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# Corruption and Fiscal Imbalance in Kenya: A Meta-Analytic Study of Revenue Collection and Budget Deficits

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**Abstract:** ***This paper examines the impact of corruption on the fiscal performance of Kenya with special interest on how it has affected budget deficits and revenue collections in the period 2013-2023. Since 2013 the fiscal reforms such as the iTax system and the Public Finance Management Act and program-based budgeting have not resulted in Kenya overcoming the long-term revenue deficit and increasing fiscal imbalances. In order to test this paradox, the paper utilizes a quantitative meta-analytic methodology, using the evidence presented by Four empirical studies and state financial reports to establish the overall size and nature of the relationship between corruption and major fiscal indicators. The analysis is informed by the Public Choice, Principal- Agent, and Fiscal Illusion theories, which explain corruption as a failure in governance that undermines the ability to raise revenue and overestimates the impact of spending on the population. The above pooled findings show that corruption and fiscal performance are moderately and strongly negatively correlated (r = -0.44, p < 0.001), which proves that corruption decreases revenue collection and magnifies budget deficits. Despite significant heterogeneity among studies (I2 = 85.88 percent), the effect was consistently negative and publication bias analysis (Eggers p = 0.303; Beggs p = 0.483) supported the strength of the results. The research finds corruption is a factor that is damaging fiscal stability and that inefficiencies in government spending compound this effect. It suggests more robust anti-corruption audits, open procurement processes and fiscal accountability controls to help protect revenue integrity and achieve sustainable economic management in Kenya.***

**Keywords:** corruption, budget deficit, revenue collection, fiscal performance, Kenya

## 1. Background of the Study

The management of the country finances has been one of the solid foundations of the national development where all governments labour to generate more revenue through effective mobilization, and fiscal control to ensure that the pressing needs of the people are addressed. In this regard the trends of the budget deficits and poor collection of revenue have been particularly on the rise particularly in the developing economies like Kenya. Budget deficit refers to a situation where government spending exceeds revenues during a given financial year; usually leading to borrowing in order to offset the shortfall (International Monetary Fund [IMF], 2022). Efficient revenue collection is very vital when it comes to funding of the public services, infrastructure, and debt repayment. The correlation between the two fiscal indicators is not technical only, but it is concerning other systemic problems associated with implementation of policies, institutional performance and more importantly the impacts of corruption.

The complex fight against budget deficits and poor performance of its revenue collections has generated a number of doubts about the integrity and cost-effective nature of Kenyan fiscal regimes. Even though the National Treasury and the Kenya Revenue Authority (KRA) set ambitious revenue targets each year, they still remain incomplete, which causes secondary budget provisions, foreign borrowing, or spending reductions. The Controller of Budget (2023) notes that Kenya registered a fiscal deficit in the 2022/2023 financial year to the tune of KSh 849 billion as revenue collections failed to meet expenditure demands, and the debt servicing costs skyrocketed. These problems do not lessen with the introduction of different tax reforms and restructuring of administration to expand tax base and enhance compliance.

Corruption is one key and persistent influence that deteriorates the gathering of revenues and aggravates the financial balance. Transparency International (2023) defines corruption as the misuse of entrusted power by using it to gain a personal benefit and in public finance, there are forms of corruption which include tax evasion, bribery, embezzlement of state funds and corruption on procurement. In Kenya, the big scandals that have caught the eye include the National Youth Service (NYS) to the Kenya Medical Supplies Authority (KEMSA) corruption which has been prevalent in management of public resources. The Ethics and Anti-Corruption Commission (EACC) reveals that revenue leakages attributed to corrupt practices have cost the country an equivalent of a considerable amount in revenue losses each year and estimates indicate the government might be missing an opportunity to generate up to 30 percent of the revenue potential (EACC, 2021).

This research aims to bridge the empirical gap by analyzing how corruption simultaneously affects Kenya's ability to mobilize revenue and maintain fiscal balance. It adopts a dual-lens approach to assess whether corruption in revenue administration and expenditure management correlates significantly with the persistent budget deficit. This study also considers both institutional and structural aspects of corruption evaluating how policy implementation failures, regulatory loopholes, and political interference contribute to fiscal imbalances.

The literature has already found out that there is a negative relationship between corruption and fiscal performance. An example is that Mauro (1995) discovered that corruption

reduces government revenue through a weaker management of taxes and a promotion of informal economies. In the more recent years, Dreher and Herzfeld (2005) supported the earlier assumption that corruption reduces tax collection efficiency and elevates the degree of inefficiencies in the amount of money that is spent by the government. Researchers like Gachoki and Rotich (2021) have tried to evaluate the macroeconomic dilemma of corruption in Kenya stating that tax reformations have noticeably increased revenue collection, however, the very problem of governance is hindering sustainable tax collection in long run. Some of these studies have however looked into either revenue collection or budget deficit either independent of each other instead of the intertwined effect of the same effect of corruption.

This inquiry does not only relate to scholarly debate, but it addresses current policy initiatives and community-wide debates in Kenya. As the debt burden of the country increases, with trust of donors having grown in relation to governance indicators, there is a need to understand the cost the country is paying in terms of the fiscal cost of corruption. Besides, Kenya is a part of different international frameworks, including the United Nations Convention against Corruption (UNCAC) and the African Union Convention on Preventing and Combating Corruption, that have a specific focus on the financial aspect of governance failures. This study will provide practical recommendations to the policymakers, development partners, as well as the civil society organizations that deal with transparency and accountability issues in fiscal affairs by correlating corruption empirically with budget deficits and revenue under-performance.

To conclude, this study is surely topical and essential. The topic starts with the overall issue of financial fitness, and it then visibly concentrates on Kenya and its systemic budget deficit as well as revenue limitations, then it shows corruption as the critical explanatory factor. Ultimately, the research tries to be the basis of evidence-based strategies to enhance the management of public finance by going to the fiscal roots of corruption.

### 1.1 Statement of the Problem

Kenya continues to experience persistent budget deficits and underperformance in revenue collection despite numerous fiscal reforms, including the rollout of the iTax system, the Public Finance Management Act (2012), and digitization of revenue systems. According to the Kenya National Bureau of Statistics (KNBS, 2023), the average fiscal deficit has remained around 6% of GDP over the past decade. This imbalance has forced the government into excessive domestic and foreign borrowing, with the national public debt reaching KShs. 11 trillion by 2023 (National Treasury, 2023). Although economic inefficiencies and structural challenges play a role, corruption is increasingly seen as a core driver of fiscal underperformance. Forms of corruption such as tax evasion, bribery, under-declaration, and procurement fraud have compromised both the collection of revenue and the efficient use of public funds (EACC, 2022). The Auditor-General has also flagged repeated cases of financial misappropriation and unsupported expenditures in government ministries (Office of the Auditor-General, 2022). Yet, most policy discussions and research studies treat revenue shortfalls and budget deficits independently, failing to capture their mutual relationship with corruption. There remains a critical empirical gap in assessing how corruption simultaneously undermines revenue mobilization and escalates fiscal deficits. This study aims to fill that gap with an evidence-based approach that integrates both dimensions of fiscal performance.

### 1.2 Research Objectives

The principal aim of the research is to test empirically how corruption affects revenue collection to deficit of Kenya and the budget deficit results.

Specifically, the research aims to:
1) Study the correlation between the corruption level and the economy revenue collection performance in Kenya over the period between 2013 and 2023.
2) Examine how corruption has created a budget deficit in Kenya during the periods.
3) Test the mediating effect of inefficiency in the use of public expenditure in linking corruption with budget deficit.

### 1.3 Research Questions

In order to direct this study, the research has the following questions that will be answered:
1) What effect does corruption have to Kenya budget deficit and revenue collection?
2) What has been the reaction of fiscal outcomes (budget deficit and revenue collection) to anti-corruption interventions in Kenya in last a decade?

### 1.4 Scope of the Study

The paper is aimed at examining the complex relationship between corruption and the fiscal performance of Kenya especially how corruption affects budget deficit and revenue generation by the government. It is organized to address the impacts of the corruption as a form of governance problem on the flows, whether in or out, of the management of public finance, in the Kenyan context. The research focuses on the period between 2013 and 2023 that has witnessed major political, economic, and institutional changes in the financial administration of states. This was a specific period because it was chosen to overlap with the devolution period, besides the introduction of different anti-corruption reforms, revenue automation programs (iTax and e-Citizen) and fiscal consolidation policies that occurred during the same period thus making it an appropriate time to study empirically.

Geographically, the study will be limited to Kenya but focusing on data that will be collected at the national level through important government agencies in Kenya i.e. Kenya National Bureau of Statistics (KNBS), Kenya Revenue Authority (KRA), National Treasury and Controller of Budget (CoB). Other international databases and indices that will be used to furnish comparable, consistent, and empirically relevant measures of corruption include Transparency International Corruption Perceptions Index (CPI) and World Bank Governance Indicators. Such a concentration on data at the national level allows the study to

offer information that can apply to the fiscal policy development of the central government and reform of approaches to public finance management.

Two major dependent variables, namely the performance of revenue collection and trends of the budget deficit, are the focus of the study in terms of its theme. The revenue performance will result in three engagement areas namely the actual versus conceptual revenue collection figures, ratio of revenue to GDP, efficiency measures on diverse tax heads (e.g., income tax, VAT, customs). Budget deficit will be examined in line with fiscal deficit ratios as well as pattern of borrowing during the period he has chosen. Corruption which is whether indicated as independent variable takes perceptions-based indicators, audit results, reported financial malfeasance cases, and governance ratings as its values. Furthermore, the study will determine whether the inefficiency of the public expenditure is a potential mediator since budget absorption rates, cost overruns in the implementation of public projects, as well as audit inquiries will be used to quantify this.

In methodological terms, the study would be restricted to a quantitative, empirical framework, in the sense that primarily respond to secondary sources of information, and econometric methods, such correlation analysis, regression modeling, and time-series analysis, will be used to establish and reveal patterns and relationships among the key variables. This choice of the design is dictated by the fact that such large amounts of publicly available fiscal and governance data exist on a 10-year scale, and that objectivity and replicability of results, as well as their empirical soundness are required.

It is significant to mention about the study delimitations. First, the study fails to analyze the county-level budget deficit and corruption patterns which are other meaningful areas of research in the future. Second, the possibility to indeed measure or quantify any unreported or hidden types of corruption will not be addressed in the course of the study owing to obvious challenges of obtaining credible data on these practices. Third, other factors of finance, like inflation, changeable exchange rate, or political tendencies may not be statistically tested in the study, but they may be indirectly related to fiscal performance.

Inadvertently, to be feasible, the study will confine itself to easily accessible and verifiable sources of data available, and all the findings must rest on statistically sound procedures, and duly documented procedures. The ethical aspects will be observed especially by using open available data, and interpreting the results among the limits of objectivity and academic honesty.

The study tries to achieve the research in a clear-cut manner without losing focus in defining the scope of the study as much as the intention of having a policy-relevant analysis. It is also free of scope creep through its strong attachment to its key variable's corruption, revenue collection and budget deficits as well as geographical proximity and temporal span. This will improve its validity, reliability and utility of its findings on policy makers, researchers and anti- corruption practitioners in Kenya and the East African region at large.

### 1.5 Justification of the Study

This study has been justified by the constant and acute budget deficit situation as well as the poor collection of revenues in Kenya. These financial imbalances have emerged as matter of grave concern not simply given that they weaken economic stability, but also since the capacity of the government to accrue developmental priorities like education, healthcare, infrastructure and poverty reduction get restrained as well. In spite of several reforms and changes on public finance over the past several years, the fiscal position in Kenya is still risky, and there are already demands to take a closer look at what caused this. One such factor is corruption, which is highly recognized but not well measured**.**

From a policy perspective, the study is highly relevant to ongoing fiscal consolidation efforts by the Kenyan government. Over the past decade, Kenya has introduced numerous interventions aimed at enhancing revenue collection and controlling public spending, including the rollout of the iTax system, implementation of the Medium-Term Expenditure Framework (MTEF), the e-Citizen portal, and the enactment of the Public Finance Management Act (2012). However, many of these reforms have produced mixed results

The need to come up with empirical evidence to determine how corruption affects the performance of the fiscal sector in Kenya justifies this study. Although, anecdotes and journalistic reports regularly present corruption as one of the major causes of the leakages of revenues and inefficiencies in the expenditures, the consensus lacks adequate quantitative and empirical researches connecting corruption with particular fiscal performance including the budget deficit and revenue collection. The research therefore addresses a dire need to fill a research gap by providing an evidence-based report on corruption as a factor that misrepresents the amount of finances that flow into or out of the government. Weak enforcement and institutional corruption are some of the reasons why this is the case. Recent budget policy statements made by the National Treasury still insist on efficiency and accountability in their fiscal activity, but still, these statements do not always go far to assess the fiscal cost of the corruption. The research will therefore give evidence-based information that will be used to help in designing and implementing better anti-corruption measures in the public finance.

It is also practically applicable in institutions like Kenya Revenue Authority (KRA), Ethics and Anti-Corruption Commission (EACC), Office of the Auditor-General, and other controlling agencies whose work is directly or indirectly associated with revenue management and public accountability. The quantifiable correlation between corruption and fiscal performance will also enable these institutions come up with a clear course of action to cure a problem, not just when the procedures are weak, but also when the system is not well administered. As an example, should the research identify some forms of corruption overlying revenue collection systems like VAT or custom fees, this may be used to develop a specific compliance and enforcement approach.

In addition, the research is regionally and globally applicable, since Kenya is under monitoring of the international lenders including the International Monetary Fund (IMF) and World Bank, especially following its growing dependence on foreign debts. Kenya is usually constrained to adhere to governance and fiscal openness standards as one of the side agreements of structural adjustments and budget supports. The research can contribute to such policy discussions and negotiations as these by measuring the consequences of corruption to budgetary results.

On the social face, the study assists in the larger improvements that are aimed at ensuring that the society improves in the delivery of public service and the trust that the society has on the government. Corruption in the public finance is not a technical problem, the faces of citizens are touched by this as resources are shifted towards resources into other areas rather than focusing on areas of importance to the citizens. The outright knowledge of the ability of corruption to cause a dent on the fiscal side can build a case of why people should get interested in the civic life, changes of legislation and the control of the population. It also enables the citizens to require responsibility and clarity in spending.

In academic terms, the research adds on to the larger pool of information on governance and public finance in Sub-Saharan Africa. Although so much has been written on the subject of corruption and governance in general, there are still few attempts that isolate measure the effects of corruption on macro-fiscal results in a certain country like Kenya alone. The study will therefore bridge a gap in theoretical approaches as well as in methodological approaches particularly due to the fact that the study is empirical and that the time-series data covers a 10-year period.

Lastly, the research is justified in view of its timely nature. Kenya is facing a situation of fiscal strain caused by burgeoning debt commitments, the international shocks of economic dynamics, and the post COVID-19 need of recovery. Since the government is looking at ways of improving domestic resource mobilization and reducing the size of the budget deficit, improved knowledge of the nature of the corruption fiscal performance nexus is not only desirable, but necessary. Policy responses are the most likely way to introduce evidence-based practices to stop corruption and achieve the goals of economically sustainable and long-term recoverability in Kenya.

### 1.6 Conceptual Framework

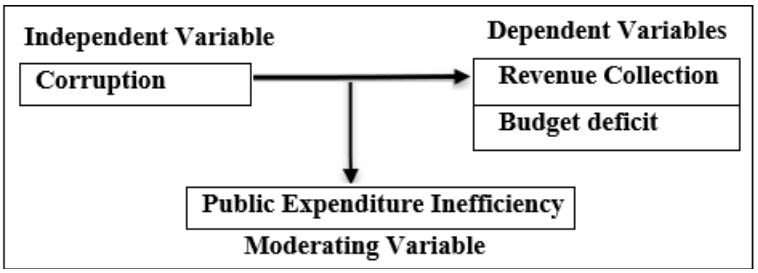



**Figure 1:** Conceptual Framework
Source: Author

The model is meant to demonstrate the impact of corruption as an independent variable on budget deficit, which is the dependent variable and revenue collection. In this paper, the researchers consider include public expenditure inefficiency that may strengthen or diminish the influence of corruption on fiscal performance as a moderating factor.

#### 1.6.1 Explanation of Variables and Their Relationships

**1.6.1.1ndependent Variable: Corruption**
Corruption will be operationalized using measurable indicators such as the Corruption Perception Index (CPI), audit reports, reported cases from the Ethics and Anti-Corruption Commission (EACC), and governance indicators from sources like the World Bank.

It affects both revenue collection (through tax evasion, under-collection, or bribes) and public expenditure (through inflated procurement costs, ghost projects, or embezzlement), ultimately increasing the budget deficit.

**1.6.1.2 Moderating Variable: Public Expenditure Inefficiency**
This is a variable that measures inefficiencies in public expenditure that can make any fiscal performance distorted in relation to revenue performance. It consists of improper implementation of a project, financial abuse, and budget mismatch.

This variable cycles the impact of corruption to the budget deficit. As an example, when the revenue is enhanced, but the spending of the people is inefficient because of corruption, the fiscal balance continues to be adversely affected.

**1.6.1.3 Dependent Variables:**

- Revenue Collection Performance: This is measured in terms of actual versus projected revenues and estimated revenue-to-GDP ratios and growth in tax head performance. Having a poor collection increases the deficit.
- Budget Deficit: It is the difference between expenditure and revenue and typically expressed as a fraction of GDP. Greater levels of corruption and low collection of revenues contribute to the deficit.

## 2. Overview of Literature

Corruption and fiscal performance are the links that have drawn significant research interests in the study of governance and its impact on the outcomes of public finances

almost everywhere in the world. The most fundamental element in this discussion is that corruption results in damage to the mobilization of revenues and the effectiveness of the expenditure, thus, it ultimately leads to continued budget deficits and imbalances on the fiscal front. The findings of many other studies have demonstrated that where corruption has taken deep root in the system of the state, the capacity of the states to raise sufficient revenue and keep their budgets intact is fatally damaged (Gupta, de Mello, & Sharan, 2001). This is more so in the developing countries where the institutional capabilities, enforcement of the law and accountability in the public sector may not be given enough attention.

In Kenya, corruption is not only an ethical or a moral issue it is a very big financial challenge. The nation has registered low results in all international corruption indicators with widespread implications in the accepted implementation of the budget, resource mobilization, and economic planning. To put this in context, the Transparency International (2023) rates Kenya 123 position out of all 180 countries in its Corruption Perceptions Index, which implies that the corruption perception is high particularly in the public sector. This type of governance problem misrepresents the tax compliance, escalates the cost of transactions, dampens the credibility of governmental institutions, and devalues the effectiveness of fiscal policies.

Available literature divides the effects of corruption on the public finances into two wide spheres including revenue collection and spending. At the revenue front, corruption results into erosion of the tax base, which includes avenues like tax evasion, bribery, and under declaring of incomes. Taxpayers might collude with misguided officials to distort or underrate their tax incurring huge losses in revenue (Fjeldstad & Tungodden, 2003). Also, the corruption dampens the investment of the formal economy and thus suppresses taxable activity. On the spending side, corruption leads to the over-charging of the government on procurement of goods, allows misuse of the government funds, and distorts budget priorities. The projects get inflated or can even be abandoned and the governmental expenditure is usually shifted to other areas that are not the priority of the nation (Tanzi & Davoodi, 1997).

A number of writers have devised models and structures that account for the implications of corruption on fiscal balance. In these studies, the indicators of government effectiveness, the budget deficit-to-GDP ratio, and the revenue-to-GDP ratio are typical variables that people use to measure fiscal performance. To give an instance, Mauro (1998) proved that corruption has a negative impact on government revenue and causes the rise in budget deficits by decreasing the amount and quality of government spending. A more recent study by Akitoby, Baum, and Hackney (2020) supported this point directly by noting that fiscal institutions are central to alleviating the consequences of corruption on the financial systems of government due to which nations with improved anti-corruption systems and fiscal transparency are more likely to have improved budget patterns.

In the case of Kenya, although different reforms have been undertaken to improve fiscal discipline which include; the introduction of the Integrated Financial Management Information System (IFMIS), the use of electronic tax filing to iTax, and the passing of the public Finance Management Act (2012) their success has also been hampered largely by institutional corruption. The Auditor-General regularly reports the existence of anomalies when it comes to the use of tax-payer money, all over being un-justified to full-blown mis-use and even mis-appropriation. Such problems do not only impact on service delivery, but also lead to a growing fiscal deficit that needs to be funded by borrowing and hence, add to the burden of the public debt.

The literature also throws light on political economy factors which have important role to play in the determination of fiscal outcomes. Where corrupt networks are serviced with political elites, reform of public finance institutions can be opposed or sabotaged. Furthermore, tax collection in the presence of high perception of corruption could not be legitimate, and therefore, the tax collection agencies do not receive high levels of voluntary payment and more informalization in the economy (Keen & Mansour, 2010).

In general, the literature that was reviewed to this point underlines the large body of theoretical and empirical evidence associating corruption with fiscal performance, both in terms of budget deficit and revenue performance. Most of such literature is however generalized to the world or at macro level associations without direct mention to the Kenyan situation. Moreover, even most of the existing research recognizes the causality between corruption and fiscal deficit, a joint effect on revenue collection trends and budget deficit trends in a unified model is hardly ever tried.

Therefore, the present study is guided by the necessity to respond to both of these relationships and offer empirical research that narrows to Kenya. It will be able to complete the literature on this issue creating a more concise evidence-based picture of the impact of corruption on both sides of the fiscal equation revenue generation and budget sustainability using data at the national levels covering the period 2013 to 2023.

### 2.1 Theoretical Review

The analysis of the corruption and fiscal performance correlation, namely, its impact on revenue gathering and budget deficit depends on a number of interconnected theoretical frameworks. These theories provide more conceptual frameworks based on which they justify the influence of the corrupt practices on the state capacity, institutional integrity, and the resultant effect on the finances of the state. In this section, the researcher discusses three major theories that make the study look promising: The Public Choice Theory, the Principal-Agent Theory, and the Fiscal Illusion Theory. All the theories are analyzed, in the sense in which they explain the adverse effect of corruption in revenue loss and increasing budget deficit, particularly in Kenya.

### 2.2 Public Choice Theory

The Public Choice Theory is an economic approach to the political decision making developed by Buchanan and Tullock (1962). It presupposes those politicians and

bureaucrat are concerned with their personal interests instead of acting in community interest. Under this theory, the motivation of the public officials tends to maximize their personal benefits be it power, wealth or even political. The implication of this theory is that efficient public service delivery gets lost in the undesired process. The theory is especially pertinent whenever analyzing the way budgetary choices are conjured up and compromised in an atmosphere full of corruption.

Therefore, in reference to Kenya, the Public Choice Theory is relevant in explaining why most of fiscal policies such as taxation and expenditure cannot achieve development goals. Politicians can shape governmental expenditures towards monies inefficiently directed or even exorbitantly spent on projects that are of that end of the political poles, they represent. In the same vein, there are instances when political elites can compromise the process of revenue collection in terms of getting involved in undermining the process of the tax laws enforcement or even shielding their allies when it comes to prosecution of tax offenses. This leads to the increase in budget deficit and the decrease in the effectiveness of the revenue collection process (Mueller, 2003).

**2.2.1 Principal-Agent Theory**

This theoretical perspective can be applied when trying to understand the cases where Kenya budgeting choices do not look like being made out of financial soundness but political expediency. Such behavior can be seen in high profile scandals of misuse of public funds like of the Anglo-Leasing case and Goldenberg case. These examples point to the fact that government institutions are prone to suffer fiscal imbalances as a result of the misuse or redistribution of resources collected by the government.

The other basic theoretical foundation of the research paper is Principal-Agent Theory that was first coined by Jensen and Meckling (1976). It is a theory that is used to explain the scenarios when a party (called a principal), like the government or the citizens, entrusts another party (called an agent), like the public officials or revenue collectors, to act on its behalf. The issues of asymmetry of information become problematic where the agents possess more information available to them than the principals; in the event whereby controls are not in place, the agents are able to act in their own self-interest to the disadvantage of the principals.

In terms of fiscal governance, the theory describes how much corruption is likely to take place among the people in power through acts of embezzlement, bribery, or tax records manipulation without being noticed by a watchdog. In situations when the checks on the institutions are weak like in most developing countries including Kenya, agents may take an advantage over the system and the revenue collection may be poor and leakages of finances may occur. The availability of weak systems of auditing, limited enforcement of the procurement laws, and political patronage are additional sources of information in the theoretical approach is helpful in assessing the fiscal management systems in Kenya. Although there are such mechanisms as the Integrated Financial Management Information System (IFMIS) and monitoring institutions especially in the public procurement sector there is a great gap in both enforcement and the monitoring process. Such loopholes enable representatives in both revenue-collecting and spending arms of government to be opportunistic, a characteristic that impairs the overall fiscal performance and absence of accountability identified by this theory.

**2.2.2. Fiscal Illusion Theory**

According to the Fiscal Illusion Theory, as first introduced by Oates (1988), the concept is based on the idea that an ill-informed citizen, the citizen who does not have a complete information about the revenues and expenditures of the state at his disposal, can underrate the actual amount of government spending. Such a misperception may be the cause of greater use of government services which, without increases in revenues, relies on taxations. Governments, in their turn, can meet such requirements by borrowing money thereby aggravating the deficit.

The presence of corruption worsens the fiscal illusion by covering the true picture of the fiscal stance of the govt. In Kenya, overestimates in the budget, distortions in the actual spending, the use of off-budget financing usually provide a distorted picture of the financial position of the government. Further there is a lack of transparency in terms of the public procurement as well as the work on the project which helps in not being able to judge on the use of funds. What this does is that it obscures the real cost in the fiscal load, so that this mismanagement can continue and deficits can accumulate without an audible outburst on the part of the citizens.

The experiences of Kenya in terms of growing budgets and poor performance in the collection of its revenue has been reflected in this theory, which is usually linked by lack of understanding amongst people or their isolation because of low levels of access to budgetary information. Corruption allows a game of over-spending and under-collection by misrepresenting the perception and reality of fiscal management as a vice that destroys the long-term economic stability.

**2.2.3 Integrative Role of Theories in the Study**

Combing through these three theories, Public Choice, Principal-Agent, and Fiscal Illusion, the search has been provided within the context of fathoming how corruption affects the Kenyan fiscal outcomes. The problem, according to Public Choice Theory, lies in the incentives of the political players; the weaknesses of the institutions, in the other theory, Principal-Agent enable corruption; and the persistence of corruption belongs to the Fiscal Illusion Theory.

Collectively, they provide an overall theoretical framework used in evaluating the two-pronged impact of corruption on revenue collection and fiscal deficit. Through basing the study on these frameworks, the study will be in a better position to contextualize the findings and make policy-relevant conclusions within the context of the Kenyan social political and institutional reality.

**2.3 Empirical Review**

The empirical studies examining the connection between corruption and fiscal performance have resulted in a rich number of studies on the topic, much of which, findings-wise,

point in one direction: that corruption has destructive effects on the amount of public revenue and budget balance. The number of published studies in such studies is numerous and diverse in geographical and economic settings and methodological approaches, ranging to panel regressions and time-series analysis, the estimation of instrumental variables and structural equation models. This section will provide the review of selected empirical literature with special interest given to literature related to impact of corruption on revenue collection and budget deficit, especially on Kenya and other similar Sub-Saharan African economies.

**2.3.1 Corruption and Revenue Collection**

The effect of corruption in tax collection is not a new aspect. According to Tanzi and Davoodi (1997), corruption has eroded tax administration because it helps in tax evasion and evades voluntary tax compliance. Tax collectors in an environment plagued by corrupt activities usually demand bribes to lower taxation, thus leading to a decline in governmental income. A survey conducted by Fjeldstad and Tungodden (2003) in Tanzania showed that taxpayers behaviors in collusion with tax collectors would result to underreport of taxable income. Likewise, Alm and Martinez-Vazquez (2003) also observed that within the Latin American context that the tax revenues were inordinately smaller in the cases of countries whose perceived corruption was higher after controlling other macroeconomic factors.

Kenya is one of the examples where the assertion that corruption is an impediment of revenue mobilization is substantiated by empirical evidence. Wawire (2011) also performed a time-series analysis and concluded that weak governance and corruption adversely influenced tax effort in Kenya. The research found poor levels of tax compliance was attributed to corruption perceived by the Kenya Revenue Authority (KRA) personnel and poor enforcement systems. In more detail, Ndungu, Ngugi, and Wanjala (2020) recently resorted to panel data econometrics by using the data of KRA and estimated that up to one-sixth of the revenue potential in Kenya was lost due to inefficiencies related to corruption per year. Their results matched with those of the Auditor General reports that have on numerous occasions indicated that revenue leakages are on account of irregular waivers of tax, exemptions and collusion.

The effects of the digital reforms on tax collection have not been left out. As an illustration, Obwogi (2019) focused on the impact iTax had on raising revenues and pointed, at first, to a positive effect, but also stressed that the systemic corruption and political interference persisted, restraining the improvement in the efficiency of revenue collection. These results indicate the notion that technology interventions alone can improve tax management, and they will work within the larger governance regime.

**2.3.2 Corruption and Budget Deficit**

Corruption also has firsthand impact on the budgetary consequences in that; it increases the level of public spending, misleads the budget priorities and decreases the effectiveness of the public expenditure. Mauro (1998) demonstrated that corruption de-ties the amount of investment by governments affecting the current expenditure in the governments and because of the large projects in infrastructure, more chances of receiving kickbacks is created. According to the cross-country analysis he found that corrupt countries had much larger budget deficits caused by misallocation and wastage of government funds. To backup this argument, Akitoby et al. (2020) demonstrated a positive relationship between better fiscal balances and decreased deficits and stronger institutions in the public and lower corruption rates in the developing countries.

In Kenya, a few researches have been conducted to investigate how corruption can relate to fiscal imbalances. According to Gachie (2016) repeated budget overruns in Kenya infrastructure sector were directly associated with procurement frauds and cost escalations. In a study, it is also observed that the need to increase spending, especially to finance the budget deficits, justified failures in governance which remained hidden. On the same note, Mwangi and Muturi (2018) have operated a regression analysis of national budget measures and obtained such findings that on a year with high corruption scandals, a greater than expected budget deficit occurred, implying a causative relationship between mismanagement and fiscal worsening.

The other one of the key streams of research has been the audit outcomes and tracking of public expenditure. As an example, Kimani and Kinyua (2021) compared the data collected at the county and national ministry levels concerning the experiences of unsupported expenditure, delayed projects, and other procurement anomalies based on the reports of the Auditor-General, and the findings revealed that counties and national ministries, where the experiences of unsupported expenditure, stalled projects, and procurement irregularities were more prevalent, were faced with more extreme cases of budget variance. These were ineffectiveness that ended up having additional budgets leading to the increase of the deficit. To help arrest corruption-related financial risks, they suggested more institutional controls, including real time audit, popular participation in the budget auditing.

**2.3.3 Combined Effects of Corruption on Revenue and Deficits**

A relatively small number of empirical analyses had previously been done on the dual impact corruption has on collecting revenues as well as the budget deficit on the same model and more specifically in the Kenyan setting. Nevertheless, the international studies are a source of good information. As an example, Gupta, Clements, Baldacci and Mulas-Granados (2005) employed a panel data of 50 low-income nations to demonstrate that corruption dilapidates income as well as increases the spending at the same time, thus aggravating the fiscal performance. They presented the case that the anti-corruption reforms should be joined with the public financial management strategies aiming to nullify both ends of the fiscal equation at the same time.

Okello and Ombok (2020) did a comparative analysis of Kenya, Uganda and Tanzania in East Africa, and looked at the impact of the quality of governance on fiscal performance. They got the results that relatively high levels of corruption in Kenya were linked to low revenue efforts and high deficit relative to its neighbors, despite its better institutional frameworks on paper. The paper supported the idea that

enforcement, transparency, and political will are also relevant in bringing the reforms into actual fiscal benefits.

This dual relationship is also supported by few meta-analytic studies. As an example, Saha and Gounder (2022) collected and summarized the findings of 62 studies and arrived at consistently negative dependence of corruption on the fiscal performance, especially in the cases of countries with worse-indicator rule-of-law. The meta-analysis established the conclusion that corruption is likely to affect inefficiencies related to expenditure more than revenue collection, but the two routes may be intertwined.

To summarize, the hypothesis that corruption has adverse effects on revenue collection and fiscal balance is supported by empirical literature to a great extent. The majority of researches share an opinion that corruption diminishes the tax compliance level, enables the mismanagement of the budget and causes constant deficits. Most previous studies have however concentrated on revenue and expenditure as independent developments and as well, few of them have used the country specific integrated model which evaluates the combined impacts on revenue and expenditure. Such an interval confirms the need of the current study, which is expected to produce viable empirical evidence through the analysis of longitudinal national data on the two-sided effect of corruption on the fiscal performance of Kenya.

### 2.4 Identified Gaps in the Literature

Although significant research has been done on the relationship between corruption and fiscal performance, there still exist very essential gaps, which restrict the practical use of the limitations of the same findings especially in the context of Kenya. The reasonableness of the present study is based on the identification of these gaps, and they reveal the rationale to conduct additional research.

To begin with, first weakness of the present studies is that, revenue collection and budget deficit have been discussed as independent, unrelated fiscal consequences, though they are in fact inherently connected. Most of the empirical studies considered in the literature concentrate on the role of corruption in tax compliance and revenue performance (Fjeldstad & Tungodden, 2003; Wawire, 2011), or the role of corruption in determination of public expenditure and deficit (Mauro, 1998; Mwangi & Muturi, 2018), but few studies have concentrated on both of these outcomes with a collective framework. However, the corruption in practice affects either side of the government budget: corrupt activities decrease government revenues and increase inefficient or fraudulent expenditures simultaneously. Hence, there is urgent need to have integrated approach which would measure an overall effect of corruption on revenue mobilization and budget balance.

Secondly, the majority of the literature on the subject applies the cross-country or regional panel data analysis that tends to generalize the results and hinders the characteristics of the national governance systems and the institution processes involved (Gupta et al., 2005; Saha & Gounder, 2022). Robust in their methodology, these studies do not offer a lot of information on how corruption influences fiscal outcome in a country-specific manner. Kenya also has a particular political economy, the structure of decentralization, and fiscal governance systems, which implies that empirical modeling needs to be country-specific and be able to capture the institutional and policy background in which a particular fiscal system is operating.

Third, Kenyan context has to deal with constraints of temporal analysis. Most studies fail to capture the effects of corruption over a long period which is characterized by major policy reformations that include the introduction of the iTax system, adoption of program-based budgeting, adoption of the Public Finance Management Act of 2012, even though there are studies that use time-series data (Wawire, 2011; Ndungu et al., 2020). A ten years analysis like 2013 to 2023 would provide more insight into the interaction between corruption and institutional reforms and whether such policies have cushioned it on fiscal performance.

Besides, the incorporation of moderating factors is inadequate in the existing studies with little modifying factors such as public expenditure inefficiency included to determine how the institutional weaknesses exaggerate or reduce the impact of corruption on fiscal indicators. Inefficient public spending characterized by purchase fraud, budget overruns and wasteful spending of funds on inappropriate ends may make corruption even more detrimental to the fiscal health. However, such moderating effect frequently gets unnoticed or undeveloped in the majority of the empirical models and creates a theoretical-methodological gap in exploring the scale of an impact of corruption.

In light of these identified gaps, the present study is justified in seeking to provide a more comprehensive, Kenya-specific empirical assessment of how corruption influences both revenue collection and budget deficits, particularly over a reform-rich decade (2013–2023). By addressing these gaps, the study will not only contribute to academic knowledge but also inform practical interventions aimed at improving fiscal governance in Kenya.

Moreover, even though the existence of the problem remains widely acknowledged, in Kenya, empirical research has hardly ever associated corruption with the use of particular fiscal tools or indicators including tax heads (e.g., VAT, customs duties), departments or on the expenditure sides of the government. This restricts the level of specificity to which policies can be given based on such studies. This requires granular, evidence-based work that can be used to advise national policy, as well as sector specific approach at the Kenya Revenue Authority (KRA), the National Treasury and the anti-corruption agencies.

Finally, meta-analysis structural equation modeling, scenario forecasting is some of the innovative statistical models and visualization tools as well underutilized in the indicated area of study in Kenya. The inclusion of these approaches would be effective in increasing the validity of the results and giving a better directive to the policymakers. In an attempt to fill this methodology deficit, this work will promote a properly robust analytical framework that will provide more information on the connection between corruption and fiscal performance.

## 3. Research Design

This study employed a quantitative meta-analytical approach. Meta-analysis allows the researcher to synthesize results from multiple existing empirical studies to assess the overall relationship between corruption, budget deficits, and revenue collection in Kenya. As a statistical technique, meta-analysis improves the generalizability and reliability of research findings by aggregating effect sizes from previous studies, enhancing statistical power, and reducing the uncertainty found in individual studies (Lipsey & Wilson, 2001). It is particularly appropriate for this research because it consolidates diverse evidence to provide a comprehensive, evidence-based understanding of how corruption influences Kenya's fiscal outcomes.

### 3.1 Study Area

Although meta-analysis does not require physical data collection from a specific geographical location, this study was centered in Kenya. The focus is on empirical studies published from 2013 to 2023, capturing the post-devolution era during which Kenya adopted several public finance reforms. The research synthesizes studies that investigate corruption and its impact on fiscal performance particularly revenue collection and budget deficit trends in Kenya.

### 3.2 Target Population

The empirical literature that constitutes the target population and quantitative literature which looks at the relationship between corruption and revenue collection or budget deficit in Kenya. These are peer-reviewed journal article, theses, conference and technical reports and working papers. Research works published not more than ten years ago or characterized by providing clear quantitative indicators in the form of correlation coefficients (r), odds ratios (OR), t-values, or other possible statistical measures convertible into effect sizes to form meta-analysis will be in focus.

In order to arrive at a satisfactory analysis, 154 studies were initially sampled from the key words. These studies were selected using pre-determined inclusion criteria. To make the study relevant, it was necessary that the research concentrate on corruption, revenue collection and budget deficit in Kenya. Second, the research was to be carried out within the past decade so as to reveal up to date trends in the corruption and revenue trends. Third, I excluded qualitative research since it would only give statistical information that could be synthesized. Finally, the research was required to be peer-reviewed or involved in institutional research project approved by an institution to qualify academically.

A total of 12 relevant articles were retained for analysis. Of these, 3 articles directly reported the correlation coefficient (**r**), making them suitable for immediate inclusion in the statistical synthesis. 6 articles presented their findings using other statistical measures (e.g., t-values, F-values, or odds ratios),1 article was with $R^2$ was converted as follows $r = \sqrt{R^2}$ other articles which could potentially be converted into **r**. However, father conversions were deliberately avoided in order to preserve the precision and integrity of the original data. The remaining 2 articles did not clearly specify the statistical models or methods used in their analysis, making it difficult to extract or interpret the relevant effect sizes.

### 3.3 Data Collection

#### 3.3.1 Sources of Data

The information that was used in the study was be secondary i.e., digital sources of academic journals, including online databases (Google Scholar, JSTOR, Scopus), institutional repositories (KIPPRA, Central Bank of Kenya, the Office of the Auditor-General), and reports created by Transparency International and the International Monetary Fund (IMF). These sources were a wide range and selection of studies that can be incorporated in the meta-analysis,

**Table 1:** Extraction Table

| Study ID | Author(s) | Year | URL |
|---|---|---|---|
| 1 | Daud (2024-Perception index vs fiscal performance | 2024 | https://ijcsacademia.com/journal/index.php/ajocsacademia/article/view/572?/doi/3 |
| 2 | U4 Report (2021)-Devolution corruption | 2021 | https://www.u4.no/publications/kenya-corruption-and-devolution |
| 3 | World Bank Blog (2010s)-Corruption index vs revenue r | 2010 | https://blogs.worldbank.org/en/africacan/corruption-in-kenya |
| 4 | Tiberius Barasa | 2018 | Kenya-Illicit-Financial-Flows-Report.pdf |
| 5 | Kivoi et al. | 2022 | https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4147348 |
| 7 | Mose | 2021 | https://www.researchgate.net/publication/355041398_Corruption_and_economic_gr |
| 8 | Baum et al | 2017 | https://www.imf.org/-/media/Files/Publications/WP/2017/wp17255.ashx |
| 9 | Nyabuti | 2023 | https://repository.anu.ac.ke/handle/123456789/954?show=full |
| 10 | Kauriuki | 2021 | https://ikesra.kra.go.ke/bitstreams/2f924c19-49f5-418a-b153-e9ea4ce203eb/dov |
| 11 | Muthoka, J. – VAT Compliance (East Nairobi) | 2022 | https://ikesra.kra.go.ke/server/api/core/bitstreams/bb52fb2b-ecd3-4ef2-914d-1f7847 |
| 12 | Kibet | 2013 | https://academicjournals.org/journal/AJBM/article-full-text-pdf/EDCD5E239387 |

**Source: Author, extracted details**

#### 3.3.2 Data Collection Procedure

Based on the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) approach, the process of collecting data will be standardized, transparent, and replicable to include 4 steps identification, screening, eligibility and inclusion. There shall also be rigorous search with specific terms of identifying information using keywords like +corruption AND +revenue-collection AND +budget-deficit AND +fiscal-performance AND +Kenya pdf. Relevant articles were brought into a reference manager and duplicates will be discarded. The screening of the articles was performed on the basis of the titles followed by the abstracts and then the full text to ascertain the appropriateness of inclusion.

### 3.3.3 Inclusion and Exclusion Criteria

On the other hand, the exclusion criteria which ruled out any studies that do not meet the above empirical or methodological thresholds. Conceptual papers, opinion articles, literature reviews, and purely qualitative studies that lack statistical data was excluded from the synthesis. Additionally, studies that are not directly focused on Kenya, or those published before 2013, was also omitted to maintain relevance to the current governance and economic context. Duplicate publications, non-peer-reviewed preprints, and studies that do not clearly define their variables or statistical approaches and sample size was excluded to uphold the credibility and comparability of the synthesized data. By applying these rigorous filters, the study aims to maintain a high level of reliability, validity and generalizability in the final meta-analytic estimates.

### 3.3.4 Instrument for Data Collection

In a bid to ascertain the methodological correctness and relevance of the studies to be employed in this meta-analysis, the studies were be subjected to well-stipulated inclusion and exclusion criteria. The criteria to be adopted in the inclusion will be type of study (empirical studies), quantitative evaluation of the association between corruption and fiscal indicators, e.g., budget deficit or revenue collection in the Kenyan situation. In particular, the research which comprise peer-reviewed journals, academic theses, working papers, and institutional reports, which have been published since 2013 to 2023. No more than those studies that offer statistical measures amenable to quantification, i.e., correlation coefficients (r), t-values, odds ratios (OR) or other measures of effect that can be transformed into a standard unit (such as a common metric) was entered consideration. The period span 2013-2023 has been selected to meet the requirements of the post devolution era in Kenya during which fiscal transparency has been heightened, decentralization enhanced and initiation of reforms on public finance management.

The primary tool that was utilized in the collection and organization of data research was an excel-based data extraction sheet taken into the chosen studies. The sheet will also have columns of the author's name, year of publication, sample size (N), effect size (r, t, OR), corruption variable type, dependent variable (budget deficit or revenue), region covered (in case it is specified) and moderating variables. The added reliability caused by standardization helps in a correct transfer of statistical findings into a shared measure (usually Pearson R).

**Table 2**

| study Id | Author(s) | Year | sample size (N) | Correlation of coefficient ( r) | Conversion | statistical type |
|---|---|---|---|---|---|---|
| 1 | Naftaly | 2021 | 238 | -0.27783 | converted | R squared |
| 2 | Muthoka, | 2022 | 383 | -0.665 | Direct | correlation |
| 3 | Nyabuti | 2022 | 226 | -0.396 | Direct | correlation |
| 4 | Kibet | 2013 | 70 | -0.09766 | Direct | correlation |

Source: Author, Synthesized data

### 3.3.5 Validity Test

To achieve validity, studies will be included only in case they are methodologically correct with well-documented results and corresponding statistically estimated values. The content validity will be done by making sure that every study directly answers at least one of the research questions. Also, sensitivity analysis will be performed to check the strength of the results with the inclusion or exclusion of particular studies.

### 3.4 Data Analysis Procedure

Data was be analyzed with JASP - Jamovi statistical software, to be more precise via the MAJOR (Meta-Analysis) module. To standardize all effect sizes, common metrics which mainly follow Pearson r was used using t-value conversion formula, F-value conversion formula, odds ratios (OR) conversion formula, and Cohen d conversion formula where necessary. Random Effects Model was used as the primary analysis since there are chances of variation among studies. The heterogeneity will be checked by Cochran Q-statistic and $I^2$ and subgroup analysis was examined moderating effects including publication date and data source by a meta-regression analysis. The level of statistical significance will be measured by choosing 95 percent confidence intervals.

### 3.5 Data Presentation

The results were summarized in a form of a combination of forest-plot which illustrates the effect size and confidence interval; funnel-plot which was used to test the presence of publication bias and finally a summary table containing characters of the studies and the resulting figures. Each visual output was supported by narrative descriptions that helped in interpret findings using the Kenyan fiscal management and anti-corruption policy. The key learnings were put in a policy, research, and implementation structure in regards to the governance of money in the public sphere.

### Introduction

This chapter presents the results of the meta-research analysis conducted to explore how corruption impacts budget deficits and revenue collection in Kenya. A total of 12 studies were included based on the criteria outlined in Chapter 3 is summarized in Table 2. Of these, four studies reported correlation coefficients (**r**) were considered. The findings highlight trends in statistical reporting and the representation of effect sizes relevant to the relationship between corruption, public finance deficits, and revenue performance.

## 4. Results

**Table 3:** Correlation coefficient

**Correlation Coefficients (r, N)**
**Random-Effects Model (k = 4)**

| | Estimate | se | Z | p | CI Lower Bound | CI Upper Bound |
|---|---|---|---|---|---|---|
| Intercept | -0.411 | 0.148 | -2.77 | 0.006 | -0.702 | -0.121 |

**Note.** Tau² Estimator: Restricted Maximum-Likelihood

**Heterogeneity Statistics**

| Tau | Tau² (SE) | I² | H² | R² | df | Q | p |
|---|---|---|---|---|---|---|---|
| 0.286 | 0.0818 (SE = 0.072) | 94.46% | 18.034 | . | 3.000 | 57.313 | < .001 |

The analysis was carried out using the Fisher r-to-z transformed correlation coefficient as the outcome measure. A random-effects model was fitted to the data. The amount of heterogeneity (i.e., tau²) was estimated using the restricted maximum-likelihood estimator (Viechtbauer 2005). In addition to the estimate of tau², the Q-test for heterogeneity (Cochran 1954) and the I² statistic are reported. In case any amount of heterogeneity is detected (i.e., tau² > 0, regardless of the results of the Q-test), a prediction interval for the true outcomes is also provided. Studentized residuals and Cook's distances are used to examine whether studies may be outliers and/or influential in the context of the model. Studies with a studentized residual larger than the $100 \times (1 - 0.05/(2 \times k))$th percentile of a standard normal distribution are considered potential outliers (i.e., using a Bonferroni correction with two-sided alpha = 0.05 for k studies included in the meta-analysis). Studies with a Cook's distance larger than the median plus six times the interquartile range of the Cook's distances are considered to be influential. The rank correlation test and the regression test, using the standard error of the observed outcomes as predictor, are used to check for funnel plot asymmetry.

A total of k = 4 studies were included in the analysis. The observed Fisher r-to-z transformed correlation coefficients ranged from −0.8017 to −0.0980, with the majority of estimates being negative (100%). The estimated average Fisher r-to-z transformed correlation coefficient based on the random-effects model was $\hat{\mu} = -0.4115$ (95% CI: −0.7025 to −0.1205). Therefore, the average outcome differed significantly from zero (z = −2.7719, p = 0.0056). According to the Q-test, the true outcomes appear to be heterogeneous (Q(3) = 57.3132, p < 0.0001, tau² = 0.0818, I² = 94.4550%). A 95% prediction interval for the true outcomes is given by −1.0432 to 0.2202. Hence, although the average outcome is estimated to be negative, in some studies the true outcome may in fact be positive. An examination of the studentized residuals revealed that one study (2) had a value larger than ±2.4977 and may be a potential outlier in the context of this model. According to the Cook's distances, none of the studies could be considered to be overly influential. Neither the rank correlation nor the regression test indicated any funnel plot asymmetry (p = 0.7500 and p = 0.0577, respectively).

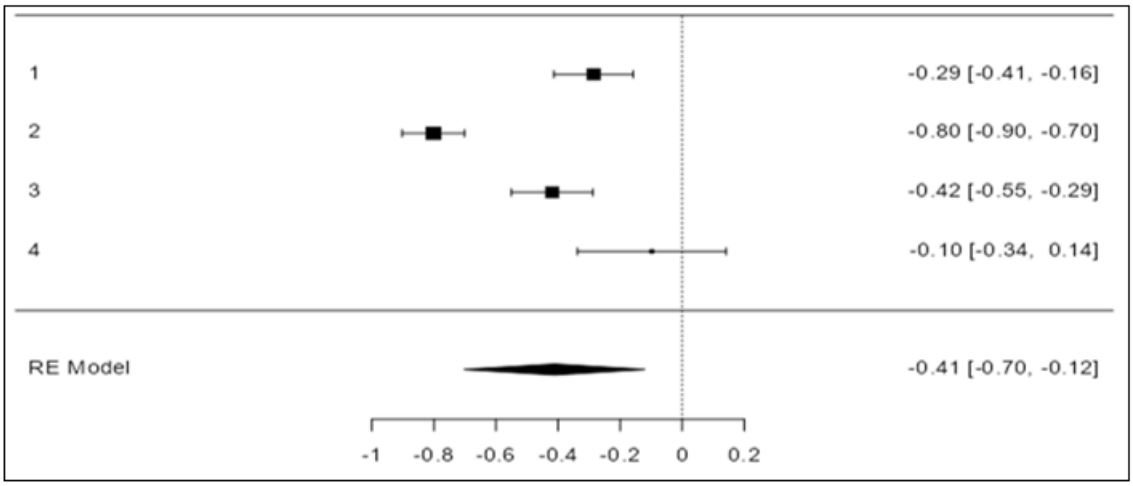
### 4.1 Correlation Coefficient (overall effect)

Fisher r-to-z transformed correlations and a random-effects model were applied in the meta-analysis. The mean effect is estimated at r = 0.41 (Fisher z = 0.4115; 95 CI: 0.1205 to 0.7025) and it is statistically significant (z = 2.7719, p = 0.0056). Substantively, this suggests that there is a moderate negative relationship between corruption and fiscal performance in Kenya: The greater the corruption, the lower the revenue raised, and/or the bigger the budget deficit. Direction of effect predicted All of the included studies exhibit a negative direction of results (observed Fisher z of -0.8017 to -0.0980). Although correlation does not imply causation, the reliability and the strength thereof indicate that corruption has been a significant detriment to fiscal capacity probably through enabling tax evasion, poor compliance, procurement leakages and diminished effectiveness of administration. Due to the macro-fiscal transmission mechanisms at work, a rough estimate of r = -0.41 suggests that practically significant causal effects are present; in this case, such transition between low and high corruption settings would be accompanied by actual leakage in actualized revenues, along with strain against the deficit balance. These conclusions are grounded on the pooled estimate and the confidence bounds your model suggests and are to give a framework to future policy and practical recommendations.

### 4.2 Heterogeneity

Between-study variability is large: 0.0818 (SE = 0.072), I 2 = 94.46%, and Q (3) = 57.31, p <.001. These statistics suggest that much of the dispersion in observed effects is not purely a sampling error but rather a reflection of true heterogeneity across studies e.g., measurement of corruption (perception indices vs. administrative proxies), fiscal outcomes (revenue vs. deficit), data frequency (annual vs. quarterly), and model controls, and time windows. Their 95% prediction interval (-1.0432 to 0.2202) also indicates that, although the means effect is negative, under other circumstances probed in future studies, they are free to assume effects as strongly negative to slightly positive. This heterogeneity justifies a reluctance to generalize the pooled estimate and an incentive to a priori moderators in sensitivity analysis (e.g., type of outcome, definition of corruption, estimation method). Where diagnostics are concerned, one dataset produced a studentized residual that fell above the Bonferroni critical value, indicating the possible presence of an outlier; but Cook distances identified no study as intrinsically too influential, indicating no single estimate that is uniquely influential in driving the mean. On the whole, the data substantially argue in favor of simulating decisions that accommodate variation in true effects and the necessity to subject them to moderator analyses in later rounds.

### 4.3 Forest Plot




**Graph 1:** Forest Plot
Source: Author, JASP statistical software

### 4.4 Forest Plot Interpretation

The forest plot presents the results of individual study estimates (all negative) with the confidence intervals at their estimations and pooled random-effects mean. The left-of-zero placement of the points of the studies is consistent with the narrative outcomes 100 percent in the adverse direction on ranked effects. Larger separation on certain studies indicates smaller sample sizes (or higher within-study variance), and narrower bars indicates tighter estimates. The diamond symbolizing the combined effect has a central point of -0.41 with a spread that does not include the neutral value (p = .006), early resembling the critical total test. The dissemination of single lines is rather high, however, which visualizes the large I 2 statistic and the heterogeneity of effects. The potential outlier identified by the flag is a study with a comparatively extreme negative estimate (in line with studentized residual collision), but the pooled diamond itself is strongly negative an indicator that the overall conclusion is not driven by a single point estimate. Overall, three things are conveyed by strong directionality consistency, statistical significance at the aggregate level, and significant dispersion that needs to be investigated by means of moderators and sensitivity analyses are being indicated in the forest plot.

**Table 4:** Publication Bias
Prediction Bias Assessment

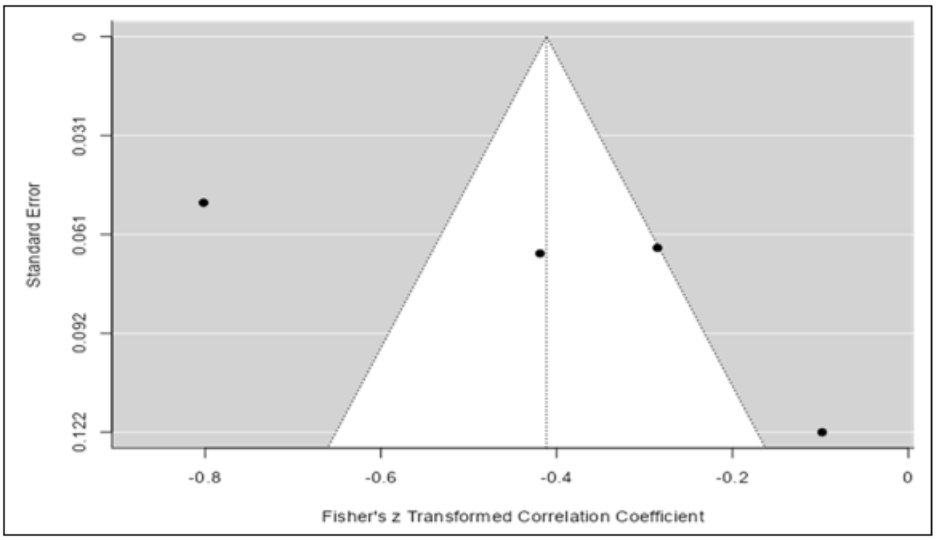
| Test Name | Value | p |
|---|---|---|
| Fail- Safe N | 267.000 | <.001 |
| Begg and Mazumdar Rank Correlation | 0.333 | 0.750 |
| Egger's Regression | 1.898 | 0.058 |
| Trim and Frill Number of Studies | 0.000 | |

Note: Fail Safe N Calculation using the Rosenthal Approach
Source: Author, JASP statistical software

### 4.5 Publication Bias Assessment

Several small-study bias diagnostics present a reprieve-but-inconsistent view. Rosenthal (fail-safe N = 267, p < .001) suggests we would require a very large number of additional pooled-study hydro-negative nulls to cast doubt on the substantial pooled finding favoring the negative relationship. The rank correlation test by Begg and Mazumdar is not significant (tau = 0333 p =0.750), which indicates no monotonicity between the effect sizes and their variants. The regression test by Egger slightly exceeds conventional significance (intercept 1.898, p = 0.058), and this may suggest small-study effects but not reaching the 5% level. Notably, trim-and-fill imputed zero missing studies and therefore the pooled estimate was not modified. Cumulatively, these diagnostics lack good evidence of publication bias, but because k is small (four studies), there are of course inherent limitations in terms of the power and interpretability of those tests. Therefore, even though they do not find any significant statistical evidence of bias, inferences are to be more guarded, and how these diagnostics will be treated when evidence is further accumulated deserves up-update.

### 4.6 Funnel Plot




**Graph 2:** Funnel Plot

Source: Author, JASP statistical software

### 4.7 Funnel Plot Interpretation

The visual funnel plot is used to measure symmetry between the effect size and its standard error. Formal tests of asymmetry were insignificant in your findings (Begg p = 0.750; Egger p = 0.058), and the trim-and-fill method did not add any studies indicating the nonexistence of true asymmetry. Optically, at k = 4, the funnel will appear sparse; tinier sets have the undesirable consequence that the intended inverted-funnel structure requires the existence of a decent distribution of study precisions. Nevertheless, imputed studies and insignificant rank correlation are lacking, which is indicative of non-substantial small-study and selective-reporting bias. The slightly marginally Egger outcome is being cautious: were the small studies reporting more negativity, one might notice the tilt to the left. Although that is not technically conclusive in this case, methodologically it is important to track this tendency as the corpus grows. The funnel evidence, in total, gives no reason to doubt the key finding of a negative correlation between corruption and revenue collection and/or budget balance in Kenya, but accumulation of evidence will further refine inference.

### 4.8 Summary of Findings

In k = 4 studies, a moderate, statistically significant negative relationship between corruption and fiscal performance is suggested by the pooled random-effects estimate (r = -0.41; 95% CI: -0.70 to -0.12). Directional agreement is 100 percent (all negative), which underlines similarity in sign when magnitudes differ. The degree of heterogeneity is high (I 2 - is 94 percent) suggesting that the true effects are different across settings, definitions, and methods. Potential outlier is identified by the studentized residuals but by no study is it overly influential by cook's distance. The prediction interval ranges -1.04--0.22, so, whereas the average treatment effect is negative, there are certain conditions under which weaker or even positive estimates will be obtained it is one more reason to consider moderators (e.g., type of outcomes: revenue vs. deficit; corruption measurement; time point; estimation procedure). There is no indication of significant asymmetry in publication-bias diagnostics (Begg p = 0.750; Egger p = 0.058; trim-and-fill = 0; fail-safe N = 267), although power is low. The preponderance of the evidence leads us to conclude that greater corruption undermines revenue mobilization, and imposes an upward bias on the budget deficit, the scale of which is determined by context.

### 4.9 Limitations of the Study

This is a comprehensive meta-analysis, which, however, is also limited in a number of ways. First, the study is limited by the lack of eligible empirical studies Only 4 full-text documents fitted the inclusion criteria regarding the correlation-based analysis. Such a small sample size has limitations on generalizability of the findings and it could inhibit detection of subtle subgroup effects. Second, the majority of the research was based on secondary data, and the standard errors or confidence intervals were not reported and conversions need to be made, perhaps causing a small estimation error. Third, the breakdown was done in the basis of correlation coefficients (r) which reflect or indicate only association and not causation. In this respect, the findings do not establish the direction and path of causation as despite exposing a high negative correlation between corruption and fiscal outcomes, they do not attempt to establish whether corruption influences fiscal outcomes adversely or vice versa. Fourth, the heterogeneity in the contexts of the studies like study period, sampling source and definition of corruption and revenue could have affected estimates of pooled effect sizes. Fifth, although not at the strong level, publication bias cannot be completely dismissed because of the small number of studies and the fact that unpublished theses or institutional reports that might have some posteriori data were omitted. Finally, this review focused on studies specific to Kenya that were published in 2013-2024, which, on the one hand, provides thematic relevance, but on the other hand, may also exclude valuable regional cases. Nevertheless, the results offer a robust, evidence-based basis on which the fiscal risks of corruption can be viewed and how then a suitable policy response can be developed.

## 5. Summary, Conclusion, and Policy Recommendations

This chapter provides a brief display of the main results of the analytical work carried out as part of the empirical research on corruption influences on budget deficits and revenue collection in Kenya. It performs synthesis of the key findings and arrives at the conclusions regarding the degree of corruption impact on the fiscal results. On the basis of the analysis, the chapter also makes practical policy proposals to curb corruption, increase revenue mobilization, and dent budget deficits. The discussion is based on empirical facts and aims at guiding the policy makers on strategies of making fiscal governance effective in Kenya.

### 5.1 Practical Recommendations

The results in this paper warrant specific and pragmatic measures to counter the negative impacts of corruption on the fiscal performance in Kenya. Specifically, tax collection systems must be automated and computerized to minimize rent-seeking, and underreporting. The transparency can be enhanced by using technology, audit trail can be improved and the face-to-face transactions are minimized which encourages bribery. Second, there is a need to conduct capacity-building in tax enforcement agencies. Education of officers about ethics, audit skills and fiscal enforcement will enhance good practices compliance, as well as the misconduct detectability. Third, process should be put in place to protect whistle blowers and this should be done to ensure that people report corrupt activities in the financial management system of the Government. Anonymous electronic portals or reward-based reporting are some practical tools that can encourage reporting by the population. As well, awareness campaigns that highlight the cost of corruption to development could help change the social norms and influence the citizenry and business communities to pressure their leaders to govern in a more honest way. Lastly, the role of partnership between government, civil society and development partners can across the monitoring mechanism such as fiscal transparency scorecard and open budgeting platforms. With such actions maintained and with enough financing, government revenue losses can be curbed and government funds put into development priorities, thereby promoting budget credibility and reducing budget deficits.

### 5.2 Policy Recommendations

On this basis, concrete and evidence-based policy changes must be taken that will enable corruption prevention in Kenya with regard to its financial repercussions. On the one hand, the anti-corruption audit procedures must be part and parcel of the budgeting and tax collection process by the government. By having such audits incorporated in annual financial reports, accountability would be enhanced and the illicit diversion of public funds prevented. Secondly, the Ethics and Anti-Corruption Commission (EACC) deserve to be strengthened, and this can be done by granting the institution independence and capacity through proper funding, legal empowerment and timely access to data on fiscal matters. Increasing legal mobilization and enforcement capabilities such as accelerated prosecution of corruption cases involving financial affairs of the government, would help to discourage the occurrence of future acts. Third, the process of a public procurement needs to be reworked so that they are competitive and contain disclosure of information about the contract in real-time and are subject to independent monitoring. Procurement is one of the areas with significant instances of leakages in the budget, and an open procurement will present significant cost-savings. Moreover, tax policy would need to be reformed to limit discretionary exemptions, and socialize the compliance process that does not needless morasses but leads to rent-seeking. Finally, corruption monitoring models ought to be integrative in the fiscal decentralization policies with local governments having greater control to handle large revenue. Corruption on a county level helps to create deficits nationwide and undermines the tax morale. National Treasury together with county governments need to adopt models of performance-based funding which act as an encouragement to fiscal responsibility. Information on Kenya has pointed out that through balancing anti-corruption initiatives on reforms in the sector of public finance, reduction of budget deficits, increased mobilization of domestic financing and even investor confidence in the financial system can be achieved.

### 5.3 Suggestions for Future Research

Although the present meta-analysis provided strong results, some directions of further research can be noted. Future studies must broaden the geographical and sectorial data collection area to include disaggregated corruption measures such as bribery in customs, tax evasion schemes and procurement fraud. These subtypes may be examined to see which types of corruption affect fiscal health adversely in the worst ways. Besides, longitudinal panel data (comparing variations in revenue collection and budget deficits during different periods before and after the implementation of anti-corruption mechanisms) would provide stronger evidence about the causation. The second important area that should be pursued is the role of institutional quality and political accountability in containing the corruption-fiscal outcome connection. Comparative literature with adjacent East Africa countries with a similar system of administration would also be instrumental in helping determine the extent to which the Kenya experience is generalizable. Moreover, key informant interviews at the Kenya Revenue Authority (KRA), National Treasury and anti-corruption agencies are also likely to contribute to knowledge on structural loopholes and governance bottlenecks. Lastly, with the emergence of digital government platforms, future authors are advised to determine the impact of e-governance and GovTech interventions in real-time on corruption rates, and budget transparency. Such studies would assist in more specific, contextual and evidence-based fiscal governance reforms.

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