | <i>missing</i> | <i>missing</i> | 13.0070 |
| 1992 | 0.3880 | <i>missing</i> | <i>missing</i> | <i>missing</i> | <i>missing</i> | <i>missing</i> | 44.5888 |
| 1993 | 0.3930 | <i>missing</i> | <i>missing</i> | <i>missing</i> | <i>missing</i> | <i>missing</i> | 57.1653 |
| 1994 | 0.3970 | <i>missing</i> | <i>missing</i> | <i>missing</i> | <i>missing</i> | <i>missing</i> | 57.0317 |
| 1995 | 0.4020 | 95.5286        | <i>missing</i> | <i>missing</i> | <i>missing</i> | <i>missing</i> | 72.8355 |
| 1996 | 0.4080 | 96.2171        | -1.0785        | <i>missing</i> | <i>missing</i> | -1.0600        | 29.2683 |
| 1997 | 0.4130 | 96.9792        | <i>missing</i> | <i>missing</i> | <i>missing</i> | <i>missing</i> | 8.5299  |
| 1998 | 0.4190 | 98.9421        | -1.3236        | <i>missing</i> | <i>missing</i> | -0.5900        | 9.9964  |
| 1999 | 0.4250 | 99.6350        | <i>missing</i> | <i>missing</i> | 22.8324        | <i>missing</i> | 6.6184  |
| 2000 | 0.4350 | 99.6565        | -1.2673        | 2.4000         | 23.9613        | -1.4600        | 6.9333  |
| 2001 | 0.4380 | 94.0375        | <i>missing</i> | 2.8000         | 26.4000        | <i>missing</i> | 18.8736 |
| 2002 | 0.4510 | 97.8967        | -1.5264        | 2.7000         | 28.8738        | -1.6300        | 12.8766 |
| 2003 | 0.4640 | 98.0000        | -1.3727        | 4.0000         | <i>missing</i> | -1.6400        | 14.0318 |
| 2004 | 0.4770 | <i>missing</i> | -1.0917        | 6.6000         | 33.9481        | -1.7500        | 14.9980 |
| 2005 | 0.4840 | 98.2389        | -1.0898        | 6.4000         | 33.7729        | -1.6700        | 17.8635 |
| 2006 | 0.4890 | 93.6663        | -1.0455        | 7.3000         | 33.1263        | -2.0300        | 8.2274  |
| 2007 | 0.4920 | 91.7433        | -0.9559        | 4.3000         | 30.4232        | -2.0100        | 5.3861  |
| 2008 | 0.4970 | 90.3622        | -1.0168        | 4.6000         | 33.6113        | -1.8600        | 11.5831 |
| 2009 | 0.4990 | 87.1326        | -1.1203        | 3.7000         | 37.1381        | -1.9900        | 12.5379 |
| 2010 | 0.5020 | 89.1265        | -1.1376        | 2.7000         | 41.7838        | -2.2100        | 13.7401 |

|      |        |         |         |        |                |         |         |
|------|--------|---------|---------|--------|----------------|---------|---------|
| 2011 | 0.5080 | 84.0390 | -1.1214 | 2.8000 | 43.0240        | -1.9600 | 10.8261 |
| 2012 | 0.5120 | 87.6234 | -0.9699 | 3.7000 | 44.4558        | -2.0400 | 12.2242 |
| 2013 | 0.5170 | 90.8542 | -0.9820 | 3.5000 | 52.7967        | -2.0900 | 8.4955  |
| 2014 | 0.5240 | 87.8733 | -1.0549 | 3.3000 | 42.7822        | -2.1300 | 8.0474  |
| 2015 | 0.5300 | 96.4782 | -0.9139 | 5.3000 | 43.8247        | -1.9200 | 9.0094  |
| 2016 | 0.5320 | 96.0317 | -0.9192 | 4.9000 | 39.3068        | -1.8700 | 15.6968 |
| 2017 | 0.5340 | 94.1138 | -0.8609 | 4.4000 | <i>missing</i> | -2.0000 | 16.5023 |
| 2018 | 0.5370 | 87.0393 | -0.8458 | 3.9000 | 40.4885        | -2.1000 | 12.0951 |
| 2019 | 0.5440 | 88.7002 | -0.9678 | 3.8000 | <i>missing</i> | -1.9300 | 11.3964 |
| 2020 | 0.5470 | 89.1471 | -0.9842 | 4.2000 | 44.1221        | -1.8900 | 13.2460 |
| 2021 | 0.5540 | 90.7271 | -1.0501 | 4.3000 | 45.4449        | -1.7900 | 16.9528 |
| 2022 | 0.5570 | 91.6092 | -1.0568 | 3.9000 | <i>missing</i> | -1.7800 | 18.8472 |
| 2023 | 0.5600 | 88.6153 | -0.8678 | 3.9000 | 46.8932        | -1.7700 | 24.6596 |

*Note: cells marked "missing" indicate that no observation was available in the original source database for that country-year. HDI: UNDP. OIL, HC, INF: World Bank WDI. GE, POL: World Bank WGI. HEALTH: WHO Global Health Expenditure Database.*

HDI: United Nations Development Programme. (2024). *Data center: Specific country data – Nigeria*. <https://hdr.undp.org/data-center/specific-country-data#/countries/NGA>

Oil exports as a % of total merchandise exports: World Bank. (2024a). *Fuel exports (% of merchandise exports) – Nigeria* [Data set]. World Development Indicators. <https://data.worldbank.org/indicator/TX.VAL.FUEL.ZS.UN?locations=NG>

Government Effectiveness Index: World Bank. (2024). *Worldwide Governance Indicators: Government Effectiveness Estimate – Nigeria* [Data set]. World Bank DataBank.

<https://databank.worldbank.org/source/worldwide-governance-indicators>

Government expenditure on Healthcare: World Bank. (2024). *Domestic general government health expenditure (% of general government expenditure) – Nigeria* [Data set]. World Development Indicators.

<https://data.worldbank.org/indicator/SH.XPD.GHED.GE.ZS?locations=NG>

Secondary School Enrollment: World Bank. (2024b). *School enrollment, secondary (% gross) – Nigeria* [Data set]. World Development Indicators.

<https://data.worldbank.org/indicator/SE.SEC.ENRR?locations=NG>

Political Instability: World Bank. (2024). *Worldwide Governance Indicators: Political Stability and Absence of Violence/Terrorism Estimate – Nigeria* [Data set]. World Bank DataBank. <https://databank.worldbank.org/source/worldwide-governance-indicators>

Inflation Rate: World Bank. (2024). *Inflation, consumer prices (annual %) – Nigeria* [Data set]. World Development Indicators.

<https://data.worldbank.org/indicator/FP.CPI.TOTL.ZG?locations=NG>

**Reference list:**

- Anthropic. (2025). *Claude* (Sonnet 4.5) [Large language model]. <https://claude.ai>
- Auty, R. M. (1993). *Sustaining development in mineral economies: The resource curse thesis*. Routledge.
- Beblawi, H. (1987). The rentier state in the Arab world. *Arab Studies Quarterly*, 9(4), 383–398.
- Dauda, R. O. S. (2026). Government expenditure and economic growth in Nigeria: Disaggregated empirical evidence. *Journal of Development Economics and Finance*, 15(1), 45–62.
- Eze, O. M., Nwafor, C. U., & Okafor, I. G. (2024). Interest rate dynamics and private domestic investment in Nigeria. *Journal of Monetary and Economic Integration*, 22(2), 112–130.
- Mahdavy, H. (1970). The patterns and problems of economic development in rentier states: The case of Iran. In M. A. Cook (Ed.), *Studies in the Economic History of the Middle East* (pp. 428–467). Oxford University Press.
- Mehlum, H., Moene, K., & Torvik, R. (2006). Curbed by institutions? Raw materials and economic performance. *The Economic Journal*, 116(508), 1–20.  
<https://doi.org/10.1111/j.1468-0297.2006.01046.x>
- Ogbonna, B. C., Osondu, C. K., & Nwabunike, C. U. (2013). Oil exploitation and agricultural commodity export in Nigeria: An empirical evaluation of the Dutch disease hypothesis. *Journal of Economics and Sustainable Development*, 4(16), 134–145.

Ogunleye, E. K. (2015). Institutional governance and production sharing contracts in Nigeria's oil sector. *Energy Policy*, 86, 732–742. <https://doi.org/10.1016/>

Olalekan, A. A., Adebayo, S. O., & Bello, K. I. (2024). Measuring multidimensional welfare disparities across Nigerian states. *African Development Review*, 36(3), 289–305.

Onwuemeka, J. I., Ezeji, C. E., & Okoro, C. O. (2024). Re-examining the Phillips Curve in Nigeria: Inflation and unemployment dynamics. *Nigerian Journal of Empirical Economics*, 28(1), 55–71.

Orvoty, J. J., & Jibrilla, A. (2019). An empirical evaluation of the impact of Dutch disease on the Nigerian agricultural sector (1981–2016). *International Journal of Financial Management and Economics*, 2(1), 9–19. <https://doi.org/10.33545/26179210.2019.v2.i1a.10>

Sachs, J. D., & Warner, A. M. (1995). *Natural resource abundance and economic growth* (NBER Working Paper No. 5398). National Bureau of Economic Research. <https://doi.org/10.3386/w5398>

Sala-i-Martin, X., & Subramanian, A. (2013). Addressing the natural resource curse: An illustration from Nigeria. *Journal of African Economies*, 22(4), 570–615. <https://doi.org/10.1093/jae/ejt002>

Sen, A. (1999). *Development as freedom*. Oxford University Press.