

Investigating the Causality between Corruption and Economic Growth: A Systematic Review

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Abstract: This study aims to establish a systematic examination of the existing literature pertaining to the causal relationship between corruption and its impact on a nation economic growth. In line with established methodological guidelines, particularly the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA), this research adopts a structured approach to comprehensively survey the relevant scholarly landscape. To construct a robust foundation for this investigation, a thorough search for scientific papers within the Scopus and Web of Science (WoS) databases, spanning the years from 2012 to 2022 was conducted. Our selection process ultimately led to the identification and analysis of seven publications that offer substantial empirical insights into the chosen domain of inquiry. Through a careful review of these research papers, a compelling pattern that corruption exerts a profound significant influence on various dimensions of economic growth within a nation emerged. Specifically, the synthesis of the extant literature suggests that corruption exhibits a discernible causative effect on critical economic parameters, notably including but not limited to purchasing power, country debt, political stability and foreign direct investment (FDI). In summary, the amalgamation of these scrutinized research findings underscores the substantial and multifaceted role of corruption as a causal factor in influencing economic growth dynamics. This investigation not only contributes to a deeper understanding of this critical relationship but also underscores the importance of anti-corruption measures in promoting sustained economic development and stability on a national scale.

Keywords: *Corruption, economic growth, Systematic Reviews, PRISMA*

1. Introduction

Corruption, often universally stigmatized, is widely acknowledged to exert a substantial and generally negative influence on a state's economic growth and stability. It is commonly defined as the 'abuse of public power for personal gain.' Within the realm of previous research, a notable divergence emerges, with two prominent theories encapsulating the complex relationship between corruption and economic growth. Corruption appears to be inexorably intertwined with economic growth, either acting as a disruptive force, akin to 'sanding the wheels,' or as a facilitator, akin to 'greasing the wheels' (Erum & Hussain, 2019). The extensive body of research in this domain includes studies by Nur-tegin and Jakee (2020) and Afonso and de Sá Fortes Leitão Rodrigues (2022), which diligently examine the direct impact of corruption on economic growth, providing compelling evidence in support of the 'sanding the wheels' theory. These studies consistently substantiate the hypothesis that corruption, by its nature, hampers economic growth. Conversely, other research, such as that conducted by Akkoç and Durusu-Ciftci (2021), lends credence to the 'greasing the wheels' hypothesis, asserting that corruption can, under certain circumstances, spur economic growth.

Issues, Research Problems and Research Question: For an extended period, researchers have diligently delved into the intricate relationship between corruption and economic growth, culminating in a rich body of both theoretical and empirical studies. The theoretical underpinnings of this discourse have spurred empirical investigations, aiming to elucidate the multifaceted interplay between economic growth and corrupt practices. Indeed, corruption can wield its influence through various channels, yielding diverse economic consequences. One such channel involves the harmful impact of corruption on government revenues, a phenomenon well-documented in studies such as that by Swaleheen et al. (2019). This reduction in revenue, in turn, leads to diminished allocations for critical sectors like health and education. Additionally, corruption has been linked to peculiar effects, such as bolstering financial stability, as suggested by Ben Ali et al. (2020), and exacerbating inflationary pressures, as noted in the research of Uroos et al. (2022). Beyond the realm of economic scholarship, religious and ethical considerations have also influenced the discourse

surrounding corruption and economic growth. This moral stance, as posited by Mimoun et al. (2016), carries the implicit promise of engendering superior economic performance. It is also notable that some global indices, such as the Corruption Perceptions Index (CPI), indicate that a substantial number of nations with higher corruption levels are predominantly Muslim-majority countries, as highlighted by Yunan (2020).

In light of these realities, the need for a tailored and context-specific approach becomes evident—an approach that addresses the unique challenges faced by nations, especially concerning their economic growth trajectories, as emphasized by Kurniawan et al. (2020). The primary research questions that served as the foundation for this article's construction of a relevant systematic review therefore are as follows:

- a. What is the causality between corruption and economic growth?
- b. What are the different types of methodology used in the study?

The outcomes of this section will assist in determining the discrepancies for future studies related to the impact that corruption has on the development of the economy.

2. Literature Review

Corruption is a complicated social, political, and economic problem that exists in variable degrees in all nations. There is no universal agreement on what constitutes corruption. According to the theory, corruption in the public sector is a misuse of authority. The category of corruption that will be discussed focuses primarily on state corruption, defined as the theft and misappropriation of vast sums of state funds by multiple state officials, particularly political elites and government officials (Fajar & Azhar, 2018). Corruption is the use of positions in the public sector for personal gain. As an illustrative example, beginning with bribery, embezzlement, collusion, and nepotism (Bardhan, 1997). The exchange of goods or services by bureaucrats in exchange for something inappropriate or unreasonable is another definition of corruption (Sandholtz & Koetzle, 2000). Because the corruption index suggests that a greater value implies bad outcomes and a lower value of 20 indicates good results, they discovered that all factors had a positive relationship with corruption. To eliminate corruption, a government should place a greater emphasis on guaranteeing quicker, more sustainable economic growth rather than immediately limiting corruption. Such an approach is seen to be more successful because changes and regulations targeted at economic growth would not face the same level of opposition as implementing a flexible tax rate or increasing penalties for corruption (Moiseev et al., 2020).

Rent Seeking and Corruption: Corruption and rent-seeking are common in most countries. Nevertheless, there are differences in how they are applied and how they affect a nation's prosperity, economic efficiency, and economic growth. Corruption and lobbying are usually separated as types of rent seeking in rent seeking theory. If money or valuable property is handed to politicians or public servants, this should be considered a clear example of corruption. However, most analysts would not consider the decision-makers impacted as corrupt if rent-seeking is performed by launching political campaigns, hiring attorneys and public relations firms, or using public marketing (Lambsdorff, 2002). Dincă et al. (2021) use a public choice approach to investigate the influence of corruption and rent-seeking behavior on economic prosperity in European Union states. The research spans the years 2000 through 2019. This study's findings demonstrate an inverse relationship between the rate of corruption and economic prosperity in all of the nations investigated.

Channel Transmission of Corruption: For all substantial empirical studies on the link between corruption and economic growth, there is limited study on the channel transmission of corruption's influence on economic growth. Mo (2001) was the first to address this issue. He aims to determine the effects of corruption and the channels via which it influences GDP growth rates. Utilizing ordinary least squares (OLS) regression method for 45 nations for the time frame 1970 - 1985, he at first found a negative relationship between 18 corruption and economic growth, however, the extent of the impact declines significantly and becomes statistically insignificant after controlling for other determinants of economic growth notably investment, human capital and political instability. Mo's study discovered that political instability is the most essential channel via which corruption impacts economic growth, accounting for around 53 percent of the overall effect. From 2012 to 2019, a study for a sample of 48 nations, using the CPI as a metric of corruption, suggests that private investment is a possible transmission channel for corruption (Afonso & de Sá Fortes

Leitão Rodrigues, 2022).

Sanding the Wheels or Greasing the Wheels Theory: Regardless of these concerns, there is no obvious convergence of proof when it comes to the consequences of corruption on economic growth. Various research provides two theories to comprehend the link between corruption and economic growth. The first hypothesis characterizes corruption as an impediment to economic growth. This is referred to as "sanding the wheels" (Hoinaru et al., 2020). In the long and short run, the negative association between corruption and economic growth in 48 countries from 2012 to 2019 supports the "sanding the wheels" idea (Afonso & de Sá Fortes Leitão Rodrigues, 2022). The second hypothesis named the "greasing the wheels" concept, on the other hand, suggests a positive relationship between corruption and economic growth. This positive association develops when there is too much bureaucracy and inefficiency, which stifles the growth of new enterprises. Because of the distortions generated by the failure of governmental institutions, corruption is considered the second best remedy. In other words, when economic actors pay bribes to avoid bureaucracy, corruption may boost economic growth. Akkoç and Durusu-Ciftci (2021) investigation in Turkmenistan supports the "greasing the wheels" theory. Turkmenistan has the lowest corruption control, and it is also ranked last in the globe.

3. Methodology

In strict adherence to the rigorous standards delineated in the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines, the primary objective of this systematic review is to methodically structure the research landscape (Liberati et al., 2009). This is accomplished by conducting a thorough analysis of preceding studies, which involves dissecting the methodologies and theories applied in these studies. Furthermore, this review endeavors to illuminate the intricate nexus between corruption, governance, and economic growth. In the subsequent sections, the steps taken to mitigate bias are expounded upon, in line with the PRISMA checklist. A comprehensive exposition of the systematic review process is provided, encompassing the resources and databases accessed, the rigorous screening procedure, and the discerning selection of relevant articles deemed suitable for inclusion in the present study.

Resources: Scopus and Web of Science (WoS), two interdisciplinary databases, were used as the basis for the article search. WoS is widely regarded as one of the most comprehensive databases available today, housing over 33,000 journals covering over 256 subject areas, such as environmental studies, interdisciplinary social sciences, behavioral studies, economics, and psychology. It ranks them based on three different metrics: citations, papers, and citations per paper, and it includes over a century's worth of complete back records and reference information governed by Clarivate Analytics (Shaffril et al., 2018). Likewise, Scopus is yet another massive database that is available. According to Scopus, it is the "largest single abstract and indexing database ever built," and it has indexed over 14,000 pieces of social science research produced by 4000 different publishers (Burnham, 2008). In addition, Scopus is a database that covers a wide range of fields, such as science, economics, finance, behavior, and psychology, making it one of the most comprehensive resources of its kind. Because of this, the selection of these two databases rendered this study both pertinent and justifiable.

Systematic Review Process for Selecting Articles

Identification: According to PRISMA, there are four steps to the systematic review process (SLR). The review began in October 2022, with the first step consisting of identifying the keywords. Relying on prior research and a thesaurus. As shown in Table 1, corruption and economic growth-related keywords and synonyms were utilized. At this stage, 11 duplicate articles were eliminated following a thorough and careful screening.

Screening: The objective of the initial screening phase was to eliminate duplicate articles. In this instance, 11 articles were eliminated during the initial phase. In contrast, 153 articles were evaluated based on a variety of inclusion and exclusion criteria determined by the researchers during the second stage. The first criterion was the type of literature, and the researchers only considered journal articles because they are the primary source of empirical data. This further implies that systematic reviews, meta-analyses, meta-syntheses, books, book chapters, and conference proceedings were excluded from the current investigation.

Table 1: The Search String

Database	Keywords used
Web of Science	TS = (("corruption" OR "bribery" OR "extortion" OR "fraud" OR "nepotism") AND ("economic growth" OR "GDP" OR "economic development"))
Scopus	<i>corruption AND economic AND growth AND (LIMIT-TO (EXACTKEYWORD, "Economic Growth") OR LIMIT-TO (EXACTKEYWORD, "Economic Development") OR LIMIT-TO (EXACTKEYWORD, "Corruption")) AND (LIMIT-TO (SUBJAREA, "ECON") OR LIMIT-TO (SUBJAREA, "BUSI")) AND (LIMIT-TO (PUBYEAR, 2022) OR LIMIT-TO (PUBYEAR, 2021) OR LIMIT-TO (PUBYEAR, 2020) OR LIMIT-TO (PUBYEAR, 2019) OR LIMIT-TO (PUBYEAR, 2018) OR LIMIT-TO (PUBYEAR, 2017) OR LIMIT-TO (PUBYEAR, 2016) OR LIMIT-TO (PUBYEAR, 2015) OR LIMIT-TO (PUBYEAR, 2015) OR LIMIT-TO (PUBYEAR, 2014) OR LIMIT-TO (PUBYEAR, 2014) OR LIMIT-TO (PUBYEAR, 2013) OR LIMIT-TO (PUBYEAR, 2013) OR LIMIT-TO (PUBYEAR, 2012))</i>

Eligibility and Inclusion Criteria: Two criteria were used to identify the available and potential articles to be analyzed in this study:

- a. The dependent variable in the study is economic growth, while the independent variable is corruption or otherwise to identify the causality between the variables.
- b. The study only looks at full-text articles written in English that were published in the field of economics and business, and published from 2012 to 2022.

For records about the scoping review to be recognized, they had to meet the first two criteria. Also, the English-only rule was put in place because English is a global language and most research articles are written in English. It also helps keep things clear and makes it easier to translate the whole text. After the search string was completed, the screening stage was carried out. The data collection resulted in the elimination of 139 articles out of a total of 153 that could have been subjects for further research. The subsequent step was the screening for eligibility, during which the full articles were accessed and analyzed for their content. After a careful reading, the editors decided not to accept 16 of the articles because certain requirements were not met. After that, the final stage is carried out, which consists of reviewing 7 articles that will be helpful for the subsequent investigation.

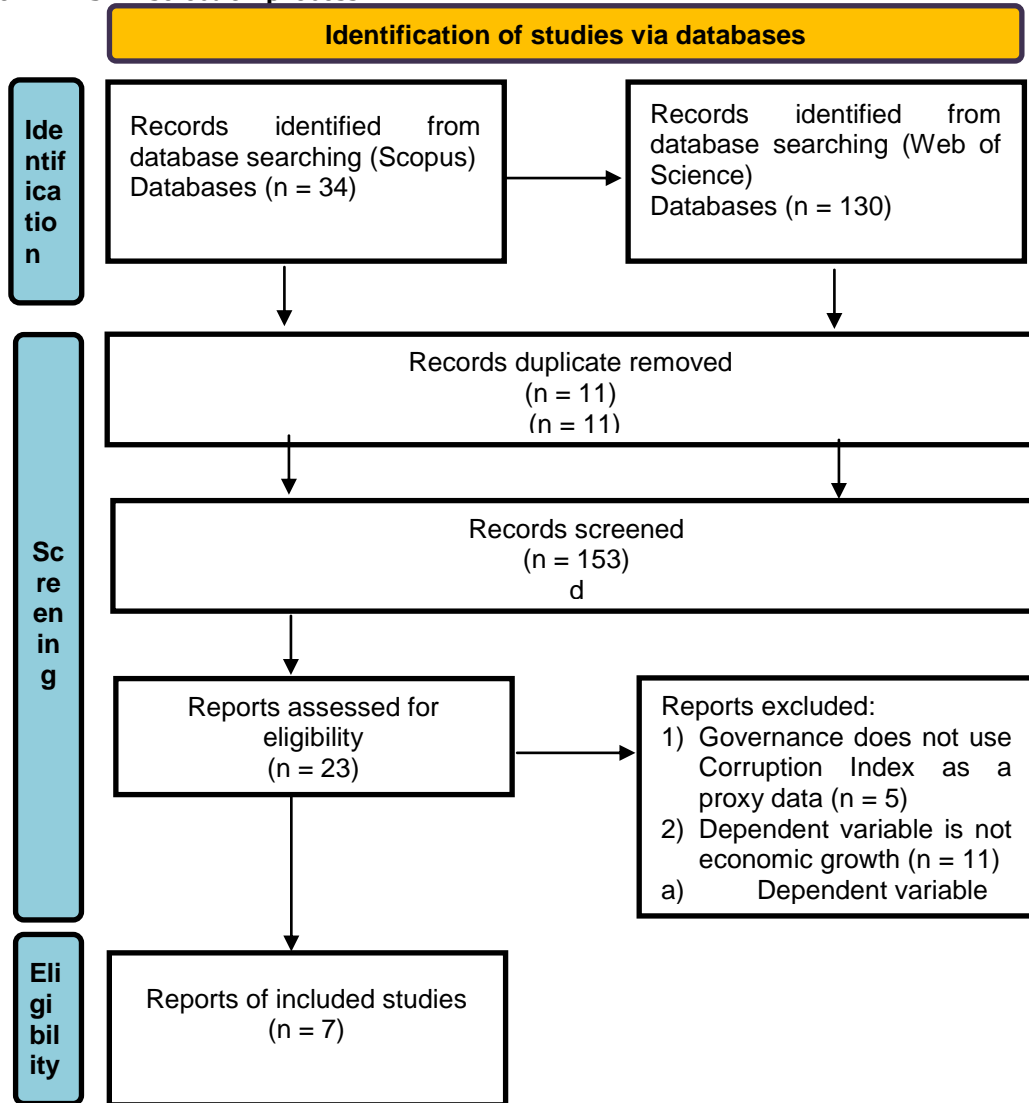
Data Abstract and Analysis: The remaining papers underwent meticulous scrutiny, with particular attention concentrating on studies that directly addressed the predetermined research objectives. This involved a comprehensive review of both the abstracts and full-length articles to identify common themes and draw well-founded conclusions. Furthermore, a quantitative analysis utilizing content analysis was employed to establish a meaningful connection between corruption and economic development.

4. Results and Analysis

Referring to Table 2, both local and international research on corruption and economic growth has received significant attention. In general, most studies used quantitative research methods to look into how corruption affects a country's economic growth. However, there is limited coverage of the causality between corruption and economic growth. The majority of the articles in the table discussed corruption and economic development in low-income countries. Through a variety of mechanisms, including general growth, corruption can influence income inequality and poverty. High corruption can lead to high poverty as higher growth rates are associated with lower poverty reduction and income inequality is detrimental to growth. If corruption widens the income gap, it will also slow down the economy and hence impede efforts to end poverty. Indeed, if a person lives in a society where there is almost no scarcity of resources of any kind, that person is less likely to be interested in gaining wealth through corruption schemes. This method is widely used in less developed countries where the temptation to engage in corruption is greater as they can significantly increase their utility function. It refers to utility as a fundamental microeconomic idea in utility theory. In several research studies, the independent variables include foreign direct investment, interest on

external debt, aid and inflation to assess a country's level of corruption. According to the literature on rent-seeking theory, it has a negative impact on public welfare. One reason is it is not focused on increasing the output and output growth. Additionally, this theory claims that rent-seeking tends to discourage investment. In summary, the main finding that rent-seeking activities hinder economic growth in low-income countries is consistent with findings from other studies too.

Figure 1: PRISMA selection process



(Adapted from Moher et al., 2009)

Table 2: Publication Related to the Corruption and Economic Growth

Author (Year)	Title	Issues and Theory	Methodology and Construct	Findings and Gap
Moiseev et al. (2020)	Investigating the relation between GDP per capita and corruption index	Using traditional econometric multiple regression to model corruption, which is bounded by upper and lower limits, may not produce accurate results, as research indicates that GDP per capita is the most effective predictor of corruption and other macroeconomic indicators do not significantly improve the model's accuracy. Theory of utility	<u>Methodology</u> Ordinary Least Square (OLS) method <u>Dependent Variable</u> Corruption perception <u>Independent Variable</u> GDP per capita	Research has revealed that corruption perception level is most accurately modelled by GDP per capita, as opposed to GDP per capita adjusted by purchasing power parity. Purchasing power parity adjustment is calculated on some unified basket of consumer goods, which may not adequately assess the average living standard since the effective structure of this basket varies drastically across the countries due to their geographical, climatic, political, cultural, economic, historical, gastronomical and other differences.
Wong et al. (2015)	Effects of Rent-Seeking on Economic Growth in Low-Income Economies	The limited focus on rent-seeking as a factor in economic growth in Low-Income Countries (LICs) is noteworthy considering its significant impact on their economies. Theory of Rent-seeking	<u>Methodology</u> Dynamic Panel GMM Estimation Empirical Approach <u>Dependent Variable</u> Real GDP per capita growth <u>Independent Variable</u> Rent-seeking (corruption perceptions index) Total labor force Gross capital formation Total population	Research shows that the practice of rent-seeking (corruption) is unfavorable to economic growth in low-income nations/ Rent-seeking has a negative and significant impact on economic growth in low-income countries (LICs). It supports that rent-seeking activities delay the economic growth of LICs. Limited research examining the effects of rent-seeking activities on economic growth in LICs.

Yuan and Ishak (2022)	Relationship Between Corruption, Governance, and Economic Growth in ASEAN	The prevalence of corruption in ASEAN has had a detrimental effect on economic growth in the region. The theory was not explained.	<u>Methodology</u> Not available <u>Dependent Variable</u> GDP per capita. <u>Independent Variable</u> Corruption Governance	Our findings indicate a correlation between corruption and GDP per capita, with a statistically significant negative effect on economic growth, as predicted by economic theory.
Haruna and Bakar (2020)	Interest rate liberalization and economic growth nexus: does corruption matter?	The majority of recent and earlier research has focused solely on the effect of interest rate adjustments on economic growth without evaluating the significance of corruption. Theory of interest rate liberalization.	<u>Methodology</u> Theoretical methodology The modified version of Driscoll and Kraay's (1998) Cross-sectional dependence and heteroscedasticity test <u>Dependent Variable</u> RGDP per capita <u>Independent Variable</u> Gross capital formation Labor force participation FDI Inflation Credit to private investors by banks Government expenditure Corruption	Labor force and capital stock negatively affect economic growth, whereas credit to the private sector by the bank and FDI emerge as significant contributors to economic growth. The interaction terms of corruption with FDI and CPSB indicate negative effects that show how corruption erodes the benefits of liberalization. The data indicate that the relationship between corruption and foreign direct investment and bank lending to private investors has unfavorable effects. Most of the recent and past studies only examined the impact of interest rate reforms on growth without investigating the relevance of corruption.
Abu and Karim (2015)	The causal relationships among corruption, political instability, economic development and foreign aid: evidence from the economic community of West African states.	Most ECOWAS countries are less developed, very corrupt, and politically unstable, in addition to relying heavily on foreign aid. The theory was not explained.	<u>Methodology</u> Unit root test Cointegration test Granger causality test <u>Dependent Variable</u> Corruption <u>Independent Variable</u> Political instability Economic development Aid	Long-run results indicate a positive unidirectional causality from aid to corruption and a negative unidirectional causality from aid to economic development, as well as a positive bidirectional causality between economic development and corruption in ECOWAS countries. Recent researchers have not paid adequate

				attention to economic development, corruption, political instability and aid, particularly in the ECOWAS region.
Shittu et al. (2018)	The nexus between external debt, corruption and economic growth: evidence from five Sub-Saharan African (SSA) countries	The diminishing growth rate, which is a result of massive indebtedness on the one hand and corruption on the other, has significantly hampered economic stability and recovery efforts. Theory was not explained.	<u>Methodology</u> Panel unit root and panel cointegration test Fully modified OLS and dynamic OLS Granger causality test <u>Dependent Variable</u> GDP per capita <u>Independent Variable</u> Interest on external debt Non-linear effects of external debt Gross capital formation Corruption	The results reveal a positive correlation between corruption and economic growth, as well as a unidirectional causality from economic growth to corruption. Model that combines external debt, corruption, and economic growth. This has not been captured in any recent panel analysis involving these variables in a model.
Antoni et al. (2019)	The Relationship between the Level of Corruption and Economic Growth in Indonesia: An Investigation using Supply Chain Strategy and Bounds Test	Continued corruption will have a negative impact on the country's economy and society. Theory was not explained.	<u>Methodology</u> Auto-Regressive Distributed Lag (ARDL) method <u>Dependent variable</u> Corruption <u>Independent variable</u> Gross regional domestic product (GDP) Perception of index corruption (ICP) Foreign direct investment (FDI) Government expenditure (GE) Inflation (INF) Human Development Index (HDI)	The study found an adverse and statistically significant correlation between corruption and economic growth over the long term. The implication of this research is that weak institutions, indicating the failure of government (corruption) affect the performance of economic growth. Negative and significant relationship between economic growth and corruption at a significant level of 1 percent. As for variables (government expenditure, foreign direct investment (FDI) and inflation) are significant at different levels of confidence.

5. Conclusion and Direction for Future Research

The purpose of this systematic review is to show the causality of corruption to economic growth within the past 10 years from 2012 until 2022 literature. Based on a review of published articles, numerous authors stated that corruption has a significant causality on related study elements such as purchasing power, country debt, political stability, and foreign direct investment which are studied in greater depth from the perspective of economic growth of a country by the researchers (Moiseev et al., 2020; Wong et al., 2015; Yuan & Ishak, 2022; Haruna & Bakar, 2022). From the first article, it has been proven that GDP per capita is the most accurate method for estimating perceived levels of corruption without adding in other economic indicators such as purchasing power and unemployment rate (Moiseev et al., 2020). To combat the level of corruption in a developing economic country, the government should strive for the country's economic development as a priority as an effective tool to reduce corruption. In low-income countries, it is crucially needed to tackle corruption issues to have fast and stable economic growth by making the right changes on their legal structure.

Few authors have said that corruption has a positive effect when including corruption level on estimating the productivity function, but the test results interpret significant reduction on investment level, hence reducing economic growth level of a country (Shittu et al., 2018). Most of the literature supports the idea that corruption results in a negative impact on economic growth (Moiseev et al., 2020; Wong et al., 2015; Yuan & Ishak, 2022; Haruna & Bakar, 2022) and shows how political instability in an ECOWAS country stunted their economy, spawned the country to rely on foreign aid, and caused the high level of corruption (Abu & Karim, 2015). Policies that are established to foster the political situation will lessen the reliance on foreign aid and reduce the corruption level in this country. Along with this, it is clear that the main cause of corruption is weak establishment in the country's regulation (Antoni et al., 2019). The root cause must be a prelude to being expelled from the beginning of policy development to cater corruption out of an organization for the outset of developing the country's economy.

There is a limitation that needs to be considered when assessing the results of this study that is, the research paper referred to writing this SLR was published in two different databases (Scopus and WoS). This meant that articles published in different forms of publications including books, conferences, and reviews, were not included. However, 7 journal papers are used to derive conclusions for this analysis, which we believe is sufficient to provide a thorough overview of the literature connecting the causality of corruption to economic growth.

Future research can look into longitudinal studies by tracking the evolution of corruption and its impact on economic growth over an extended period. This would aid in understanding how changes in corruption levels affect economic growth over time and whether the causality relationship holds in the long run. Further research can also investigate the role of institutional reforms in combating corruption by assessing the impact of legal, regulatory, and governance reforms on reducing corruption and fostering economic growth.

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