



# Impact of Foreign Aid on Economic Development and Poverty Alleviation in Sierra Leone

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## Abstract

In capital-scarce low-income economies, the lack of attractiveness to private foreign investment implies that the only readily available source of external financing for economic development must come from foreign aid which normally comes with an altruistic motive. However, despite, the long history of aid-giving to low-income countries and especially in West Africa, evidence of donor aid effectiveness and assistance is debatable, particularly with the dominance of cross-country studies in such inquiry. With no existing country study for Sierra Leone, a typical donor aid-dependent country, this research investigates the relationship between donor intervention of the World Bank and IMF in their aid disbursement, and the development outcomes of economic growth and poverty reduction in Sierra Leone. In conducting the inquiry, the study proposed three objectives. The first objective examines the relationship between aid and economic growth. The second objective investigates the relationship between aid and poverty reduction considering two variants of poverty reduction: improvement of pro-poor growth and aggregate human welfare. The final objective assesses the effect of domestic politics on aid's effectiveness in improving human welfare. Arising from a pluralistic analytical framework involving triangulation of econometric estimation approaches complemented with qualitative inquiry, the study finds that World Bank and IMF aid to Sierra Leone is significant in promoting economic growth in the country. In terms of the impact on poverty, the results show that World Bank and IMF aid to Sierra Leone has significantly improved long-run pro-poor growth in the country, but this impact could not be confirmed in the short run. With respect to other strands of poverty, the study finds that though World Bank and IMF aid may have not improved human well-being in Africa, it is

found to significantly improve human development in Sierra Leone, though the evidence could not support its reduction of infant mortality rate as a second the indicator of human well-being. Finally, for the investigation of the link between World Bank and IMF aid, politics, and human development in Sierra Leone, the study finds that though aid from these two major donors in Sierra Leone is significant in directly improving human development in the country, yet pro-democratic politics (as against autocratic regimes) can also be a good policy option for aid's impact on human development in the country.

### **Subject Areas**

Business Finance and Investment, Economic System, Political Economy

### **Keywords**

World Bank and International Monetary Fund (IMF), Poverty Reduction, Donor, Foreign Aid

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## **1. Introduction**

The urge to aid the development of low-income countries has only continued to gain momentum. Several reasons may be associated with this, but crucial amongst them is the need to uplift the living standards of its people who have remained to endure continued impoverishment. This uncharacteristic status of well-being in low-income countries largely bears its origin from slow economic growth and weak development outcomes in such economies, which means any thoughts of low-income countries catching up with developed countries can only be a slim possibility in the distant future. The cause of this slow economic progress in developing countries, and in particular Africa, has two schools of thought which tend to propose opposing views: one suggesting the cause emanates from external forces (Rodney, 1972) [1], and the other arguing it is largely internal (Ayithey, 2004) [2]. Irrespective of which argument (from these schools of thought) may be more convincing, what remains obvious is that the persistence of poverty, the apparent consequences of global inequality together with the increasing urge for globalization, imply the slow and weak development trend in developing countries becomes a concern to not only the developing country authorities but perhaps equally so to the international community. Hence, the promotion of economic development in low-income countries becomes a collective issue, for which the proposition and commitment to global development targets such as the millennium development goals are evidence.

Foreign aid is a form of foreign capital disbursed in the form of grants or concessionary loans. It can be from official bilateral or multilateral sources. The main motive is usually to foster economic development in such aid-recipient countries (Thorbecke, 2000) [3], although others like Alesina and Dollar (2000)

[4] and Temple (2010) [5], suggest that there may be other non-charitable reasons. The Organisation for Economic Co-operation and Development (OECD) whose headquarters is based in Paris, France [1] defines foreign aid as grants and loans to developing countries and territories, which are undertaken by the official sector of the donor country, with the promotion of economic development and welfare in the recipient country as a core objective and at concessional financial terms (Temple, 2010: p. 4425) [5]. Whilst grants do not have a repayment obligation from the recipient country, loans do have to be repaid, but with an interest rate below the market rate and with a grant element of at least 25% to qualify concessional loans as aid (ibid). Aid may also be given to recipient countries in the forms of technical assistance, food aid supported by WFP in Sierra Leone, programme aid, and project aid which by their nomenclature tells the direct purpose of the assistance.

This research investigates the relationship between donor intervention of the World Bank and IMF in their aid disbursement and the development outcomes of economic growth and poverty reduction in Sierra Leone. While much work has been done on the impact of foreign aid on economic growth, there have been increasing calls to look at the impact of Foreign Aid on Economic Development and Poverty Alleviation in Sierra Leone.

## 2. Objective of the Study

The aim of this study is to assess the contribution of Foreign Aid to Economic development and poverty alleviation in Sierra Leone from 2000 to 2019.

The specific objectives of this research therefore are:

- 1) To examine the impact of aid on economic growth and poverty Alleviation.
- 2) To investigate the relationship between aid and poverty reduction by considering two variants of poverty reduction: improvement of pro-poor growth and aggregate human welfare.
- 3) To investigate the effect of question cost on development outcome and poverty reduction in Sierra Leone.
- 4) To assesses the effect of domestic politics on aid's effectiveness in improving human welfare.

### 2.1. The Research Questions

- 1) Does foreign aid (World Bank and IMF) significantly foster economic growth in Sierra Leone?
- 2) Is poverty significantly reduced by donor aid (World Bank and IMF) in the case of Sierra Leone?
- 3) Is the system and quality of politics detrimental to the effectiveness of World Bank and IMF aid in promoting human development in the case of Sierra Leone?
- 4) Does aid disaggregation matter in the examination of the impact of World Bank and IMF aid in Sierra Leone?

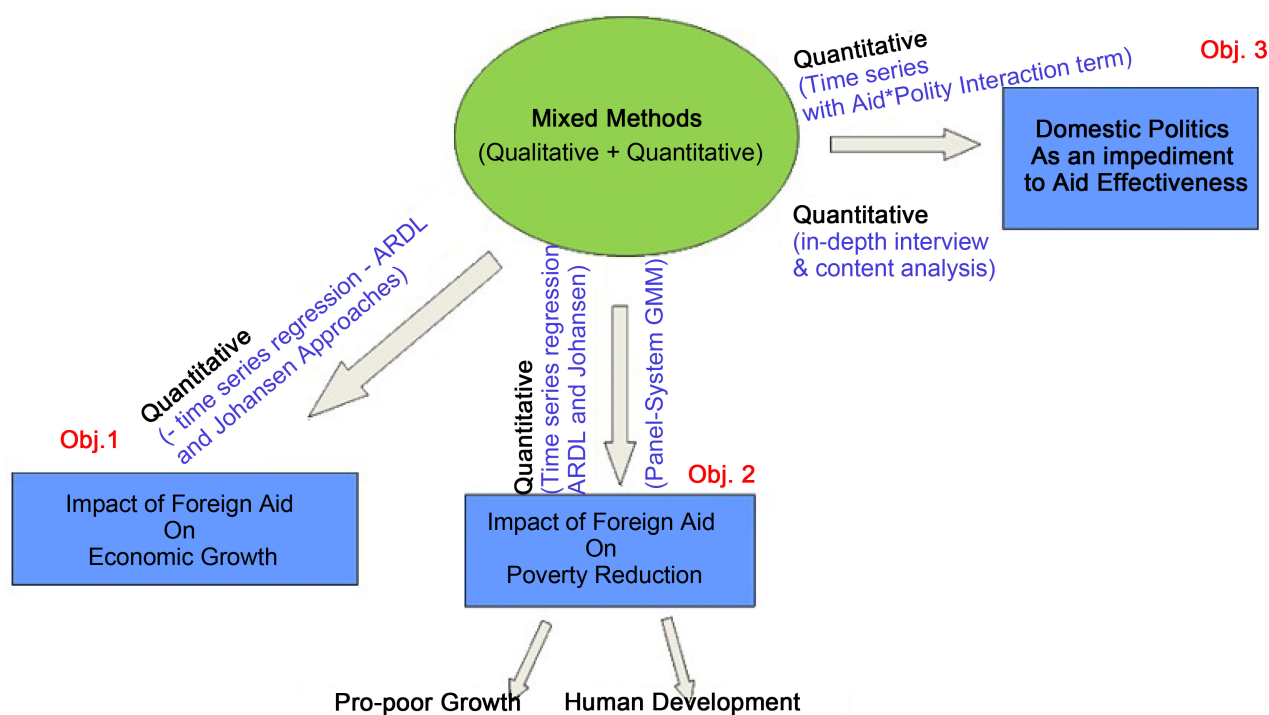
## 2.2. Statement of the Problem

Despite the enormous human and natural resources that Sierra Leone is endowed with huge mineral resources in the world about 92% of her citizens are poor. The paper, therefore, intends to evaluate the impact of foreign aid in alleviating poverty in Sierra Leone.

## 2.3. Methodology

The overall research strategy consists of a mixed methods approach, combining quantitative and qualitative data and methods to address the research questions (Figure 1). The country-level analysis is employed and is particularly relevant because there exist structural differences in each country and hence avoids universalization of aid policy applications to developing countries in general.

This study employs both within-methods and between-methods triangulation approaches in its examination of aid impact in the case of Sierra Leone. The within-methods triangulation approach had involved the use of quantitative techniques involving a combination of two-time series regression approaches so that any shortcomings in any one of these approaches are overcome by obtaining findings from both, thus making conclusions much more reliable. The problems of robustness and non-usability of results in one approach are hence nuanced or



**Figure 1.** Overall research strategy. Source: The qualitative data which generally includes experiences views and perceptions of experts and civil society representatives have been obtained from a total of eighty-five in-depth interviews. A list of the interviews conducted is shown in Table 1. These interviews were conducted during five-month long fieldwork in the country of study, Sierra Leone lasting from 18th February 2020 to 19th July 2021. Qualitative secondary data involving documentary evidence also forms part of this qualitative information and much of this was obtained during the fieldwork. These interviews and reports have been analysed in this study to complement the findings of the qualitative analysis.

validated by the results obtained from the other.

The between-method triangulation is also employed to bring in some qualitative analysis involving interviews with experts in the relevant public sector and civil society bodies to provide explanations to the “why” question of aid (in) effectiveness. Hence, the study’s use of triangulation captures the counterfactual through the quantitative techniques and further includes qualitative techniques to provide explanations for the findings obtained from the use of the quantitative techniques.

Overall, data collection methods and sources comprise information mainly from the secondary sources complemented by primary sources. More broadly, secondary sources, which were collected using a desk survey, comprised donor and institutional online statistical databases; documentary information on donor policies and reports; and reports on aid use and management from the public sector, public audit institutions, media, and civil society. The primary data on the other hand was sourced from in-depth interviews with the relevant public sector departments, public audit institutions, resident donor agencies, media elites, and civil society bodies making use of their experiences, views, and perceptions on the use, management and effectiveness of foreign aid in Sierra Leone.

#### **2.4. Study Population**

The study population for this study comprises donors, policy think tanks (a group of economic experts on the Sierra Leone economy), and the government of Sierra Leone officials, NGOs in Sierra Leone, Law Reform, and Policy Research in Sierra Leone. **Table 1** shows List of Staff Interviewed and responded from staff.

The researcher has used the non-probability sampling method in which population elements are selected because of the researcher’s personal understanding that they are representative of the population and are available for respondents. This study made use of a non-probability sampling technique in the selection of respondents because the study did not permit the kinds of probability samples employed in large-scale social surveys. Hence, purposive or judgmental sampling and the snowball sampling procedures became the sampling techniques for this study. Purposive sampling is a non-probability technique whereby the units to be observed are selected based on the researcher’s own judgment which ones will be the most useful or representative of the population (Babbie, 2012: p. 189) [6]. In other words, purposive or judgmental sampling is used when the researcher has knowledge of the characteristics to be studied, its elements, and the purpose of the study. Since the activities of the donor community in Sierra Leone and in Less Developed Countries (LDCs) are known to the researcher; therefore, the purposive sampling technique was employed. However, snowball sampling was used complementary to purposive sampling. This sampling, which is usually considered accidental sampling is used when members of the population

**Table 1.** Response rate.

No	Institution Interviewed	No Staff Interviewed (Questionnaires Sent)	No of Respondent	Questionnaires Not Responded to
1	Donor	20	19	1
2	Civil Society Organization	10	9	1
3	Public Sector	25	24	1
4	Political Parties	20	18	2
5	Media	6	5	1
6	Legal Elites	2	2	0
7	Policy Unit	2	2	0
<b>Total</b>		<b>85</b>	<b>79</b>	<b>6</b>

to be studied are difficult to locate or identify. According to Babbie (2012: p. 193) [6] snowball sampling is appropriate “when the members of a special population are difficult to locate, such as individuals, migrant workers or undocumented immigrants”. Babbie further indicated that in snowball sampling, “the researcher collects data on the few members of the target population he or she can locate then ask those individuals to provide the information needed to locate other members of that population whom they happen to know” (Babbie, 2012: p. 193) [6]. In Sierra Leone, where the activities of donors are not well coordinated, snowball sampling was most appropriate because respondents provided the researcher and the fieldworkers with contact details of respondents who otherwise could not be located.

Respondents from both multilateral and bilateral donor institutions in Sierra Leone were interviewed. A total of Twenty officials from the donor community were interviewed: Five officials from the World Bank, five from the IMF, two from the European Union, two representatives from UNDP, and three officials from the United States Agency for International Development (USAID) were also interviewed and three from the UNFPA. Ten NGOs including both local and International representing the fourteen regions in Sierra Leone were also interviewed. Twelve six persons from the public whose role really matters to the outcome of this research and represent the general population were interviewed. Representatives from the four major political parties in Sierra Leone were also interviewed as follows: Five from the Sierra Leone Peoples Party (SLPP), Five from the All-People’s Congress (APC), five from the National Grand Coalition Party (NGC), and three from the C4C party. Six from the press media and the regulatory body (SLA) were also interviewed, two from legal elites and two from the policy reform unit. The respondents are captured in **Table 1**.

The problem under investigation requires that certain respondents were selected as it might have been difficult to get information from all stakeholders of development in Sierra Leone. The choice of these eighty-five respondents were made taking into cognisance that the respondents' positions in Sierra Leone were directly or indirectly connected to donor aid, poverty alleviation, and development in Sierra Leone. In other words, these respondents constitute major stakeholders in the aid-development discussion of Sierra Leone; therefore, they are better positioned to provide all that is necessary on the topic under study.

Donor institutions such as the World Bank, the IMF, UNDP, USAID, European Union, UNFPA, and the US Embassy which were very prominent in influencing government decisions on development and poverty reduction in Sierra Leone over the period of study were also interviewed.

A total of eighty-five questionnaires were issued to respondents. Seventy-Nine of the total questioners issued responded and six did not respond as they were difficult to locate and the timing for data analysis was of the essence.

The Percentage Representation of Total Respondents = Total Responded/Total Questionnaire Issued  $\times 100 = 79/85 \times 100 = 93\%$

Percentage of Non-Respondent = Non-Respondent/Total Questionnaire Issue  $\times 100 = 6/85 \times 100 = 7\%$

According to the Snowball sample technique, the result in terms of respondents ranging from 75% - 100% is an acceptable value to be relying on for data analysis.

## 2.5. Sampling Techniques

A sample is defined as the drawing of a limited number of cases from the study population. Sampling must be done in such a manner that the selection of elements from the target population accurately portrays the total population from which the elements are selected. There are two main categories of sampling:

1) Probability sampling is a method whereby all elements in the population have the opportunity of being included in the sample and the probability that any one of them will be selected can be calculated. Probability sampling is also made up of random, stratified, systematic, and cluster sampling methods.

2) Nonprobability sampling on the other hand is the method in which population elements are selected because of the researcher's personal understanding that they are representative of the population and are available. Examples of nonprobability sampling include convenience and purposive sampling.

This study made use of a non-probability sampling technique in the selection of respondents because the study did not permit the kinds of probability samples employed in large-scale social surveys. Hence, purposive or judgmental sampling and the snowball sampling procedures became the sampling techniques for this study.

### 1) Purposive Sampling

Purposive sampling is a non-probability technique whereby the units to be observed are selected on the basis of the researcher's own judgment about which ones will be the most useful or representative of the population. In other words,

purposive or judgmental sampling is used when the researcher has knowledge of the characteristics to be studied, its elements, and the purpose of the study. Activities of the donor community in Sierra Leone and in Less Developed Countries (LDCs) are known to the researcher; therefore, the purposive sampling technique was employed. However, snowball sampling was used complementary to purposive sampling.

## **2) Respondents**

Respondents from both multilateral and bilateral donor institutions in Sierra Leone were interviewed. A total of fourteen officials from the donor community were interviewed: Five officials from the World Bank, five from the IMF, one from the European Union, two representatives from UNDP, and three officials from the United States Agency for International Development (USAID) were also interviewed and three from the UNFPA. Ten NGOs including both local and International representing the fourteen regions in Sierra Leone were also interviewed. Twelve persons from the public whose role really matters to the outcome of this research and represent the general population were interviewed. Representatives from the four major political parties in Sierra Leone were also interviewed as follows: Five from the Sierra Leone Peoples Party (SLPP), five from the All-People's Congress (APC), five from the National Grand Coalition Party (NGC), and three from the C4C party. Five from the press media and the regulatory body (SLA) were also interviewed, two from legal elites and one from the policy reform unit. The problem under investigation requires that certain respondents were selected as it might have been difficult to get information from all stakeholders of development in Sierra Leone. The choice of these eighty-five respondents were made taking into cognizance that the respondents' positions in Sierra Leone were directly or indirectly connected to donor aid, poverty alleviation, and development in Sierra Leone. In other words, these respondents constitute major stakeholders in the aid-development discussion of Sierra Leone; therefore, they are better positioned to provide all that is necessary on the topic under study.

Donor institutions such as the World Bank, the IMF, UNDP, USAID, European Union, UNFPA, and the US Embassy which were very prominent in influencing government decisions on development and poverty reduction in Sierra Leone over the period of study were also interviewed.

## **2.6. Data Collection Techniques**

Data for this research were collected over a period of nineteen years, from 2000 to 2019 by four trained field workers using questioner. Purposive or judgmental sampling and the snowball sampling procedures became the sampling techniques for this study

## **2.7. Primary Data Collection**

Primary data were collected through qualitative interviews. The researcher made use of an interview guide consisting of open- and close-ended questions. A qua-



litative interview involves an interaction between an “interviewer and a respondent in which the interviewer has a general plan of Inquiry, including the topics to be covered, but not a set of questions that must be asked with particular words and in a particular order” (Babbie, 2012: p. 129) [6]. Two sets of interview guides were developed; one of the interview guides was designed for donors and civil society organizations while the second interview guide was designed for respondents in the public sector, Policy Think Thanks, political parties, and graduate students in Sierra Leone. The interview guides were mainly open-ended and interactive.

In an attempt to secure responses from individuals who are well versed in the topic under study and the fact that foreign aid activities are not well coordinated, the snowball sampling method was adopted to select key people and institutions for interviews. Data collection focused on the various regimes over the period of study, the philosophy that informed these regimes, their approach towards donor aid and whether aid in anyway influenced economic growth and development, and poverty alleviation in the country.

## **2.8. Secondary Data Collection**

The study also relied on secondary sources or content analysis as complementary to primary data sources. Content analysis involves the use of existing materials by researchers and the analyses of data originally collected by others. In other words, content analysis is “the study of recorded human communication such as books, websites, paintings, and laws”. It is an unobtrusive method of data collection because it involves different nonreactive research techniques (techniques that have no impact on the people being studied). Content analysis is also perceived by Bahmani-Oskooee and Rubin (1997: p. 421) [7] as a “way of transforming qualitative material into quantitative data” implying that every form of communication, whether recorded or not, can be transformed into quantitative data by coding and tabulating the communication. The study of secondary sources was necessary to present the theories on aid and economic development; to give an overview of political and economic development in Sierra Leone from 2000-2019, and to investigate donor aid flow. Since it is impossible to observe and analyse every communication on the role of foreign aid in economic development and poverty alleviation in Sierra Leone, the cluster sampling technique was adopted in this research. Cluster sampling is used in social research when it is either impossible or impractical to compile an exhaustive list of the elements composing the target population. Indeed, in this study, since it is impossible to compile and study, all communications and publications on donor aid, economic development, and poverty alleviation in Sierra Leone, the unit of analysis became official documents on aid and development of the Government of Sierra Leone, literature on aid from bilateral and multilateral institutions, textbooks, articles and reports on foreign aid, development on Sierra Leone. Web documents relating to the research topic also serve as an integral component of data

for this study. **Table 2** gives a summary of the type of secondary data sources that were collected to address the research objective.

### 3. Data Analysis

Data analysis for this study relied mainly on both qualitative and Quantitative techniques and was carried out on an “on-going” and “terminal” basis. The on-going data analyses were made jointly with the respondents in the field in order to eliminate personal biases in interpretation and also ensure that data is accurately captured in the field. The terminal data analysis was done after the completion of data gathering from both primary and secondary sources. The data gathered were triangulated and analysed in relation to the set objectives, and thematic categories of the research. Thematic coding techniques were used to summarize and analyse themes in relation to the study. A suitable data analysis method was adopted for this study. Data were processed using “coding” for “discovering patterns” before analysed using the software package for social science research (SPSS version 16.0).

**Table 2.** Summary of the type of secondary data sources.

Objectives	Source of Data
Political development in Sierra Leone (2000-2019)	Books, Government of Sierra Leone publications, literature, textbooks, articles, and reports on political development in Sierra Leone.
Economic development in Sierra Leone	Literature, textbooks, articles, and reports on economic development in Sierra Leone.
Poverty reduction strategies (2000-2019)	Literature, textbooks, articles, and reports on poverty and Sierra Leone.
Influence of aid: - Economic development - Poverty reduction - Institutional development	Official documents on aid and development of the Government of Sierra Leone, literature on aid from bilateral and multilateral institutions, literature, textbooks, articles, and reports on foreign aid, development, and Sierra Leone. Web documents relating to the research topic also serve as an integral component of data for this study.
Drivers of economic change: - Human capital - Natural resources - Institutions	Literature, textbooks, articles, and reports on development in Sierra Leone.

### 3.1. Model

#### 3.1.1. The Aid-Growth Base Model

Following the review of the economic growth theories typical of the Harrod-Domar, neoclassical, and endogenous growth theories, it is apparent that all postulate capital to be an important determinant of economic growth. Therefore, in deriving our empirical model for estimating the aid-growth relationship for Sierra Leone, we posit that:

$$Y = f(X, Z) \quad (1.1)$$

$Y$  denotes output (*i.e.* Real GDP),  $X$  is a vector of capital sources, and  $Z$  is a vector of other growth determining variables that are crucial for technological productivity. The endogenous growth model in particular generally emphasizes the importance of capital (both physical and human) and policy for promoting economic growth. On this basis, the above theoretical model motivates the general empirical growth model for the time-series growth regression which is specified as follows:

$$\text{RGDP}_t = \alpha + \beta X_t + \gamma Z_t + \mu_t \quad (1.2)$$

where Real Gross Domestic Product (RGDP) is a proxy for economic output, and  $X$  and  $Z$  are as previously defined.  $\mu_t$  is the error term, while subscript  $t$ , denotes time. Critical capital sources for the economic growth of developing countries comprise foreign aid and private investment. These capital sources are physical capital sources as data for human capital for the country under study is virtually unavailable. Hence,

$$X = f(\text{Aid}, \text{PI}) \quad (1.3)$$

where “Aid” denotes foreign aid, and ‘PI; denotes private investment. This assumes that PI which constitutes private domestic capital sources (such as domestic credit to the private sector) and foreign direct investment is a critical source of capital in addition to foreign aid that can augment economic growth. Herzer and Morrissey (2011) [8], in their cross-country study of foreign aid effectiveness, presented capital as the single most important factor that influences domestic output. Of this capita stock, they specified foreign aid and private investment in addition to domestic taxes in the production function as the critical components of capital that determine domestic output.

Other growth determinants, as mentioned before:

$$Z = f(\text{Policy}, \text{IQ1}) \quad (1.4)$$

where “Policy” denotes macroeconomic policy index, accounting for fiscal, monetary, and trade policies. Fiscal policy is proxied by government final consumption expenditure whereas monetary policy is proxied by inflation (Fischer, 1993) [9]. Trade policy is proxied by the trade openness measure, which is (imports + exports)/GDP (Feeny, 2005) [10]. These policy measures have been widely argued to influence the growth of the economy.

The variable, IQ1 denotes the property rights score, whose component va-

riables follow Knack and Keefer's (1995) [11] component variables in their construction of an index of property rights/institutional quality. The literature on property rights seems to be in agreement that secure property rights positively contribute to economic growth through the promotion of investment (Knack & Keefer, 1995 [11]; Przeworski & Limongi, 1993 [12]). As economic theory and empirical evidence generally find investment to be a critical determinant of economic growth, the protection of property rights which itself provides insurance for investment will ultimately contribute to economic growth.

Thus, substituting (1.3) and (1.4) in (1.2), gives our detailed empirical growth model as:

$$RGDP_t = \alpha + \beta(Aid, PI)_t + \gamma(Policy, IQ1)_t + \mu_t \quad (1.5)$$

Simplifying, this gives us the empirical model for estimation as:

$$RGDP_t = \beta_0 + \beta_a Aid_t + \beta_i PI_t + \beta_p Policy_t + \beta_{iq} IQ1_t + \mu_t \quad (1.6)$$

To capture economic growth using RGDP, we used the log of RGDP (Adhikary, 2011) [13], as the log difference of RGDP implies economic growth. Correspondingly, all the regressors are expressed in logarithms with the exception of the policy index which has some negative observations. Thus, the model as used in the empirical analysis is specified as:

$$LRGDP_t = \beta_0 + \beta_a LAID_t + \beta_i LPI_t + \beta_p POLICY_t + \beta_{iq} LIQ1_t + \mu_t \quad (1.7)$$

A positive and statistically significant coefficient of the aid variable is interpreted as aid having an impact on promoting economic growth in the country.

### 3.1.2. Addition of the Political Crisis Variable

In the first re-specification, we add the influence of the political crises (CRISIS) to the base model to see whether the effect of aid on growth significantly changes. This model is specified as:

$$LRGDP_t = \beta_0 + \beta_a LAid_t + \beta_i LPI_t + \beta_p Policy_t + \beta_{iq} LIQ1_t + \beta_c CRISIS_t + \mu_t \quad (1.8)$$

CRISIS is a variable of political instability. The literature on political instability and economic growth recognises that political instability lowers the availability of factors of production and consequently lowers economic growth (Alesina & Perotti, 1996) [14]. In the study country, Sierra Leone, there has been a lot of political interference in most developmental initiatives from various political parties, especially from the side of the ruling party which makes relevant the inclusion of political crisis variable in the aid-growth model.

### 3.1.3. The Use of Different Measures of Political and Institutional Quality

Here, the study attempts to test the robustness of the impact of aid on economic growth by altering the measures of political and institutional quality in the base model. This implies the property rights measure is replaced in the model by the quality of governance and quality of domestic politics at a time. The measures of political and institutional quality as used in the literature have been subject to some scepticism. Criticisms have ranged from the fact that they are quite persis-

tent over time as the quality of the institution and polity change very minimally over time (Burnside & Dollar, 1997) [15] to problems of data availability especially in the earlier periods in the series for which unavailable data is only represented by the earliest available observation as is done in Burnside and Dollar (2000) [16], a technique we also use for IQ1 and IQU in this study. Thus, the study uses three of these measures: property rights (IQ1) as used in the base model, governance (IQU), and polity quality (POLIT).

### 3.1.4. With the Use of Governance Measure (IQU)

When we use the quality of governance measure, the specification becomes:

$$\text{LRGDP}_t = \beta_0 + \beta_a \text{LAid}_t + \beta_i \text{LPI}_t + \beta_p \text{Policy}_t + \beta_{iq} \text{LIQU}_t + \mu_t \quad (1.9)$$

where IQU is a governance quality variable that is recognised in the literature (Mauro, 1995) [17] as an important determinant of economic growth.

### 3.1.5. Addition of Political Regime Variable

With the addition of the political regime indicator, the extended model is specified as:

$$\text{LRGDP}_t = \beta_0 + \beta_a \text{LAid}_t + \beta_i \text{LPI}_t + \beta_p \text{Policy}_t + \beta_{po} \text{Polit}_t + \beta_c \text{CRISIS}_t + \mu_t \quad (1.10)$$

where “Polit” is the variable representing the quality of the system of political regime. Though the literature on the systems of the political regime (democratic versus authoritarian regime) may be controversial with regards to their relative importance for economic growth, it seems however unanimous in generally finding politics to be an important determinant of economic growth. Przeworski and Limongi (1993) [12] in their critical review of the literature on political regimes and economic growth indicate their opinion that politics generally matters for economic growth, though however remain indifferent to the debate of democracy versus autocracy in promoting economic growth since the findings on the latter are inconclusive.

## 4. The Estimation Procedure

The time series analysis of the impact of foreign aid on economic growth in Sierra Leone follows the technique of cointegration, which is employed to estimate the long-run impact of aid on economic growth; accompanied by an Error Correction Model representation which provides estimates for the short-run and the adjustment term once cointegration is found to exist. The time series period covers from 2000 to 2019 which is a relatively long series with the advantage of obtaining adequate degrees of freedom as well as having the capacity to incorporate more growth determinants into the model and hence yielding less unbiased estimates that could have been made biased as a result of omitted variables. We introduce a triangulation approach involving a combination of different techniques of cointegration to establish the impact of foreign aid on economic growth.

As most macroeconomic variables are found to be non-stationary or inte-

grated of order 1 over time, the econometric practice had previously involved the differencing of any non-stationary variables before doing the necessary estimations. The cost of such practice involved the loss of long-run information on the variables. Therefore, to deal with the problem of non-stationarity, later studies have increasingly used the standard technique of cointegration and Error Correction Mechanism (ECM) to estimate time-series relationships. Generally, cointegration establishes the existence of a long-run relationship among the variables. As our study involves the use of economic variables which are largely seen to be non-stationary, in order to obtain long-run information, there is the need to establish the existence of a cointegrating relationship between economic growth and its determinants including foreign aid which is our variable of interest.

There are three main methods of cointegration that are commonly used in the econometrics literature. The Engel-Granger two-step procedure, the Johansen Likelihood approach, and the more recent Autoregressive Distributed Lag (ARDL) bounds test approach to cointegration modified by Pesaran and Shin (1999) [18]. The Engel and Granger's (1987) [19] approach which involves a two-step procedure is limited to a bivariate model and hence cannot be applicable in this study for which the empirical models constitute more than two variables. Thus, the study employs the other two approaches (the Autoregressive Distributed Lag (ARDL) bounds test approach and the Johansen Maximum Likelihood technique to cointegration) to estimate the aid-growth relationship, with both approaches being applicable in a multivariate regression situation. Though this study uses and triangulates findings from both approaches, it considers the ARDL approach as the main technique of estimation, which implies should there be any contradicting results between these two techniques, priority is given to those estimates from the ARDL approach. Prioritization of this approach is based on the unique power of its estimates being found to be more efficient and reliable in small samples than those from counterpart estimators such as the Johansen technique (Inder, 1993) [20].

The choice of the ARDL methodology to approach this study's investigation is premised on several considerations. First, as opposed to the Johansen Likelihood approach to cointegration analysis, the ARDL approach avoids the problem of the order of integration. The cointegration approach by Johansen (1991) [21] and Johansen and Juselius (1990) [22] requires that variables be of the same order of integration (*i.e.*  $I(1)$ ). Hence, the ARDL approach is found to have the flexibility advantage in that it can be applied irrespective of whether the variables are of a different order of integration (Pesaran & Pesaran, 1997) [23]. Secondly, Inder (1993) [20] showed that estimates from ARDL approaches are more reliable than their counterparts even if the dynamic structure is over-specified; and, that sizes of the t-tests from an estimator that uses an ARDL approach are much more reliable. Thirdly, Banerjee *et al.* (1993) [24] show that the ARDL approach to cointegration is especially attractive when carrying out cointegration in small

samples and that it is yet more efficient than other VAR methods. This is also confirmed by Pesaran and Shin (1999) [18] who show that the ARDL model outperforms alternative approaches like Phillip and Hansen's Fully Modified OLS when the sample size is small. Finally, Pesaran and Shin (1999) [18] show that an appropriate modification of the orders of the ARDL model is adequate to simultaneously correct for residual serial correlation and the problem of endogenous regressors, thus giving the ARDL an advantage over other approaches to cointegration. This is also justified by Harris and Sollis (2003) [25], and Constant and Yue (2010) [26]. The inclusion of dynamics is shown by Inder (1993) [20] to help correct for endogeneity bias. As foreign aid has been largely argued to be endogenous (Boone, 1996) [27], this makes the use of this methodology all but appropriate for the estimation of the aid-growth relationship. The modified approach by Pesaran and Shin (1999) [18] uses the error correction version of the ARDL model and takes the following form:

$$Ly_t = \alpha_0 + \alpha_1 t + \sum_{i=1}^m \varphi_i Ly_{t-i} + \sum_{i=0}^m \pi_i' Lx_{t-i} + d_1 y_{t-1} + d_2 x_{t-1} + \eta_t \quad (1.11)$$

where  $d_1$  and  $d_2$  are parameters of the long-run relationship variables.

$\varphi$  and  $\pi$  are matrices of parameters.

$y_t$  is a vector of endogenous variables, and  $x_t$  is a vector of explanatory variables.

$\alpha$  is a vector of constants and  $t$  is a deterministic trend  $m = \max(q, s+1)$ .

Embedding (1.7) into the error correction form of the ARDL model, the conditional Vector Error Correction Model (VECM).

becomes:

$$\begin{aligned} \text{LLRGDP}_t = & \beta_0 + \delta_1 \text{LRGDP}_{t-1} + \delta_2 \text{LAID}_{t-1} + \delta_3 \text{LPI}_{t-1} + \delta_4 \text{LIQI}_{t-1} \\ & + \delta_5 \text{Policy}_{t-1} + \sum \varphi_i \text{LLRGDP}_{t-i} \end{aligned}$$

where  $\delta_i$  are the long-run multipliers,  $\beta_0$  is the drift and  $\varepsilon_t$  are white noise errors.  $p$  and  $q$  are the appropriate ARDL model orders. This becomes the base equation.

The ARDL approach uses the F-test to establish the existence of a cointegrating relationship. The test however has a non-standard distribution, which implies the critical values differ from those in the standard distribution. Pesaran and Pesaran (1997) [23] generate separate critical values that tabulate two sets of values. The first value (upper critical bound) of the F-test assumes that all the variables are I(1) and the second (the lower critical bound) that they are I(0). If the calculated F-statistic appears above the upper value of this band, the null hypothesis is rejected suggesting the existence of cointegration between the variables irrespective of whether they are I(1) or I(0). If the F-statistic falls below the lower critical bound, the null hypothesis of no cointegration cannot be rejected, while a value within the bounds (*i.e.* within the lower critical bound and the upper critical bound) implies an inconclusive test. In this study, critical values are used for all three sets of level of significance *i.e.* at the 1%, 5% and 10%

levels of significance. However, the critical values used by Pesaran and Pesaran (1997) [23] are generated for samples from 500 observations. As this paper uses a sample of 71, we therefore use the critical values generated by Narayan (2004) [28] which are available for samples of 30 observations to 90 observations.

Considering the aid-growth base model, the hypothesis is specified as follows:

$$H_o : \delta_1 = \delta_2 = \delta_3 = \delta_4 = \delta_5 = 0$$

Against

$$H_A : \delta_1 \neq \delta_2 \neq \delta_3 \neq \delta_4 \neq \delta_5 \neq 0$$

Once cointegration is established, in the second step, the conditional ARDL (p, q1, q2, q3, q4) long-run model for LRGDPt can be estimated. This involves selecting the optimal orders of ARDL model in the variables (*i.e.* p, q1, q2, q3, q4) which is done using either Akaike information criteria (AIC) or the Schwartz/Bayesian Information criteria (SIC or SBC). The model selection criteria according to Shrestha and Chowdhury (2005) [29] are a function of the residual sums of squares and are equivalent asymptotically. In this study, the SIC is used to select the orders of the ARDL specifications, which in the context of this study, has a comparative advantage over the AIC. In a comparison of the AIC and SIC in Monte Carlo experiments, Pesaran and Shin (1999) [18] showed that though the ARDL-AIC and ARDL-SIC have quite similar small-sample properties, the ARDL-SIC performs slightly better in the majority of the experiments. This they suggest may be due to the fact that the Schwartz criterion is a consistent model-selection criterion whereas the Akaike is not. Hence, the SIC can be described as being more parsimonious with the lag length selection and is a consistent model selection criterion (Pesaran & Shin, 1999) [18].

In the third and final step, we obtain the short-run dynamic parameters by estimating an error correction model associated with the long-run estimates. This is specified as:

$$\begin{aligned} \text{LLRGDP}_t = & \mu + \sum_{i=1}^q \varphi_i \text{LLRGDP}_{t-i} + \sum_{j=1}^q \omega_j \text{LLAID}_{t-j} + \sum_{l=1}^q \Omega_l \text{LLPI}_{t-l} \\ & + \sum_{m=1}^q \gamma_m \text{LLIQ1}_{t-m} \end{aligned}$$

where  $\varphi$ ,  $\omega$ ,  $\Omega$ ,  $\gamma$  and  $\eta$  are the short-run dynamic coefficients of the model's convergence to equilibrium, and  $\zeta$  is the speed of adjustment.

The adjustment term, which indicates the speed of adjustment to disequilibrium, is also estimated at this stage.

To ascertain the goodness of fit and/or model adequacy, diagnostic and stability tests are further conducted in the ARDL approach. The diagnostic tests which are automatically derived by the Microfit software upon estimation of the ARDL model, examine serial correlation (or autocorrelation), functional form of the model, normality of the residuals, and heteroscedasticity associated with the models. This is so because the ARDL is OLS and so the need to satisfy the clas-



sical assumptions of least squares is obvious if the model is to be considered adequate and the estimates considered reliable for inference. The stability test of the regression parameters is conducted using the technique of stability testing by Brown *et al.* (1975) [30], namely the cumulative sum of recursive residuals (CUSUM) and the cumulative sum of squares of the recursive residuals (CUSUMSQ). It tests for structural stability of the parameters within the 5% critical bounds.

The second methodology used in our enquiry is the Johansen ML approach to cointegration. In 1988, Johansen developed a technique of cointegration suited to the case of multivariate models and with the possibility of simultaneity in the variable relationships. The approach has several advantages that warrant its use in this study to estimate the aid-growth relationship. First, variables of the study's base model for examining the impact of foreign aid on economic growth are all  $I(1)$  which is a requirement for the application of the Johansen ML approach to obtain the long-run estimates of the aid-growth relationship. De Beof (2000) and Villavicencio and Bara (2008) [31] for instance, argue that using the Johansen approach in a model with a mixture of  $I(1)$  and  $I(0)$  variables produces biased results. Secondly, the Johansen approach accounts for the possibility of endogenous regressors in the model for which foreign aid has been argued (Feeny, 2005 [10]; Boone, 1996 [27]) to be endogenous. Third, using the Johansen procedure allows for comparison with some portion of the existent country aid-growth literature for which this technique has also been used (e.g. Lloyd *et al.*, 2001) [32].

Finally, our use of the Johansen Approach arises from the need to complement the findings of the ARDL approach with the aim of triangulating the findings and strengthening reliability of results.

## **5. Discussions and Conclusion on the Impact of Foreign Aid (World Bank and IMF) on Economic Development and Poverty Alleviation**

The aforementioned analysis of the aid-growth relationship in Sierra Leone has shown that using a triangulation of approaches and specifications, foreign aid is found to significantly promote economic growth in Sierra Leone within the period 2000-2019. Both the estimates of the ARDL bounds test and the Johansen approaches to cointegration are in agreement that foreign aid is a positive and significant determinant of economic growth in the country. Changes to the aid-growth specification in both approaches also confirm that foreign aid significantly fosters economic growth in Sierra Leone. The agreement of this finding across approaches and specifications only provides support for the reliability and validity of the findings and conclusions reached on the impact of foreign aid on economic growth.

The study's finding that foreign aid has a positive and significant impact on growth is consistent with the greater portion of the aid-growth literature. The

finding is supportive of the supplemental aid-growth argument which postulates that aid contributes to economic growth in recipient countries. As evident in the Chenery and Strout (1966) [33] framework, foreign aid flows into a country are expected to positively contribute to the economic growth of that country. Chenery and Strout (1966) [33] see foreign aid to fill the savings and trade/foreign exchange gap typical in less developed countries like Sierra Leone, and in effect should contribute to fostering economic growth in such countries. This finding, therefore, does not provide support for the displacement theorists (like Griffin, 1970 [34]; Bauer, 1971 [35]) who rather argue that foreign aid negates economic growth.

Moving away from the theoretical literature, the empirical literature has been inconclusive on the impact of aid on economic growth. However, this finding, through the ARDL and Johansen estimation methods, is supportive of the portion of the empirical literature that shows that foreign aid has a significant and positive effect on economic growth. Emerging from a time series analysis, this result supports the empirical findings of Gounder (1994) [36]; Mavrotas (2002); and Bhattarai (2009) [37] who also used time series analysis in different country studies to show that foreign aid has a significant and positive impact in determining economic growth. The study by Lloyd *et al.* (2001) [32] for instance used the ARDL approach to cointegration (the main approach also employed in this study) to investigate the impact of aid on economic growth at the country level for Ghana. Consistence with their finding that aid positively impacts on economic growth, the findings of this study just further confirm their conclusions but with more estimation approaches and specifications to provide robustness check, and in another case study in a country (Sierra Leone) where government expenditures are vastly aid-dependent. The study by Gounder (2001) [38] also used the ARDL model by Pesaran and Shin (1999) [18] for the period 2000-2019 to show that foreign aid to Fiji has a significant impact on promoting economic growth in the country. Bhattarai (2009) [37] and Murthey *et al.* (1994) [39] both used the Johansen ML approach and found aid to significantly contribute to economic growth in the country.

Commentators may hence be interested to know why foreign aid could be effective in directly contributing to growth in Sierra Leone, as against the findings from some other case studies. Whilst it may remain an area for further investigation, some explanation may be suggested. First, whilst methodological differences cannot entirely be ruled out for deferring aid effectiveness results.

One possibility may be the differing purposes of foreign aid to recipient countries. Aid to Sierra Leone may be less politically oriented compared to aid to Pakistan. Whilst the promotion of democracy may be a crucial reason for donors granting aid to Sierra Leone, poverty reduction and indeed economic growth (a conduit to poverty reduction) may be a more crucial reason for granting aid to the country (as fieldwork interviews with the country's leading aid donors revealed). In fact, Sierra Leone received significant proportions of aid even in

non-democratic periods. As the introductory section of this paper reveals Sierra Leone is one of the poorest in the world, the granting of aid to such a country may hence be more growth and poverty oriented than otherwise. This is further reflected in the donor disbursement of more grants than loans to the country. With Sierra Leone being a largely poor and hence capital-starved economy, it is expected that foreign aid disbursed to such a country will supplement savings and consequently boost economic growth.

Further, as Sierra Leone is a non-industrialized country, intermediate inputs required for production in the scarcely available domestic factories and industries have to be imported from overseas. Similarly, as a largely mineral-producing country, nearly all of equipments required for mining have to be imported. With the earnings from exports very much likely to be lower than the import requirement of the country (particularly so since exported products from the country are virtually all in their primary form), a foreign exchange gap becomes inevitable. What this implies is that the large inflows of foreign assistance from donors fill this foreign exchange gap and hence ultimately promote economic growth.

In conclusion, in terms of the economic growth criterion, the study provides evidence to show that foreign aid to Sierra Leone is positively associated with economic growth. Hence, if poverty remains evident in the country amidst aid inflows, it is not that foreign aid has not been effective in promoting economic growth. It may be that either growth may not have been pro-poor or that aid has not directly reduced poverty in the country. Thus, if the purpose of donor aid to Sierra Leone is to promote economic growth, then the study's finding that aid fosters economic growth is a motivation for donors to continue to give aid to Sierra Leone as it yields the desired results. However, it should also be noted that even though growth has been found to respond to aid disbursement, the economic significance in terms of the magnitude of the response has not been that high. The elasticity of 0.4 (as the ARDL aid estimate shows) or even 0.2 (as the Johansen aid estimate shows) would only imply that the response is relatively weak despite being statistically significant. Hence, for enhanced growth efforts in the country, other factors such as private investment and the quality of institutions, which have also been found to induce growth response, should be strengthened to complement aid efforts.

## **6. Conclusion**

This study provides the indication that foreign aid to Sierra Leone is positively associated with economic growth. However, if poverty remains evident in the country amidst aid inflows, it is not that foreign aid has not been effective in promoting economic growth. It may be that either growth may not have been pro-poor or that aid has not directly reduced poverty in the country. The research deficiencies are articulated in Section 6.1 and these limitations form the bedrock of our recommendations to future researchers in Section 6.2.

## 6.1. Deficiencies of the Research

This research does not include an extended analysis of countries with similar economic structures particularly in Sub-Saharan Africa in order to generalise the findings and policy application across the sub-region.

Data analysis does not include other indicators of poverty, especially income poverty indicators, once sufficient data is available for this indicator. This will provide more robust findings and hence stronger conclusions on the impact of aid on poverty reduction.

The scope of this research did not attempt to capture the long-run impact of aid on welfare.

The impact of patrimonial politics on the effectiveness of foreign aid was not included in this research although patrimonial politics is a form of political practice common in most African countries including Sierra Leone.

## 6.2. Recommendations for Future Research

Further research could be conducted to strengthen the findings and conclusions reached on the effectiveness of foreign aid as examined by this research. Future research may look at extending the analysis to further country studies of similar economic structures particularly in Sub-Saharan Africa in order to generalise the findings and policy application across the sub-region. Also, whilst the research's use of country dummy interactions with the variables of interest in a panel dataset could not be an inappropriate technique of analysis, the use of time-series analysis once sufficient data is available on annual basis is ideally preferable and hence recommended for future research. Future research could also look at opportunities for further extending the analysis to include other indicators of poverty especially income poverty indicators once sufficient data is available for this indicator. This will provide more robust findings and hence stronger conclusions on the impact of aid on poverty reduction. Further, as the scope of this research did not attempt to capture the long-run impact of aid on welfare, it is recommended that future research attempts to adopt the analysis employed by Rajan and Subramanian (2008) [40] by using five and/or ten-year lagged values of foreign aid to capture the long-run impact of aid. Finally, as patrimonial politics is a form of political practice common in most African countries including Sierra Leone, it would be worth it for future research to look into the impact of patrimonial politics on the effectiveness of foreign aid even at an explorative level.

## Conflicts of Interest

The authors declare no conflicts of interest.

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