



# WORKING PAPER SERIES

222, 2022

## **Democracy and Terrorism in Africa**

**Chimere O. Iheonu**

Centre for the Study of the Economies of Africa, Abuja, Nigeria

E-mail: [iheonuchimere@yahoo.com](mailto:iheonuchimere@yahoo.com)

**Simplice A. Asongu**

African Governance and Development Institute, Cameroon

E-mail: [asongusimplice@yahoo.com](mailto:asongusimplice@yahoo.com)

**Shedrach A. Agbutun**

Department of Economics, University of Nigeria, Nsukka, Nigeria

E-mail: [adzuagbutun@gmail.com](mailto:adzuagbutun@gmail.com)



**DEMOCRACY  
AND  
TERRORISM**

**Abstract**

This study adds to the body of existing literature on the relationship between democracy and terrorism by investigating the impact of democracy on terrorism in 26 African countries. The study utilises a robust measure of democracy known as the varieties of democracy index which has been observed in literature to be more superior to conventional measures of democracy.

A composite index of terrorism was derived from the number of terrorism incidents, the number of terrorist fatalities, and the number of terrorist injuries utilising the principal component analysis. The study utilises a Fixed Effects regression with Driscoll and Kraay standard errors and account for simultaneity utilising the first lags of the regressors as instruments.

The result reveals an inverted U-shaped relationship between democracy and terrorism in the selected African countries. In particular, early stages of democracy are associated with higher levels of terrorism while later stages of democracy are associated with lower levels of terrorism. The study provides recommendations based on these findings.

**Keywords:** Democracy; Terrorism; Africa; Instrumental Variable; Fixed Effects Model

## 1. Introduction

The study is motivated by two main factors, namely: the growing importance of terrorism in Africa and a gap in the existing literature on fighting terrorism in Africa. These two points are put in more perspective in the paragraphs that follow.

On the first point, in Africa, the rate of terrorism has continued to increase significantly over the last decade. Statistics from the Global Terrorism Database, GTD (2019) which take into account factors such as fatalities, number of terror attacks, extent of property damage and injuries caused by terrorism show that, of the 10 countries most affected by terrorism, three countries are from Africa, namely: the Democratic Republic of Congo, Somalia, and Nigeria. Moreover, other countries such as Mozambique and Mali witnessed increased levels of terrorist activities within the same period. According to Ritchie, Hasell and Roser (2019), the global rate of deaths from terrorism increased significantly from about 8,000 to 44,000 between the period 2010 and 2014, with Africa among the top three regions (Middle East and South Asia being the top-two, respectively) and accounting for 95% of these global deaths.

Albuquerque (2017) note that Africa is gradually taking the center in terms of terrorism especially Islamic terrorism, with countries most affected in the region being Nigeria, Somalia, Egypt, Sudan and Libya especially between 2005 to 2015. Most Organizations linked with acts of terrorism in the continent include the Boko Haram, the Islamic State of West Africa, the Lord's Resistance Army (LRA), al-Shabaab, Janjaweed, al-Qaeda in the Islamic Maghreb (AQIM), National Union for the Total Independence of Angola (UNITA), Salafist Group for Preaching and Fighting (GSPC), Armed Islamic Group (GIA), and Allied Democratic Forces (ADF), accounting for about 70% of these incidences of terrorism (Albuquerque, 2017).

Investigating the concern of terrorism is important for both scholars and policy makers because terrorism affects all spheres of human endeavours. For instance, terrorism is likely to lead to instability in governance (Asongu & Nwachukwu, 2017), as states affected by terrorism activities are unlikely to have consistency in terms of policy implementation as they are always forced to respond abruptly during terror strikes. These terror attacks or activities cause and spread fear since the underlying violence is largely directed, unexpectedly, against innocent individuals (who become victims), which in turn pressurizes third parties such as governments and their security architectures to change/improve their policies (United Nations Office on Drugs and Crime, UNODC, 2018). Economically, Bruck, Schneider and Karaisl (2007), and Cinar (2017) show that terrorism has devastating economic effects ranging from direct effects such as costs that arise from physical destruction, to loss of domestic and foreign investments. According to Chen and Siems (2004), the financial market is also negatively affected by terrorism. Furthermore, Hussain and Sarma (2016) note that terrorist events have a lingering effect on the mental, psychological and even physical health of the victims even after many years, which hampers their social status and interaction within the society.

On second motivational point pertaining to the extant literature, various factors have been observed to influence the level of terrorism activities in Africa. A study by Okafor and Piesse (2017) observed that unemployment, in particular, youth unemployment and military spending are factors that propel terrorism in Africa. Piazza (2007) also attributed population and ethno-religious diversity as factors that aid terrorist activities. However, one particular factor which may likely influence terrorism in Africa but has not been given considerable attention is democracy. The integration of democracy in Africa has continued to solidify as nations in the continent progressively adopt democratic practices. Accordingly, majority of the countries in the continent are improving on their democratic standards as the African continent continues to integrate with the rest of the world, particularly, the Western world. Whether democracy propels or retards terrorism is still much of an argument in the policy and scholarly circles. According to Large and Sisk (2006), the basic understanding of democracy is in its importance as an instrument for managing and resolving conflicts in non-violent ways through mechanisms such as electoral systems, power sharing, checks and balances, institutional design, the rule of law, political rights, and other mechanisms put in place for the representation and participation of the citizens. However, Chenoweth (2013) outlines two arguments that link democracy to terrorism. On one hand, democracy can reduce the level of terrorism in a society through the provision of avenues for the articulation of interest among citizens as well as providing the platform for peaceful conflict resolution. On the other hand, democracy can aid terrorism as a result of political and civil liberty that come with democracy which increases the freedom of association and movement and hence, provides the platform for terror groups to take root in societies and act against their government or foreign governments. Also, many terrorist organisations in Africa are religious-inclined and oppose the doctrines of Western democracy that are the bases of government. Freeman (2008) reveals that democracy threatens Islamic culture and identity; a religion that is practiced by a great proportion of the African population. Sandler (1995) also observed that democracies appear to suffer from terrorism when taking into account the number of terrorism incidents. According to Eyerman (1998), democracy aids terrorism by reducing its marginal cost to the perpetrators via the freedom of association, press freedom, protection of civil liberties, rights to due process and the freedom of movement.

Two main shortcomings are apparent from studies in the underlying literature, notably: (i) the concern of endogeneity, especially as it pertains to addressing the concern of simultaneity, is not adequately addressed. This study uses an instrumental variable approach to address such a shortcoming. (ii) In spite of the growing role of terrorism on Africa, the literature has not adequately engaged the democracy-terrorism debate within the remit of Africa. In this light, this study intends to empirically verify whether democracy in Africa aids the level of terrorism activities, and this is justified based on the following reasons: firstly, to the best of our knowledge, there has been only one study on the relationship between democracy and terrorism in Africa, which is that of Ajide and Raheem (2020). However, this study moves away from their study in four areas, notably, it: (i) accounts for

simultaneity/reverse causality in the modelling exercise; (ii) controls for country-specific heterogeneity which is another dimension of endogeneity; (iii) utilises the varieties of democracy index (V-Dem), which is a more robust measure of democracy (iv) employs an updated dataset. Secondly, this study contributes to the debate on whether democracy, and in particular, non-advanced democracies such as the types in Africa increase the level of terrorism activities. Thirdly, the study provides empirical evidence on the relationship between democracy and terrorism in Africa as policy makers preacknowledge that democracy reduces terrorism, a hypothesis which needs empirical verification. The study employs data from 26 African countries for the period 2000 to 2017 in an unbalanced panel data framework. The scope of the study is constrained by data availability. The study utilises the Instrumental Variable (IV) Fixed Effects (FE) model to account for simultaneity/reverse causality and country specific heterogeneity. In summary the research question being assessed by this study is the following: how does democracy affect terrorism in Africa?

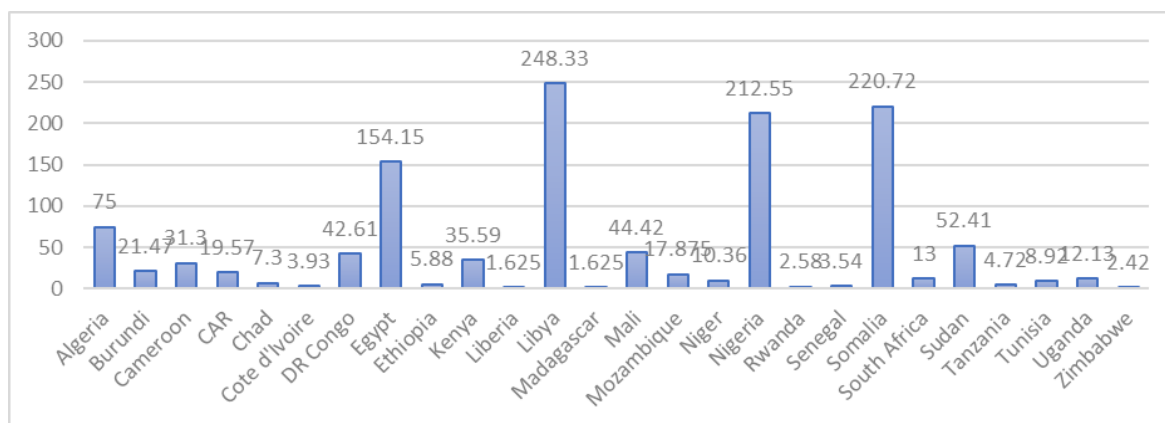
The remainder of this study is organised as follows. Section 2 provides stylized facts and a review of the extant literature while the methodology is discussed in Section 3. Section 4 discloses the data whereas the empirical results are provided in Section 5. Section 6 concludes with implications and future research directions.

## **2. Stylized facts and literature review**

Terrorism has continued to be a global phenomenon affecting societies, countries, regions, and continents of the world, with devastating effects on both individuals and the State. Terrorism is basically associated with the use of violence to achieve a desired goal. However, having a generally acceptable definition of terrorism has been a subject of controversy due to issues such as a basis for when the use of violence (directed at whom, by whom, for what ends) is appropriate and legitimate. Even in the United Nations, a consensus has hardly been reached as to what terrorism should mean. However, the UN Security Council in its Resolution 1566 of 2004 defines terrorism as “criminal acts, including against civilians, committed with the intent to cause death or serious bodily injury, or taking of hostages, with the purpose to provoke a state of terror in the general public or in a group of persons or particular persons, intimidate a population or compel a government or an international organization to do or to abstain from doing any act.” UNODC (2018) states that in broad terms, terrorism can be understood basically as a means of coercion which threatens to or uses violence to spread fear and hence, achieve certain political or ideological goals, which are quite different from normal violence.

Figure 1 shows the number of terror incidents on the average for the period 2000 to 2017 in selected African countries. It can be observed that Egypt, Libya, Nigeria and Somalia have had the highest number of terrorism incidents in the African continent within the given period. It is also revealed that countries like Liberia and Madagascar have the lowest level of terrorism incidents in Africa.

**Figure 1:** Average Number of Terrorism Incidents, 2000-2017



Source: Global Terrorism Database.

Note: CAR is Central African Republic, DR Congo is Democratic Republic of Congo.

## 2.1 Sparse literature on the nexus between democracy and terrorism in Africa

Few studies have examined the influence of democracy on terrorism. However, studies on how democracy affects terrorism in Africa remain sparse. There has only been one study which relates to the African economy. The study is authored by Ajide and Raheem (2020) who examined the influence of democracy on terrorism in 49 African countries for the period 1980 to 2012 in a panel data setup. Their study utilised four measures of terrorism which include domestic terrorism, transnational terrorism, uncertain terrorism, and total terrorism. The study as well employed the negative binomial regression with results revealing that democracy reduces the various measures of terrorism except transnational terrorism. Further findings reveal that there is a threshold value for democracy which must be attained for democracy to reduce terrorism in Africa.

Shahrouri (2010) investigated the nexus between democracy and terrorism employing a time series methodology. Empirical results reveal that democracy has a negative relationship with terrorism. The study concludes that a more democratic country leads to a less dissatisfied society that is less motivated to take-up arms. A similar finding is apparent in the study of Li (2005) using a dataset comprising of 119 countries from 1975 to 1997. The study revealed that democratic participation reduces transnational terrorism while government constraints have the opposite effect. Also, Brophy-Baermann (2014), employing world data for the period 1970 to 2012 reveal that democracies are not primary targets of terrorism. However, Chenoweth (2013) revealed that from 1968 to 1997, in general, advanced democracies did not suffer from severe terrorism incidents. However, advanced democracies that interfered in the affairs of other countries, specifically through military presence and interventions suffered more frequent terror attacks from terrorist organisations. Furthermore, poor democracies having territorial conflicts suffered from domestic terrorism. It was also highlighted that countries with low quality institutions were prone to domestic forms of terrorism than authoritarian regimes and advanced democracies.

Wilson and Piazza (2013) study the relationship between autocracy and terrorism utilising a dataset comprising of 161 countries for the period 1970 to 2006 and

employing the zero-inflated negative binomial regression. The result reveals that single-party authoritarian regimes experience less domestic and international terrorism in relation to military autocracies and democracies. The study concludes that party-based autocracies have a broader range of coercion strategies which can be adopted to address grievances. On the other hand, Chenoweth (2012) examined whether terrorism has continued to occur in countries that practice democracy by employing data that ends in 2010. The findings reveal that terrorism remains prevalent in democracies and has also increased in anocracies—failed states. It is revealed from these studies that much has not been studied on the influence of democracy on terrorism and in particular, empirical literature remains very scanty. This study thus adds to the body of knowledge in this area of research.

## **2.2 The curvilinear relationship between the democracy and terrorism**

It is also important to acknowledge that the nexus between terrorism and democracy is not direct or linear but could be curvilinear and hence take various shapes contingent on some initial conditions of economic development. This section is discussed in three main strands, notably: (i) some contemporary studies supporting the non-linear nexus between terrorism and development outcomes such as democracy; (ii) a synthesis of the narrative in the light of the motivation of this study and (iii) insights into the time and level hypotheses for the benefits of democracy documented in the extant literature that are also relevant in understanding the non-linear nexus underpinning the relationship being examined.

In the first strand, four studies are worth engaging. Gaibullov, Piazza and Sandler (2017) have provided international evidence of how regime types are linked to terrorism. They have formulated a game theory model to provide insights into a nonlinear nexus between terrorism and regime type. Accordingly, the model shows that different samples in the extant literature can engender varying nexuses between terrorism and regime type. They further apply a plethora of empirical strategies to show that there is a robust inverted U-shaped nexus between regime type and various terrorism measures. Slinko Bilyuga, Zinkina and Korotayev (2017) provide a cross-national view of the nexus between political destabilization and regime type. The analytical exercise is particularly tailored towards a U shape nexus such that authoritarian regimes are consistently less stable compared to democracies that are consolidated. It is also established by the authors that the underlying asymmetry varies across time. Korotayev, Vaskin, and Tsirel (2021) have investigated linkages between economic growth, education and terrorism to support evidence of a curvilinear nexus. In another study on a re-analysis of the connection between democracy and terrorism, Korotayev, Romanov and Vaskin (2021) analyse the underlying nexus with specific emphasis on democracies that are functional. Accordingly, the study is premised on the point that functional democracies are different from other political regimes. The results of the study revealed that when the nexus between terrorist activity and regime type is replicated across sub-samples, it is apparent that higher levels of terrorism are positively explained by functional democracy while compared to lower levels in terms of terrorist attack intensity, a non-factional democracy is not a predictor that is statistically significant.

In the second strand on the synthesis of the narratives in the previous literature in the light of the motivation of the study, it is worthwhile to emphasise that this study considers the potential curvilinear relationship between terrorism and democracy which could build on the premise that terrorism is: (i) least apparent in full democracies and full autocracies; (ii) high in partial democracies and partial autocracies while (iii) highest in factional democracies. Hence, in countries with comparative partial democracies such as African countries, it can be expected that democracy should increase terrorism instead of reducing it. The insights can also be clarified by the time and level assumptions pertaining to the benefits of democracy.

The third strand provides insights into the time and level hypotheses for the benefits of democracy documented in the extant literature, in order to better articulate the non-linear nexus underpinning the relationship being examined. Consistent with the extant literature (Asongu & Nwachukwu, 2016), the level assumption for the benefits of democracy is founded on the premise that political regimes for favourable development outcomes is highest in countries with strong democratic, average in authoritarian regimes that are strong and least in countries that are only partially democratised. Such evidence can take various forms such as J-Shape (Back & Hadenius, 2008), U-shape (Montinola & Jackman, 2002) or S-shape (Sung, 2004). On the front of the "time of exposure" assumption, the historically accumulated experience with democracy is relevant. Accordingly to Keefer (2007), young democracies perform worse in terms of favourable economic development outcome, compared to older democracies while authoritarian regimes fall in-between.

In the light of the above, the following testable hypothesis is examined in this study.

*Hypothesis 1: democracy has a non-linear relationship with terrorism in Africa.*

### **3. Methods**

Previous studies that have focused on fighting terrorism have employed a plethora of estimation techniques, notably: (i) Tavares (2004) and Bravo and Dias (2006) have employed Ordinary Least Squares (OLS); (ii) Zero-inflated Negative Binomial and Negative Binomial regressions have been employed by Drakos and Gofas (2006) and Savun and Phillips (2009); (iii) the multilevel Poisson estimation has been used by Lee (2013); (iv) the logistic regression is employed by Kavanagh (2011) and Bhavani (2011) while (v) the generalized method of moments has been employed by Bandyopadhyay et al. (2014). However, most of these studies either do not control for simultaneity (i.e. reverse causality) or consider the outcome variable as fixed in the modelling approach nor control for cross sectional dependence. The present study employs an instrumental variable estimation approach on the one hand and on the other, the modelling exercise is also tailored such that the nexus between democracy and terrorism is assessed following a non-linear relationship.

#### **3.1 Instrumental Variable Fixed Effects Model**

The IV-FE model is employed in the study due to two substantial reasons. The first reason for utilising the FE model is to account for country-specific characteristics



which are unobservable while the second reason is to account for reverse causality/simultaneity in the modelling exercise. The problem of reverse causality/simultaneity is corrected through the process of instrumentation. This involves instrumenting the explanatory variables with their first lags.

$$X_{i,t} = \alpha_0 + \alpha_j(X_{i,t-1}) + u_{i,t} \quad (1)$$

here,  $X_{i,t}$  is an explanatory variable in country  $i$  at time  $t$ .  $\alpha_0$  is the intercept,  $X_{i,t-1}$  is the first lag of the explanatory variable and  $u_{i,t}$  is the error term.

The instruments are derived for the regressors in the FE model by saving the fitted values or factor loadings from an Ordinary Least Squares (OLS) regression in equation (1). The fitted values are then used as instruments for the explanatory variables. In other words, the instrumentation process is tailored to consider issue of variances in error terms that are not constant as well as the possibility that the error terms can be auto correlated. This instrumentation procedure is consistent with literature (Efobi et al. 2019).

Equation (2) presents the fixed effects model where;

$$terrorism_{i,t} = \theta_0 + \theta_2 democracy_{i,t} + \theta_3 democracy_{i,t}^2 + X_{i,t} + \alpha_i + u_{i,t} \quad (2)$$

where, *terrorism* represents a terrorism index derived from three indicators of terrorism which includes the number of terrorism incidents, the number of terrorism fatalities and the number of terrorism injuries. The terrorism index is constructed utilising the principal component analysis (PCA). *democracy* is captured using the V-Dem polyarchy index. The V-Dem polyarchy index have been revealed by Boese (2019) to be a better measure of democracy in terms of the underlying definition and measurement scale and also the theoretical justification of the aggregation procedure. Boese (2019) strictly advocate for the use of this index when undergoing a statistical analysis of democracy. The study also utilised a squared term for democracy to capture the nonlinearity of the relationship between democracy and terrorism.  $X$  is composed of three control variables which includes Gross Domestic Product (GDP), political stability and unemployment rate.  $\alpha_i$  is country specific effect and  $u_{i,t}$  is the error term.

$$terrorism_{i,t} = \theta_0 + \theta_2 democracy_{i,t} + \theta_3 democracy_{i,t}^2 + \theta_3 gdp_{i,t} + \theta_4 ps_{i,t} + \theta_5 unemp_{i,t} + \alpha_i + u_{i,t} \quad (3)$$

here, *gdp* is gross domestic product, *ps* is political stability, and *unemp* is unemployment. The study utilises the Driscoll and Kraay (1998) standard errors which are robust to serial correlation, group wise heteroskedasticity and cross-sectional dependence. According to Baltagi, Kao and Peng (2016), cross sectional dependence are common shocks, spatial effects or interactions within social networks. The presence of cross-sectional dependence leads to estimation bias. According to Hoechle (2007), in the presence of cross-sectional dependence, the Driscoll and Kraay FE model have small sample properties which are robust when compared to other alternative covariance estimators.

#### 4. Data

This study focuses on 26 African countries from the year 2000 to 2017 in a panel data framework. The time period and the number of countries employed in the study are guided by the availability of data, and also covers the bulk of African countries that are burdened by terrorism. To account for measurement error in the data, the study utilises a three-year nonoverlapping interval. A terrorism index variable was derived from the number of terrorism incidents, the number of terrorism fatalities and the number of terrorism injuries using the PCA. The PCA involves reducing a set of highly correlated variables into an uncorrelated set of small variables known as principal components. These components are said to account for most of the information in the original dataset (Tchamyou, 2017). According to Kaiser (1974) and Jolliffe (2002), the construction of the new index is such that only the common factors that have an eigen value greater than one is retained. As revealed in table 1, we retain the first principal component in the construction of the terrorism index because it has an eigenvalue greater than one.

**Table 1:** Principal Component Analysis of Terrorism Indicators

Component	Eigenvalue	Proportion	Cumulative
First PC	2.6614	0.8872	0.8872
Second PC	0.2247	0.0749	0.9621
Third PC	0.1138	0.0379	1.0000

Source: Author's computation.

Note: PC means Principal Component.

The democracy variable, the V-Dem polyarchy index distinguishes between five high-level principles of democracy which includes electoral, liberal, participatory, deliberative and egalitarian. The index has an interval from low to high (0-1) and is constructed from indices such as the freedom of association, clean elections, freedom of expression, elected officials and suffrages. The study employs three control variables which include: the natural logarithm of Gross Domestic Product (GDP) per capita, constant US\$, sourced from the World Development Indicators, WDI (2020), political stability sourced from the World Governance Indicators, WGI (2020) and the rate of unemployment sourced from WDI (2020).

The study employs GDP as a control variable based on the doctrine of immiserizing growth. Political stability and unemployment are also employed in the study based on the intuition that the former has the tendency to reduce terrorism activities while the latter has the tendency to increase terrorism activities on the foundation of the rational choice model and the immiserizing modernisation theory. Table 1 shows the descriptive statistics of the variables in the model incorporating the mean, standard deviation, minimum and maximum values of each variable.

**Table 2:** Descriptive Statistics of Variables

Variables	Observation	Mean	Standard Deviation	Minimum	Maximum
-----------	-------------	------	-----------------------	---------	---------

Terror Incidents	343	53.1428	126.9522	1	872
Terror Fatalities	343	180.0845	592.0466	0	7781
Terror Injuries	343	126.5743	290.8721	0	2863
Democracy (V-Dem Index)	468	0.3764	0.1734	0.072	0.79
GDP	450	1677.23	2214.932	193.8669	12120.56
Political Stability	442	-1.0154	0.8242	-3.3149	0.8333
Unemployment	468	8.0722	6.5932	0.32	29.77

**Source:** Author's computation.

As observed, discrepancies exist in the measures of central tendency due to individual heterogeneity, that is, country-specific characteristics. While the value of GDP is presented in the descriptive statistics, the empirical analysis converts GDP to its natural logarithm for ease of interpretation. Terrorism variables are also converted to their natural logarithms.

The countries employed in the study include Algeria, Burundi, Cameroon, Central African Republic, Chad, Cote d'Ivoire, Democratic Republic of Congo, Egypt, Ethiopia, Kenya, Liberia, Libya, Madagascar, Mali, Mozambique, Niger, Nigeria, Rwanda, Senegal, Somalia, South Africa, Sudan, Tanzania, Tunisia, Uganda, Zimbabwe.

The degree of correlation among the variables in the model was also examined. This is applied to ascertain the level of correlation among the regressors in the model to avoid multicollinearity where necessary. The results from Table 3 reveal no substantial correlation that can lead to multicollinearity among the regressors in the model. Additionally, it is revealed that the indicator of democracy has a negative correlation with the number of terrorism fatalities and terrorism injuries but a positive correlation with the number of terrorism incidents.

**Table 3:** Correlation Matrix

	Terrorism Incidents	Terrorism Fatalities	Terrorism Injuries	V-Dem Index	GDP	Political Stability	Unemployment
Terrorism Incidents	1.0000						
Terrorism Fatalities	0.8714	1.0000					
Terrorism Injuries	0.7675	0.7873	1.0000				
V-Dem Index	0.0210	-0.0885	-0.1097	1.0000			
GDP	0.3630	0.2182	0.2436	0.2966	1.0000		
Political Stability	-0.3911	-0.4815	-0.3282	0.3849	0.0403	1.0000	
Unemployment	0.2341	0.0705	0.1030	0.2436	0.5834	0.2139	1.0000

**Source:** Author's computation.

## 5. Presentation and Discussion of Results

The discussions of results begin with the test for cross-sectional dependence of the variables in the model. Testing for cross-sectional dependence clarifies the suitability in employing the Driscoll and Kraay standard errors. The study utilises the Pesaran (2015) procedure which has a null hypothesis of weak cross-sectional dependence

of the variables and an alternate hypothesis of cross-sectional dependence. Results are revealed in table 4 with findings showing that at 1% level of statistical significance, the errors of the variables in the model are cross-sectionally dependent. This provides justification of the utilisation of the Driscoll and Kraay standard errors in the modelling exercise.

**Table 4:** Pesaran (2015) Test for Cross-Sectional Dependence

Variables	Test Values
Terrorism Incidents	18.874*** (0.000)
Terrorism Fatalities	13.881*** (0.000)
Terrorism Injuries	15.318*** (0.000)
Terrorism Index	6.365*** (0.000)
Polity2	6.757*** (0.000)
V-Dem Index	72.913*** (0.000)
GDP	73.447*** (0.000)
Political Stability	49.190*** (0.000)
Unemployment	72.307*** (0.000)

Source: Author's computation. Note:  $H_0$ : Errors are weakly cross sectional dependent. \*\*\* represents statistical significance at 1%.

Table 5 provides the result of the relationship between democracy and terrorism in Africa. Findings show a non-linear relationship between democracy and terrorism. In particular, we find that initial levels of democracy increase terrorism, however, we see that later stages of democracy tends to reduce terrorism in Africa. This finding contradicts the results of Ajide and Raheem (2020) who revealed the non-existence of a nonlinear relationship between democracy and total terrorism. Our result shows an inverted U-shaped relationship between democracy and terrorism in Africa. This result also contradicts the findings of Slinko, Bilyuga and Korotayev (2017) who revealed a U-shaped nexus between terrorism and democracy. The difference in findings could be as a result of their utilisation of regime type as a measure of democracy while this study utilises the more robust V-Dem index.

**Table 5:** IV-Fixed Effects

Variables	Terrorism Incidents	Terrorism Fatalities	Terrorism Injuries	Terrorism Index
V-Dem Index	17.1852***	4.9466	21.8530***	12.0121***

		(0.000)	(0.122)	(0.000)	(0.000)
V-Dem	Index	-16.4062***	-3.4551	-22.9265***	-12.8525***
Squared		(0.000)	(0.295)	(0.001)	(0.001)
GDP		2.1431***	1.5591***	1.1261***	0.9565***
		(0.000)	(0.000)	(0.000)	(0.000)
Political Stability		-1.6106***	-1.7504***	-1.2350***	-0.6901***
		(0.000)	(0.000)	(0.000)	(0.000)
Unemployment		0.1060***	0.1332***	0.1400***	0.0887***
		(0.000)	(0.000)	(0.000)	(0.000)
Constant		-18.9439***	-11.7866***	-11.4245***	-10.4516***
		(0.000)	(0.000)	(0.000)	(0.000)
R-squared		0.4685	0.3041	0.2300	0.2035
Within					
F-statistics		10450.75***	242.76***	2990.25***	160.71***
		(0.0000)	(0.0000)	(0.0000)	(0.0000)
Observations		133	117	113	106

**Source:** Authors' computation.

**Note:** Dependent Variable: Terrorism Index. \*\*\* reveals statistical significance at 1%.

Our finding is supported by the conclusions of Gaibullov, Piazza and Sandler (2017) who revealed that earlier stages of democracy increase terrorism while later stages of democracy reduce terrorism. There are theoretical grounds to expect a pronounced positive correlation between democracy and terrorism for the sampled African countries. According to Chenoweth (2006), partial and young democracies provide the environment for terrorist activities to thrive. In African countries where comparative partial democracies exist, democracy increases terrorism. However, result reveals that at later stages of democracy, where democracy has been consolidated, there would be a fall of terrorism in Africa.

Concerning the control variables, economic growth is also revealed to be a factor which propels terrorism in Africa. This is plausible based on the non-inclusiveness of the growth process of many African nations as embedded in the theory of immiserizing growth. The immiserizing growth points that a fraction of a country can be disadvantaged from economic growth and hence not benefit from growth. This increases grievance and can lead to conflict and terrorism. The positive effect of unemployment on terrorism seems reasonable too. Unemployment can create grievances in a population and can also fuel crimes and conflicts which can grow into full scale terrorism by lowering the opportunity cost of terror. This notion is incorporated into the rational choice model. This result is also supported by the studies of Adelaja and George (2020) and Bagchi and Paul (2018) who found that (youth) unemployment positively drives domestic terrorism. It is also revealed that political stability has a negative and significant impact on terrorism in Africa. When the political climate of African countries is stable, there tend to be lower levels of terrorism. This is quite reasonable in the context of the African society as many cases of conflict and acts of terrorism are fuelled from political situations.

## 6. Conclusion

This study provides empirical evidence on the relationship between democracy and terrorism in selected African countries for the period 2000 to 2017. The study utilised the FE model with Driscoll and Kraay standard errors and accounted for simultaneity/reverse causality using the first lags of the regressors as instruments in the modelling exercises. The empirical result revealed that a nonlinear relationship exists between democracy and terrorism in Africa. The study finds that initial levels of democracy increase terrorism while later stages of democracy would lead to the decline in terrorism. The positive impact of democracy on terrorism is supported considering the hypothesis outlined by Chenoweth (2006) where partial and young democracies provide the environment for terrorist activities to thrive. Democracy creates free movement and association and weak forms of democracy such as those in Africa can easily enable terrorist organisations to plan coordinated attacks. The results of the study also support the conclusion of Sandler (1995) where democracy can aid terrorism. Also, as observed by Freeman (2008), democracy remains a threat to Islamic culture, and this is one of the reasons why terrorism has become prevalent in young democracies such as those in Africa, as African countries continue the democratisation process. The inverted U-shaped relationship between democracy and terrorism mean that as African democracies consolidate, where there becomes a substantial general improvement in freedom of association and expression, suffrage and cleaner elections, there is going to be a corresponding fall in terrorism. Eyerman (1998) and Piazza (2013) provided reasons why young democracies are prone to terrorism. In their perspective, young democracies are unable to effectively defend their territories and governing institutions. This makes it easy for the penetration of terrorist organisations. Secondly, they argue that the shift to democracy make nonviolent strategies to resolving grievance valuable but contend that this outcome is not instantaneous meaning that the immediate response to grievance may be through the utilisation of violence. Thirdly, young democracies may still resort to the use of violent repression which increases the likelihood of utilising terrorism by dissidents.

Based on the findings of the study, we recommend that African countries should consolidate their democracies in order to reap the rewards pertaining to the time and level advantages of democracy discussed in the literature. Accordingly, it is likely that when African countries become advanced and/or full democracies, such democracies would reduce terrorism as evident in the empirical result. Hence, one of the reasons why terrorism has progressed in Africa over the last decade is due to the vulnerable nature of Africa's emerging democracies. We believe that as democracy in Africa advances, terrorism, and in particular, domestic terrorism will be curbed, contingent on the time and level assumptions for the benefit of democracy discussed in Section 2. The study also recommends an inclusive growth process in Africa to reduce grievance and increase the opportunity cost of terrorism. Further recommendations entail the need for a more stable political environment which can be achieved through inclusive political participation and a reduction of nepotism and tribalism. The need for economic policies to foster employment generation to discourage terrorism participation and increase the marginal cost of terrorism via the improvement in living standard is also recommended.

**Funding:** This study received no funding

## References

- Adelaja, A., & George, J. (2020). Is Youth Unemployment related to Domestic Terrorism? *Perspectives on Terrorism*, 14(5), 41-62.
- Ajide, K., & Raheem, I. (2020). Does Democracy really fuel Terrorism in Africa? *International Economic Journal*, 34(2), 297-316.
- Albuquerque, A. L. (2017). Terrorism in Africa: A Quantitative Approach . *FOI-R-- 4398-SE*.
- Asongu, S. (2014). Financial Development Dynamic Thresholds of Financial Globalisation: Evidence from Africa. *Journal of Economic Studies*, 41(2), 166-195.
- Asongu, S. A., & Nwachukwu, J. C., (2016). Law, Politics and the Quality of Government in Africa, *Politics & Policy*, 44(5), 916-944.

- Asongu, S., & Nwachukwu, J. (2017). Fighting Capital Flight in Africa: Evidence from Bundling and Unbundling Governance. *Journal of Industry, Competition and Trade*, 17(3), 305-323.
- Asongu, S., & Odhiambo, N. (2020). Remittances, the Diffusion of Information and Industrialisation in Africa. *Contemporary Social Science*, 15(1), 98-117.
- Asongu, S., Iheonu, C., & Odo, K. (2019). The Conditional Relationship between Renewable Energy and Environmental Quality in Sub-Saharan Africa. *Environmental Science and Pollution Research*, 26, 36993-37000.
- Back, H., & Hadenius, A., (2008). Democracy and State Capacity: Exploring a J-Shaped Relationship. *Governance*, 21 (1), 1-24.
- Baltagi, B.H., Kao, C., & Peng, B. (2016). Testing Cross-Sectional Correlation in Large Panel Data Models with Serial Correlation. *Econometrics*, 4(4), 1-24.
- Bandyopadhyay, S., Sandler, T., & Younas, J., (2014). Foreign direct investment, aid, and terrorism. *Oxford Economic Papers*, 66(1), 25-50.
- Bhavnani, R., (2011). Three Two Tango: Territorial Control and Selective Violence in Israel, the West Bank, and Gaza. *Journal of Conflict Resolution*, 55(1), 133-158.
- Boese, V.A. (2019). How (not) to measure Democracy. *International Area Studies*, 22(2), 95-127.
- Bravo, A. B. S., & Dias, C. M. M., (2006). An Empirical Analysis of Terrorism: Deprivation, Islamism and Geopolitical Factors. *Defence and Peace Economics*, 17(4), 329-441.
- Brophy-Baermann, B. (2014). Democracy Causes Terrorism: Methodological Flaws, a New Approach, and a New Answer. *Journal of Pedagogy, Pluralism and Practice*, 6(1), 85-124.
- Brück, T., Schneider, F., & Karaisl, M. (2007). *A Survey on the Economics of Security with Particular Focus on the Possibility to Create a Network of Experts on the Economic Analysis of Terrorism and Anti-Terror Policies and on the Interplay between the Costs of Terrorism and of Anti-Terror Measures* – . Berlin.
- Chen, A., & Siems, T. (2004). The Effects of Terrorism on Global Capital Markets. *European Journal of Political Economy*, 20(2), 349-366.
- Chenoweth, E. (2006, November). The Inadvertent Effects of Democracy on Terrorist Group Emergence. *BCSIA Discussion Paper 2006-06*.
- Chenoweth, E. (2012). Is Terrorism still a Democratic Phenomenon? *Uluslararası İlişkiler*, 8(32), 85-99.
- Chenoweth, E. (2013). Terrorism and Democracy. *Annual Review of Political Science*, 16, 355-378.
- Cinar, M. (2017). The Effects of Terrorism on Economic Growth: Panel Data Approach. *Zb. rad. Ekon. fak. Rij*, 35(1), 97-121.



- Drakos, K., & Gofas, A., (2006). In Search of the Average Transnational Terrorist Attack Venue. *Defence and Peace Economics*, 17(2), 73-93.
- Efobi, U., Asongu, S., Okafor, C., Tchamyou, V., & Tanankem, B. (2019). Finance and Industrialisation in Africa. *Journal of Multinational Financial Management*, 49, 54-66.
- Eyerman, J. (1998). Terrorism and Democratic States: Soft Targets or Accessible Systems. *International Interactions*, 24(2), 151-170.
- Freeman, M. (2008). Democracy, Al Qaeda, and the Causes of Terrorism: A Strategic Analysis of U.S. Policy. *Studies in Conflict & Terrorism*, 31(1), 40-59.
- Gaibullov, K., Piazza, J. A., & Sandler, T., (2017). Regime types and terrorism. *International organization*, 71(3), 491–522.
- Gooda, M., & Marktanner, M. (2018). Muslim Youth Unemployment and Expat Jihadism: Bored to Death? *Studies in Conflict and Terrorism*, 42(10), 878-897.
- Hoechle, D. (2017). Robust Standard Errors for Panel Regressions with Cross-sectional Dependence. *The Stata Journal*, 7(3), 281-312.
- Hussian, D., & Sarma, R. (2016). Socio-economic and Psychological effects of Terrorist bomb blasts on the lives of Survivors: An Exploratory Study on Affected Individuals. *Intervention: Journal of Mental Health and Psychosocial Support in Conflict Affected Areas*, 14(3), 189-199.
- Keefer, P., (2007). Clientelism, Credibility, and the Policy Choices of Young Democracies. *American Journal of Political Science* 51 (4), 804–821.
- Iheonu, C., Odo, K., & Ekeocha, D. (2020). Estimating the Effect of Democracy, Militarisation and Governance on Peace in Africa. *Journal of Public Affairs*.
- Kavanagh, J., (2011). Selection, Availability, and Opportunity: The Conditional Effect of Poverty on Terrorist Group Participation. *Journal of Conflict Resolution*, 55(1), 106-132.
- Koenker, R., & Basset, J. (1978). Regression Quantiles. *Econometrica*, 46(1), 33-50.
- Large, L., & Sisk, T. (2006). *Democracy, Conflict and Human Security: Pursuing Peace in the 21st Century*. Stockholm: International Institute for Democracy and Electoral Assistance.
- Li, Q. (2005). Does Democracy promote or reduce Transnational Terrorist Incidents? *The Journal of Conflict Resolution*, 49(2), 287-297.
- Montinola, G. R., & Jackman, R.W. (2002). Sources of Corruption: A CrossCountry Study. *British Journal of Political Science*, 32(1), 147–170.
- Okafor, G., & Piesse, J. (2017). Empirical Investigation into the Determinants of Terrorism: Evidence from Fragile States. *Defence and Peace Economics*, 9(6), 697-711.

- Piazza, J. (2007). Draining the Swamp: Democracy Promotion, State Failure, and Terrorism in 19 Middle Eastern Countries. *Studies in Conflict & Terrorism*, 30(6), 521-539.
- Korotayev A., Romanov D., & Vaskin I. (2021). Terrorism and democracy: a re-analysis. *The Russian Sociological Review*, 18(3), 9-48.
- Korotayev, A., Vaskin, I., & Tsirel, S., (2021). Economic Growth, Education, and Terrorism: A Re-Analysis. *Terrorism and Political Violence*, 33(3) 572-595.
- Sandler, T. (1995). On the Relationship between Democracy and Terrorism. *Terrorism and Political Violence*, 7(4), 1-9.
- Savun, B., & Phillips, B. J., (2009). Democracy, foreign policy, and terrorism. *Journal of Conflict Resolution*, 53(6), 878-904.
- Shahrouri, N. (2010). Does a link exist between Democracy and Terrorism? *International Journal of World Peace*, 7(4), 41-77.
- Slinko E., Bilyuga, S., Zinkina, J., & Korotayev, (2017). Regime type and political destabilization in cross-national perspective: A re-analysis. *Cross-Cultural Research*, 51(1), 26–50.
- Sung, H.E., (2004). Democracy and political corruption: a cross-national comparison. *Crime, Law and Social Change*, 41(2), pp.179–194.
- Tavares, J., (2004). The Open Society Assesses Its Enemies: Shocks, Disasters and Terrorist Attacks. *Journal of Monetary Economics*, 51(5), 1039-1070.
- Wilson, M., & Piazza, J. (2013). Autocracies and Terrorism: Conditioning Effects of Authoritarian Regime Type on Terrorist Attacks. *American Journal of Political Science*, 57(4), 941-955