

Corruption and Economic Growth in Kenya: A County-level Analysis

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Abstract

While there's an outsized consensus within the empirical literature on the negative impact of corruption on the economic process, some studies still argue that corruption could also be economically justified. There is, however, little empirical evidence to validate the impact of corruption on economic growth within the devolved units. The effect of the corruption rate on economic activities is examined using ordinary least squares regression analysis and Kenya county-level data. The results of this study revealed that there exists a negative independent relationship between corruption and county per-capita income growth. Arising from the study findings, this study submits that the county authorities and policymakers must put in situ policies that may eradicate the grounds for bribe-taking in counties to stimulate economic growth.

Keywords: corruption, economic growth, fiscal decentralization, devolution, macroeconomic

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1 Introduction

The recent global initiative towards federalized spending has been gradually justified on the idea that decentralization of resources to sub national governments level are likely to deliver greater efficiency within the delivery of public goods and services and reduce corruption index, and consequently stimulate economic activities at devolved units (Martinez-Vasquez & McNab, 2006; Mutie, 2014). For several nations including Kenya, the devolved system of governance refers to devolution. Essentially devolution is one kind of fiscal decentralization. However, devolution is more extensive and includes the transfer of economic, social, and political powers from central government to devolved units (World Bank, 2016).

Fiscal decentralization involves mainly delegating expenditure functions, revenue sources, and administrative functions to devolved units. The notion behind the fiscal delegation is inspiring efficiency and effectiveness within the supply and provision of local public goods and services, thus improving and inspiring the mechanisms of economic expansion within the nation (Mitchell, 2005). Consistent with advocates of devolution, a centralized system of presidency isn't able to deliver local public services efficiently and effectively compared to delegating functions to the lower tier of state (Krugman, 1994). In contrast, other scholarly literature differs from the concept that fiscal devolution results in higher efficiency and reduced cases of corruption (Nijenhuis, 2003). Such conditions involve where there are high chances for corruption at the lower-tier level of state, where it's problematic to assign powers during a non-overlapping way, economies of scale and scope exist, conditional grants are used, insubordination by the national government is rampant, and where devolved government unit operate in environments of 'soft budget constraints' (Nijenhuis, 2003).

In 2010, Kenya promulgated a replacement constitution that reconfigured the balance of political and economic power by transferring authority or power and economic resources from the state to the 47 county governments led by 47 elected governors (GoK, 2010; IEA, 2010). County authorities and national governments are mandated by the constitution to better a working formula in terms of power and responsibilities. However, some have encountered economic, political, bribe taking, and administrative problems within the provision of basic public goods and services to the county citizens (GoK, 2014). The elemental objective of devolution is to jumpstart economic advancement, eliminate corruption, encourage efficiency, eradicate poverty and reduce the economic discrepancy. However, within the face of skyrocketing devolved budget, local economic activity has stagnated, the quantity of poor people increased, corruption has been devolved, combined with widening economic imbalances in devolved units.

1.1 Corruption and Devolution

Rodden (2004) observes that when the central government decentralizes resources to the lower tier governments, these resources are then allocated to individuals in line with their preferences. Because of corruption, allocated county funds and resources might not necessarily reach their intended recipients or be used for the envisioned purpose and thus impeding county economic process. There are several mechanisms, through which corruption hampers county economic accomplishment. They include reduced domestic investment, exaggerated government spending, a distorted budget that favors allocation in less efficient public programs with more scope of corruption and manipulation while ignoring human capital and physical capital programs (Murphy et al., 1991).

In addition to the backlog of cases, corruption incidence has contributed to a scarcity of confidence within

the Judiciary by the population. Corruption undermines local economic activities by distorting the rule of law and weakening institutional foundations and reforms on which county economic growth depends (Murphy et al., 1991; Rodden, 2004; Choe et al., 2013; Hanousek & Kochanova, 2015). The indirect influence of county bribe taking incidence on economic process is transmitted via its negative impact on local private business, human capital budget, and physical infrastructure spending. Corruption tends to neglect the education sector and health services in favor of county sectors where corruption isn't easily detected. It also tends to extend the budget size but also reduces the productivity of local investment and that of the state (Choe et al., 2013).

1.2 Corruption as an Obstacle and Aid to Economic Growth

Most researchers indicate that corruption can have a detrimental impact on overall economic expansion through weakening governance environment, eroding efficiency and trust in state and county institutions, and ultimately undermining sustainable development and therefore the rule of law (M'áon & Weill, 2010). While most economists agree that corruption slows economic process and development, some scholars still argue that corruption could also be economically justified because it provides economic opportunities to bypass inefficient policies and regulations and bureaucracy, and allows the private sector to correct authorities failures and inefficiency (M'áon & Weill, 2010; M'áendez & Sepúlveda, 2006). As such, it could potentially accelerate county growth by removing bureaucratic barriers to entry, red tape, and lowering private sectors' transaction costs when trying to accommodate excessive regulations and laws (M'áon & Sekkat, 2005).

Some studies have also argued that the negative impact of corruption on economic growth is also context-specific and related to elements like the county's legal and institutional framework, quality of governance, social and economic factors, and political regime (M'áon & Weill, 2010; M'áendez & Sepúlveda, 2006).

1.3 Macroeconomic Growth Factors

Economic literature identifies macroeconomic factors that affect local economic expansion and that they include inflation, deficits of the budget, private investment, tax burdens, and government consumption. Also, foreign direct investment, openness to trade, political environment (crime rate and political instability), and institutional framework (corruption and property rights) are other variables that affect the expansion of the local economy (Romer, 2001; Chiou-Wei et al., 2010; Gisore, 2017). The subsequent Table 1 shows the assorted Macroeconomic indicators for Kenya over the years.

Table 1: Macroeconomic Indicators for Kenyan Counties

YEAR	2012	2013	2014	2015	2016	2017
Total Real GDP growth rate - %	4.6	5.9	5.4	5.7	5.9	4.9
Total County Expenditure-Billions KES	9.8	193.4	229.3	258	295.3	390.3
Total County Total Revenue-Billions	33.9	241	337	367	370	401.6
Corruption- Average bribe –KES	3251	4601	3789	5649	7081	5059
Human capital- (Secondary)-(million)	1.9	2.1	2.3	2.6	2.7	2.8
Crime rate reported	77852	71832	69376	72490	76986	77992
Electricity consumption (MW)	1302	1354	1468	1512	1586	1656
Total County Employment (000)	37.7	94.7	99.6	110.5	118.9	132.6

Source: GoK (2018).

From Table 1, since the introduction of the devolved governance system, Kenya has experienced economic growth from 4.6 in 2012 to five.9 in 2016. However, in 2017 GDP growth for Kenya caught up because of drought and post-election violence experienced (World Bank, 2016; GoK, 2019). Table 1 reveals that county expenditure and revenue are increasing. From Table 1, corruption cases increase still remains an impediment to the economic process of counties through rent-seeking and a rise of transaction costs (Murphy et al., 1991) that include it. The overall view held about corruption is that devolution can decrease bribe demand and thus accelerate economic activities but may contribute to the dominance of counties by small elite groups (Rodden, 2004; Choe et al., 2013).

Much of the causes of economic development disparities over time are inconclusive. Particularly, the channels through which corruption influences county economic process are yet to be investigated in Kenya. Therefore, there's a necessity for a country-specific study. Specifically, understanding the role of corruption on economic process in counties is crucial for recommendations.

1.4 Objective of the Study

The objective of this study was to analyse the effect of corruption on county economic growth in Kenya during the period 2013-2017.

2 Literature Review

2.1 Theories on Fiscal Devolution

This study is grounded on the theories of fiscal devolution that scrutinize the mechanisms through which devolution can stimulate economic process. The idea on fiscal devolution originates from Musgrave's ideas about the role of the state (Musgrave, 1969). Musgrave (1969) listed three main functions of a state. They include the upkeep of a stable economy, proper allocation of resources, and fair distribution of income. The role of the state in maximizing welfare through the assembly and allocation of public goods and services should be assigned to the lower-tier government following the principle of efficiency criteria which articulate that public goods are better provided by the lower level of government (Rodden, 2004). Expediently and effectiveness cases of corruption are reduced. The national government is additionally expected to play a secondary role and step in mainly to fill gaps. The national government is assigned the role of providing defense, national security, and welfare services which cannot be left within the hands of the private sector (Ntibagirirwa, 2014). The lower tier governments are accountable for the assembly and provision of public services whose is within their jurisdiction. This theory applies to the present structure of governance in Kenya and specifically the separation of responsibilities between the county and national government. In Kenya, counties are mandated to gather tax and are assigned roles publicly service delivery geared towards controlling corruption and increasing efficiency and effectiveness in service delivery (IEA, 2010; Ntibagirirwa, 2014; Ganaie et al., 2018).

According to the neoclassical economic growth hypothesis, economic process hinges on the supply of capital and labor. That is, the availability of capital and labor is that the accelerator of economic activities at sub-national and national levels (Mankiw et al., 1992). From neoclassical growth theory factors of production will move across lower-tier government until returns to factors of production meet. That's labor and capital will stick with it moving until equalization of county factor of production is attained. Consistent with the Solow growth model (Solow, 1956), fiscal decentralization will be related to a various level of efficiency in administration and fewer corruption cases than a unified system, producing a range level of technological progress and value of productivity. Consequently, with the mechanisms of fiscal federalism, states will observe disparity in their economic progress (Solow, 1956; Mankiw et al., 1992).

2.2 Conceptual Framework

Figure 1 conceptualizes the theoretical framework to the target of this study, the hypotheses, and the way the procedures of knowledge estimation relate to the matter of this study. During this context, corruption diminishes economic outcomes in counties. This can be attributed to a rise in transaction cost and uncertainty, rent-seeking, ineffective and inefficient investments, and misallocation of production factors that include corruption. Figure 1 provides the conceptual framework of this research.

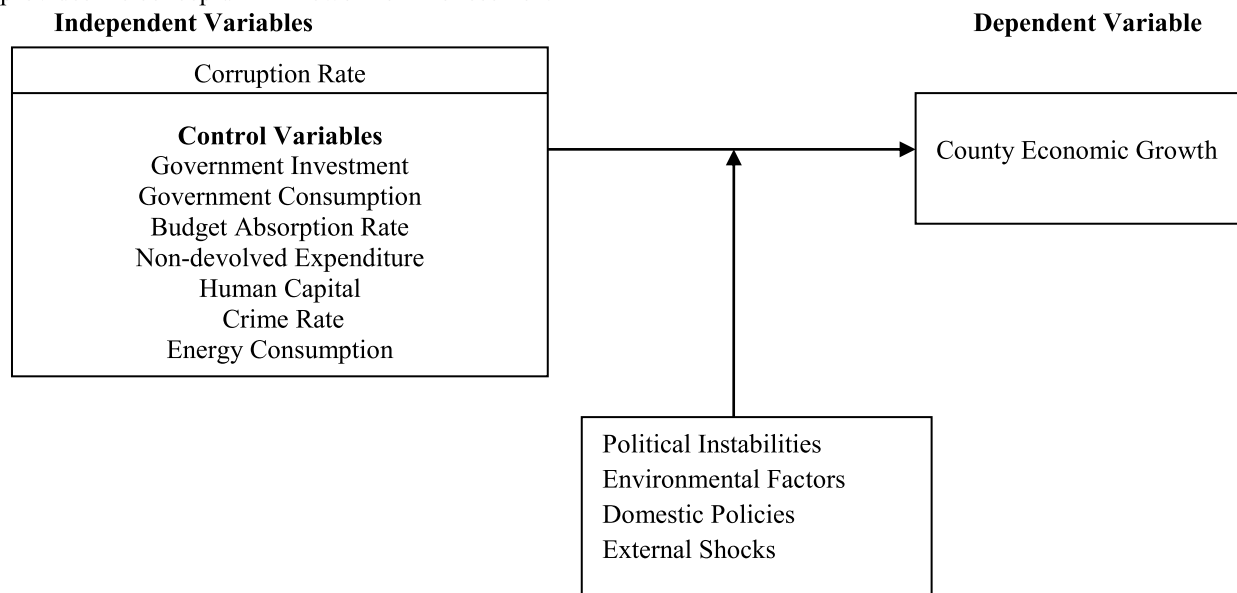


Figure 1: Conceptual Framework of this Study

3 Materials and Methods

3.1 Research Design

This study applied a quantitative research design to investigate the effect of corruption on economic activities in Kenyan counties. the chosen research design is suitable to the study because it captures the trends of corruption and its effects on county economic process in Kenya. This was applied within the period 2013 - 2017 using

annual series secondary data for 47 counties and panel ordinary method of least squares (OLS) technique, leading to 235 county-year observations. Panel data approach permitted control for unobserved county government heterogeneity.

3.2 Study Area

This study was carried in Kenya. Kenya is found within the continent of Africa. Kenya lies across the equator and is found on the eastern coast a part of Africa. Maps of the globe (Map of the World, 2020) indicate that Kenya's latitude and longitude lie between 0.0236° S and 37.9062° E. Kenya is among the foremost corrupted nations within the world. In 2017, Kenya ranked 143 out of 180 countries on Transparency International's (TI) corruption index (TI, 2017). High corruption levels permeating every level of Kenya's national and county economy is hindering economic development and endangering democracy. Republic of Kenya (RoK) is that the national government of Kenya composed of 47 counties, each county with its own semi-autonomous government headed by an elected governor. This study was disbursed in 47 Kenyan counties. This is often because with devolution its expected corruption index should reduce for Kenya (GoK, 2018; OCOB, 2019; Gisore, 2021). Figure 2 shows the map of 47 devolved units (47 counties) in Kenya covered by the study.



Figure 2: Map showing the 47 Counties in Kenya covered by the Study.

Source: Map of the World (2020).

3.3 Data Type and Sources

This study employed secondary panel data set of 47 counties in Kenya. Secondary panel data was preferred

during this study because it's readily available, cheaper, and simply accessible (Kothari, 2004). This study utilized annual data from Statistical abstracts, Economic surveys, County Budget Implementation Review reports, and Ethics and Anti-Corruption Commission (EACC) reports. Secondary sources generated quantitative data. Data collection schedules were accustomed to collect the panel data set for this study. The collected panel data was entered within the datasheet where cleaning was meted out correctly to verify reliability and validity.

3.4 Econometric Model Specification

Building on Mutie (2014) and Mose *et al.* (2019), a simple econometric growth model in which corruption rate is an explanatory variable was formulated and presented as:

$$\ln Y_{i,t} = \beta \ln X_{i,t-1} + \gamma \ln C_{i,t-1} + \mu_i + v_t + \varepsilon_{i,t} \quad (1)$$

Where, $\ln Y_{i,t}$ - the dependent variable – real county economic growth

$\ln X_{i,t-1}$ - set of explanatory variables

$\ln C_{i,t-1}$ - the corruption rate variable

β and γ - are parameters to be estimated

μ_i - country fixed effects v_t - time fixed effects $\varepsilon_{i,t}$ - the error term

and the subscripts i and t represent county and time period respectively.

Thus, panel model to be estimated is specified in logarithm form as:

$$y = f(\text{rg, cg, ng, ag, hc, cr, tc, ec}),$$

$$\begin{aligned} \ln y_{i,t} = & \beta_0 + \beta_1 \ln \text{rg}_{i,t} + \beta_2 \ln \text{cg}_{i,t} + \beta_3 \ln \text{ng}_{i,t} + \beta_4 \ln \text{ag}_{i,t} + \beta_5 \ln \text{hc}_{i,t} + \beta_6 \ln \text{cr}_{i,t} \\ & + \beta_7 \ln \text{tc}_{i,t} + \beta_8 \ln \text{ec}_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (2)$$

Where, $\ln y_{i,t}$ - is a measure for county economic growth, which is real per capita GCP growth.

$\ln \text{rg}_{i,t}$ - is the county recurrent spending as a share of GCP to indicate government consumption at time t in county i .

$\ln \text{cg}_{i,t}$ - is the county capital expenditure as a share of GCP to characterize government investment (gross fixed capital formation).

$\ln \text{ag}_{i,t}$ - is the ratio of actual county spending out of the targeted budgeted spending to represent budget absorption rate (a measure of efficiency).

$\ln \text{hc}_{i,t}$ - is the overall school enrolment (Primary and Secondary) to characterize the stock of human capital.

$\ln \text{cr}_{i,t}$ - is the average bribe by county in Kenyan Shillings (KES) to signify corruption rate.

$\ln \text{tc}_{i,t}$ - is the amount of crime reported to the police service by county to characterize the total crime rate in counties .

$\ln \text{ec}_{i,t}$ - is the amount of electricity consumption per household in Kilowatts to characterize energy consumption.

$\varepsilon_{i,t}$ - the error term

3.5 Panel Unit Root Test

The panel unit root test was employed to test for the presence of non-stationary within the panel regression model to scale back the possibilities of spurious results (Harris–Tzavalis, 1999; Baltagi, 2008). This study adopted Harris–Tzavalis (1999) approach to verify the presence of unit root. These tests provide heterogeneous serially correlated errors and are suitable for data sets with a little number of panels like during this study (Baltagi, 2008). The Harris–Tzavalis (HT) panel unit root test is specified as follows:

$$\Delta X_{i,t} = \alpha_i + \beta_i X_{i,t-1} + \sum_{j=1}^k \gamma_{i,j} \Delta X_{i,t-j} + \varepsilon_{i,t} \quad (3)$$

Where Δ is first difference operator, $X_{i,t}$ is dependent variable, $\varepsilon_{i,t}$ is the white-noise disturbance with a variance σ^2 of $1, \dots, N$ indexes sample (devolved units) and $1, \dots, T$ indexes time (year).

3.6 Panel Data Analysis

Descriptive and inferential estimation was applied accordingly. The Panel data were estimated using the ordinary method of least squares (OLS) estimation technique. Hausman's (1978) test was applied to support the appliance of the Fixed or Random effect model. Fixed effect explores the association between predictor and outcome variables within an entity (county, person, company, etc). A bonus of random effects model is that, unlike the fixed effects model, the variation across entities is assumed to be random and uncorrelated with the predictor or independent variables included within the model.

3.7 Post Estimation Panel Diagnostic Tests

The panel estimation findings are usually biased, inconsistent, and inefficient if econometric problems such as heteroscedasticity, serial correlation, model misspecification, and correlation of error term occur in the panel regression model. Therefore, panel diagnostic examination is significant to ensure the regression model is free from standard econometric problems.

4 Result and Discussion

4.1 Panel Unit Root Tests

Harris and Tzavalis' (1999) panel unit root test was applied at the level and at the first difference and result reported in Table 2.

Table 2 Results of the Panel Unit Root Tests Using HT

Variable	Statistic	Z	P-Value	Variable	Statistic	Z	P-Value	Order of I
$\ln y$	0.5352	0.495	0.6896	$\Delta \ln y$	-0.676	-12.8***	0.0000	I(1)
$\ln cg$	0.1754	-4.6***	0.0000					I(0)
$\ln rg$	0.1627	-4.8***	0.0000					I(0)
$\ln ng$	0.4469	-0.747	0.2276	$\Delta \ln ng$	-0.094	-5.9***	0.0000	I(1)
$\ln ag$	0.1697	-4.7***	0.0000					I(0)
$\ln cr$	-0.3738	-12.3***	0.0000					I(0)
$\ln ec$	0.1999	-4.2***	0.0000					I(0)
$\ln hc$	0.6827	-2.570	0.9949	$\Delta \ln hc$	-0.458	-10.2***	0.0000	I(1)
$\ln tc$	0.2110	-4.1***	0.0000					I(0)

Notes: The null hypothesis is that the series is non-stationary or the series has a unit root. Indicates *** 1% significance level, ** 5% significance level and *10% significance level, Δ element indicates that the first difference of the variable was take, order of I-integration.

The results in Table 2 indicate that all the target variables are stationary at their level except county growth, human capital, and non-devolved expenditure at a 5 percent level of significance. But, they become stationary after the first difference implying that the variables are integrated of order one, I (1).

4.2 Panel Hausman Tests

From the Hausman test result, the p-value is bigger than 0.05(0.78) which implies that the difference isn't statistically significant and then the null hypothesis of the well-liked model being a random-effects model wasn't rejected. Therefore the random effects regression model was used to analyze the connection between the dependent variable and the independent variables and therefore the result's represented as follows. The rationale behind random effects model is that, unlike the fixed effects model, the variation across entities is assumed to be random and uncorrelated with the independent elements included within the regression of y on x.

4.3 Regression Results

Table 3 presents the random regression result on the effect of corruption (*ln cr*) on county economic growth.

Table 3 Random Regression Results

Variable	Coefficient	Standard error	t- Statistics	P-value
<i>ln rg</i>	0.013008***	0.004668	2.786259	0.0058
<i>ln cg</i>	0.002165	0.002077	1.042565	0.2983
<i>ln ag</i>	0.037636**	0.014499	2.595739	0.0101
<i>ln ng</i>	0.203094***	0.016369	12.40714	0.0000
<i>ln ec</i>	0.169288***	0.020772	8.150027	0.0000
<i>ln tc</i>	-0.161680**	0.071938	-2.247493	0.0256
<i>ln hc</i>	0.560784***	0.049977	11.22084	0.0000
<i>ln cr</i>	-0.005576**	0.002602	-2.142438	0.0332
<i>Cons</i>	1.056532***	0.248707	4.248104	0.0000
LM Test	F(2,213) = 0.76965		Prob > F = 0.4645	
Breusch - Pagan Test	F(17,214) = 10.04***		Prob > F = 0.0000	
Pesaran CD	(z) = -0.48647		Pr = 0.6266	
Ramsey-Reset Test	F(1,214) = 0.662835		Pr = 0.4165	
Goodness of Fit Test	F statistics = 95.59***		P-value(F) = 0.0000	
	R ² = 0.771892		Adjusted R ² = 0.763818	

Notes: *** indicates significant at 1 per cent, ** indicates significant at 5 per cent, * indicates significant at 10 per cent.

Corruption rate is negative and statistically significant at a 5 percent level within the counties. The empirical result indicates that a 1 percent increase in county corruption rate will cause a 0.006 percent decline in county economic process. Thus, corruption is in a position to obstruct economic expansion by distorting other macroeconomic factors in devolved units (Hanousek & Kochanova, 2015). County corruption incidence may end up in resource misallocation when decisions on how public funds are going to be invested, or which private sector businesses to be approved, are made by a corrupt county government authority (Choe et al., 2013). As an example, Rodden (2004) observes that when the central government decentralizes resources to the lower tier governments, these resources are then allocated to individuals per their preferences. Thanks to corruption, allocated county budgets might not necessarily reach their intended recipients or be used for the envisioned purpose and thus impeding county economic process (Murphy et al., 1991). Most studies (Nobuo et al., 2005; Choe et al., 2013) argue that corruption slows local economic process. This is often attributed to ineffective and inefficient private investment, rent-seeking activities, high transaction cost, and misallocation of domestic factors of production (Murphy et al., 1991; Nobuo et al., 2005; Choe et al., 2013).

In contrast, per Mon and Weill (2010) and Nguyen et al. (2017) corruption incorporates a beneficial effect on output growth through reducing barriers from bureaucracy and lack of transparency of the judicature and, hence, increases the efficiency of an area economy by removing obstacles to personal sector investment and increasing economic activities in devolved units. Mo (2001) and Hanousek and Kocenda (2011) identified an ambiguous relationship between the study variables. For example, Hanousek and Kocenda (2011) explained that the effect (positive or negative) of corruption on private sector expansion and native economic process entirely depends on the political regime and institution in situ.

Regarding the control variables, budget absorption rate, government expenditure, human capital, energy demands were positively significant concerning income per capita growth. The positive may be attributed to the flexibility of the above macroeconomics variables to influence production function positively as production inputs (Solow, 1956). However, the speed of crime harms per capita income growth as a result of reduced local investment activities.

The estimated coefficient of determination shows that the regressors jointly explain 76 percent of the variation within the dependent variable which implies it fits the information well. This result's supported by the F-statistics which shows that it's statistical significance at 1 percent. Further, the panel regression function passed all panel diagnostic tests.

5 Conclusion and Recommendations

5.1 Conclusion

Corruption is negative concerning economic activities within the 47 counties. Corruption can obstruct local economic activities through reduced domestic investment, distorted allocation of budget aloof from human capital, and physical capital development in counties. Further, it provides opportunities towards less-efficient public projects that provide more possibility for manipulation and bribe-taking opportunities in counties. It also tends to extend the budget size but also slows overall productivity in local infrastructure investment.

5.2 Recommendations

It is highly recommended that the county government should strengthen strategies and policies for fighting corruption in county public offices. This study recommends a high degree of accountability and transparency at different local county sectors to stop channeling of devolved funds to ghost public infrastructure projects and sectors by county officials. The national assembly has to change the prevailing laws to permit the transmission of Controller of Budget and Auditor-General's reports on to the Directorate of Criminal Investigations (DCI) and Ethics and Anti-Corruption Commission (EACC) for timely investigations, and eventual prosecutions by the Director of Public Prosecution (DPP) office to tame mounting corruption within the 47 devolved units. Further, there's a desire for national and sub-national governments to extend their funding of anti-corruption agencies like the Office of the Controller of Budget, office of the Auditor-General, EACC, DCI, and DPP to identify, arrest and penalize people who divert and embezzle the county's public resources. Furthermore, the education systems can be reformed to combat corruption by including anti-corruption courses within the recently introduced Competency-Based Curriculum (CBC).

5.3 Limitations and Directions for Future Research

For a close analysis of the role of corruption on economic growth, future studies should consider investigating the determinants of corruption in Kenyan counties.

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