

## **THE INTERACTION EFFECT OF TRADE OPENNESS AND INSTITUTIONS ON ECONOMIC GROWTH IN SELECTED COUNTRIES IN AFRICA: A PANEL DATA ANALYSIS**

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### **Abstract**

This study sets out to examine the interaction effect of trade openness and institutions on economic growth in selected African countries using panel data analysis. There is a general discourse that the growth of a country depends on the level of investment which can be achieved most times via engaging in trading activities with other countries of the world. International trade, on the other hand, is enhanced by the presence of strong institutions. It has been observed that the combination of trade openness and institutions affect the economic growth of African countries but which of the institutions when trade is carried on would boost growth more is the aim of this study. This study used secondary data of thirty-five African countries and employed the Least Square Dummy Variables (LSDV) and the Generalized Method of Moments (GMM) econometric techniques for estimation. The major finding of the study revealed that the interaction effect of trade openness, political and cultural institutions is stronger than the interaction effect of trade openness and economic institutions hence economic growth tends to be better in the former case than the latter in the selected African countries. Therefore, the study recommends that attention should be paid to the development of the economic, political and cultural institutions simultaneously by the governments of the African countries.

**Keywords:** Interaction Effect, Trade Openness, Institutions, Economic Growth, Africa.

## 1. INTRODUCTION

Economic growth is a sustained expansion of production possibilities measured as the increase in real Gross Domestic Product (GDP) over a given period of time (Parkin, Powell and Matthews, 2008). The role of trade in economic growth and development is significant. The Classical and Neo-classical economists attached so much importance to international trade in a country's development that they regarded it as an 'engine of growth'. International trade increases savings and investment, reduces unemployment and under-employment, enhances greater backward and forward linkages in the economy and ensures a larger inflow of factor inputs into the economy and outflow of goods and services. Trade openness has been defined as a move towards freer trade through the reduction of tariff and other barriers and is generally perceived as the major driving force behind globalization (Wacziarg and Welch, 2008). The Neo-classical economists believed that the economic growth of a country depends on the level of investment (Solow, 1956). Other scholars brought the concept of endogenous growth into the debate (Lucas, 1988; Romer, 1986). This was made more popular in the work of Mankiw, Romer and Weil (1992) that made human capital relevant to economic growth. Both the classical economists and the endogenous growth theorists seem to assume the institutions in countries affect economic activities. However, the insufficient benefits that accrue to developing countries from the global world suggest that there is more to economic growth and trade than implied by the neo-classical economists (Ige, 2007; Umo, 2001; Garba, 2003).

According to North (1991), institutions are the humanly devised constraints that structure and control political, economic and social interactions amongst various economic agents. They consist of both informal constraints (sanctions, taboos, customs, traditions and codes of conduct); and formal rules (constitutions, laws, property rights). They are a set of economic, political and social factors, rules, beliefs, values and organizations that jointly motivate regularity in individual and social behaviour (Greif, 2006). They are of three types viz; economic, political and social. Economic institutions are essential for economic growth in any country due to their influence in shaping incentives for various economic actors in a society. They do not only determine the level of economic growth potential of a country, they also determine the distribution of resources and economic gains in the country. Political institutions, on the other hand, deal with the way the political structure in a country influences the behaviour of agents especially with regards to the distribution of political power - *de jure* and *de facto* (North, 1991; Acemoglu and Robinson, 2008; IMF, 2005). Institutions have been crafted by man to create a peaceful habitation and reduce uncertainty in the exchange of values. It is also believed that they play key roles in the management of economies in recent years. This is due to the fact that, it is becoming increasingly clear that those involved in economic transactions are not only influenced by economic variables (especially price) but also by a host of other factors that can be classified as institutions (Natal, 2001).

There is a wide spread belief that the combination of trade openness and institutions can affect the economic growth of African countries. But it is not clear which of the combinations whether the combination of trade openness and economic institution, trade openness and political institution or trade openness and cultural institution will bring about a better economic growth in these countries. Hence, this study sets out to examine which of these combinations would have a better impact on the economic growth of the selected African countries. Thirty-five (35) countries were selected based on the World Bank's (2007) classification of countries into 'moderately outward-oriented', 'moderately inward-oriented' and 'strongly inward-oriented countries'. In addition, they are all developing countries and belong to the African continent. These countries had also embarked on trade liberalization policies from the 1980s till date. The time frame for the data covers 1985 to 2014. The choice of the time frame is informed by the fact that this era witnessed the introduction of trade policy regimes and economic reforms such as the introduction of Structural Adjustment Programmes (SAP) in most SSA countries (Ajakaiye and Oyejide, 2005; Akinkugbe, 2008).

Therefore, it is possible to estimate the partial effect, elasticity or semi-elasticity of the dependent variable in an equation with respect to an explanatory variable to depend on the magnitude of yet another explanatory variable. In other words, to find out if there is an 'interaction effect' between the two independent variables. This prompted this study to examine the interaction effect of trade openness and institutions on economic growth. This was done in order to verify if trade openness will affect economic growth more when we have economic, political or cultural institutions. A new variable was introduced into the growth equation; this new variable is the product of the trade openness variable (degree of trade openness) and the estimated values of the institutional variables (repudiation risk, contract intensive money and ethnic tensions). For each of the institutional variable, the mean value was used as a yardstick, any value above this mean value is ascribed 1 and any value below the mean value is ascribed 0. It is this binary variable that is then used to multiply the trade openness variable (degree of trade openness) that gave us the new variable. When the coefficient of the new variable is greater than 0, there is an interaction effect between trade openness and institutions

while if is less than 0, there is no interaction effect between trade openness and institutions.

In the light of the foregoing, the objectives of this study includes; (i) to examine the interactive effect of trade openness and economic institution on economic growth in selected African countries; (ii) to explore interactive effect of trade openness and political institution on economic growth in selected African countries; and (iii) to assess the interactive effect of trade openness and cultural institution on economic growth in selected African countries. The hypothesis formulated in this study stated in the null form is:  $H_0$ : There is no significant interactive effect of trade openness and economic, political, cultural institutions and economic growth in the selected African countries. The remaining part of this paper is structured as follows: section II is the literature review and theoretical framework. Section III presents the methodology employed in this study. Data analysis and discussion are set out in section IV, while section V presents the summary of findings, recommendations and conclusion of the study.

## **2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK**

Without doubt there is enough theoretical foundation that supports the fact that trade openness does influence institutions North (1991) emphasized the role of market size and technology in engendering institutional change over time. It is widely accepted that both market size and technology are influenced by trade. Hence, trade openness can bring about institutional change. Rodrik (2008) showed that trade openness affects domestic political alignments through changes in factor prices. Acemoglu *et al.* (2005) opined that trade induces institutional change by strengthening commercial interests. Acemoglu and Robinson (2006) showed that trade induces institutional change through the transfer of skill-based technology which increases the income share of the middle class. The 'critical juncture' results are also related to Hasan *et al.* (2003), LaPorta *et al.* (1999), Acemoglu *et al.* (2001, 2002), Rodrik *et al.* (2004), and many others who find evidence in favour of the historical origin of institutional divergence across countries.

The origin of trade in the early forms of economies was conceived of as local exchange within a small community. Trade usually expands beyond this kind of community scene to the region and longer distances and eventually to the rest of the world. At each developmental stage, economies have elements of increasing specialization, division of labour and more efficient technological usage. This story of gradual evolution from local autarky to specialization and division of labour was derived from the German historical school of thought (Glitz, 2012). Specialization is elementary whereby self-reliance is one of the key features of most individuals. Limited level of community trade exists within a given social network of informalities, which determines the local exchange of goods and services (North, 1991). Thus, the transaction costs that associate this context are low because people have somewhat intimacy with one another due to repeated transaction.

The theoretical base of this study is premised on the New Institutional Economics (NIE) theory, a new development in economic thought based on institutional economics and some of the principles of Neo-classical economics (Natal, 2001). It has been applied in varying contexts. For instance, it can be engaged as non-technologically determined controls that can influence social interactions by providing the incentives to maintain regularity in human behaviour in historical comparative institutional analysis, (Greif, 1998). The NIE theory posits that economic activities that individuals engage in can be influenced by some social and legal relationships that exist among them. Hence, NIE embraces other areas outside the immediate domain of economics like politics, science and sociology as well as the interaction these can exert on economic outcomes. This is what makes institutions to be an area of economics that has made economics more closely in touch with other social science disciplines as they can be subjected to economic analysis. The basic assumptions of New Institutional Economics (NIE) that relates to trade are three folds assumptions on individuals, assumptions on how and why individuals engage in contract; and assumptions on how individuals govern collective actions (Natal, 2001). In all the assumptions, the essential point is that there should be some mechanism that regulates the participants' behaviour, as individuals can be opportunistic at times that could result to moral hazards (Akerlof, 1970). Though some of the assumptions of NIE have been criticized especially with regards to institutional change and predictability; it is still very relevant when assessing the roles institutions play in economic relations in particular and human relations in general.

This study is also based on the theory of comparative advantage. All countries gain from trade through specializing in the production and export of goods in which they are relatively most efficient and importing the rest of their requirements from other countries that can produce them at a relatively lower cost. The result is that a given level of output can be produced more cheaply for all countries participating in international trade and invariably more employment is generated. Two major extensions of this standard proposition, namely the Hecksher-Ohlin model and Stolper-Samuelson theorem are used to explain comparative advantage. The basis for international trade arises not because of inherent technological differences in labour productivity for

different products between different countries, but because countries are endowed with different factor supplies. Relative factor prices differ because of differences in factor endowments, for example, labour is relatively cheap in labour-abundant countries, and this makes them have a relative cost and price advantage over countries with relatively expensive labour in products that make intensive use of labour (this explains why the developing countries specialize in the production of primary/agricultural products). Conversely, countries well-endowed with capital will have a relative cost and price advantage, that is, capital is relatively cheap, there will be capital abundance, and they will specialize in the production of capital-intensive products like aircraft, automobiles, computers among others - the case of the developed countries (Todaro and Smith, 2011).

### 3. METHODOLOGY

The models specified in this study were analyzed using two estimation techniques namely; Least Square Dummy Variable (LSDV) technique and the Generalized Method of Moments (GMM). The choice of the LSDV technique stems from the fact that in the LSDV, all observations are pooled together but each cross-sectional observation has its own heterogeneous intercept dummy variable. Since this study used panel data, the LSDV reveals the slope coefficient peculiar to all the countries and do not take note of the individual characteristics of each entity. While the GMM estimates the model parameters directly from the moment conditions that are imposed by the model. These conditions can be linear in the parameters or nonlinear. This is used because of the possibility of endogeneity and omitted variable bias. The variables that involve institutions may be endogenous and usually have limited time variation. STATA 11.0 statistical software was used to analyze the data.

#### 3.1 Model Specification

The model for this study is adapted from the work of Balamoune-Lutz and Ndikumana, (2007) and Bhattacharyya, (2011) and Matthew (2013). For the purpose of this study, the model is specified as:

$$Grgdp = f(Gkap, Lab, Open, Hkap, Open * Reprisk, Open * Cim, Open * Ethsion) \quad (3.1)$$

Stating equation (3.8) in econometric form gives:

$$Grgdp_t = \beta_{0i} + \beta_{1i}Gkap_t + \beta_{2i}Lab_t + \beta_{3i}Open_t + \beta_{4i}Hkap_t + \beta_{5i}Open * Reprisk_t + \beta_{6i}Open * Cim_t + \beta_{7i}Open * Ethsion_t + \varepsilon_t \quad (3.2)$$

where; Gkap: gross fixed capital formation (proxy for capital or investment); Lab: employment to population ratio (proxy for labour); Open: degree of openness (measure of trade openness); Hkap: human capital (proxied by primary and secondary school enrolments); Reprisk: repudiation risk (proxy for contracting institutions – this measures contract enforcement between private citizens, the measure operates on an eleven point scale ranging from 0 to 10 with a high score implying better contracting institutions); Cim: contract intensive money (proxy for political institutions - Cim measures the extent of democracy and property rights, these influence the accessibility and willingness of economic agents to exercise property rights); Ethsion: ethnic tensions (proxy for cultural institutions – ethnic tension measures the relative peace in a country and is measured on a 0-6 scale, with higher values implying lower ethnic tension). Open\*Reprisk; Open\*Cim and Open\*Ethsion are the products of the trade openness variable and the binary values of the economic, political and cultural institutions variables respectively.

$\beta_0$  is the intercept. The  $\beta_i$ 's,  $i = 1- 7$ , being coefficients.

When  $\beta_5 \dots \beta_7 > 0$  (there is interaction effect);  $\beta_5 \dots \beta_7 < 0$  (there is no interaction effect).

The *A priori*,  $\beta_1 \dots \beta_7$  are expected to be positively related to economic growth, the dependent variable.

Expressing equation (3.2) as a linear panel data model gives:

$$Grgdp_{it} = \beta_{0i} + \beta_{1i}Gkap_{it} + \beta_{2i}Lab_{it} + \beta_{3i}Open_{it} + \beta_{4i}Hkap_{it} + \beta_{5i}Open * Reprisk_{it} + \beta_{6i}Open * Cim_{it} + \beta_{7i}Open * Ethsion_{it} + \varepsilon_{it} \quad (3.3)$$

Since the Ordinary Least Squares (OLS) technique will not yield consistent estimate for panel data, we used the Least Square Dummy Variable (LSDV) technique to take care of the inherent deficiency in the usage of OLS. However, the limitations of the LSDV includes; (i) there is the degrees of freedom problem arising from introducing too many dummy variables; (ii) the problem of multicollinearity arising from too many variables,

both individual and multiplicative, this makes precise estimation of one or more parameters difficult; and (iii) the LSDV may not be able to identify the impact of time invariant variables. Due to these limitations, this study introduced the concept of dynamic panel data (Gujarati and Porter, 2009). As a result of this, the study assumed that there is a connection between the level of growth experienced in a country in the preceding year with that of the current level, that is, the level of growth achieved in the previous year has a link with the level of growth that the country would attain in the current year. In other words, there is integrated growth in the country. This is particularly necessary because the economy is assumed not to exist in isolation; there are interconnections among the various sectors in the economy, hence, the economic activities in the preceding year have a bearing with current economic activities. This is why the dynamic panel data is used in this study to estimate this link, and this will be estimated using the Generalized Method of Moments (GMM) estimation technique (Matthew, 2013).

Expressing equation (3.3) as a linear dynamic panel data model we have:

$$Grgdp_t = \beta_{0i} + \beta_{1i}Grgdp_{t-1} + \beta_{2i}Gkap_{it} + \beta_{3i}Lab_{it} + \beta_{4i}Open_{it} + \beta_{5i}Hkap_{it} + \beta_{6i}Open * Reprisk_{it} + \beta_{7i}Open * Cim_{it} + \beta_{8i}Open * Ethsion_{it} + \varepsilon_{it} \quad (3.4)$$

where;  $i = 1, 2, \dots, 35$  (countries);  $t = 1, 2, \dots, 30$  (years).  $i = 1, \dots, N$ ,  $t = 2, \dots, T$ ;  $\varepsilon$  is the error term. The intercept term carrying a subscript  $i$  suggests that the intercepts of the selected countries may be different. The coefficients  $\beta_1 \dots \beta_8$  are coefficients.  $\beta_0$  is the intercept. As regards the *a priori* expectations, the coefficients  $\beta_1 \dots \beta_8$  are positively related with the dependent variable, economic growth (Grgdp).

Equation (3.4) can be decomposed into three to show the interaction effects of trade openness and economic, political and cultural institutions on economic growth respectively. This is necessary in order to be able to estimate each individually in order to determine the interaction effect individually. We express these as equations (3.5), (3.6) and (3.7) as follows:

$$Grgdp_t = \beta_{0i} + \beta_{1i}Grgdp_{t-1} + \beta_{2i}Gkap_{it} + \beta_{3i}Lab_{it} + \beta_{4i}Open_{it} + \beta_{5i}Hkap_{it} + \beta_{6i}Open * Reprisk_{it} + \varepsilon_{it} \quad (3.5)$$

$$Grgdp_t = \beta_{0i} + \beta_{1i}Grgdp_{t-1} + \beta_{2i}Gkap_{it} + \beta_{3i}Lab_{it} + \beta_{4i}Open_{it} + \beta_{5i}Hkap_{it} + \beta_{6i}Open * Cim_{it} + \varepsilon_{it} \quad (3.6)$$

$$Grgdp_t = \beta_{0i} + \beta_{1i}Grgdp_{t-1} + \beta_{2i}Gkap_{it} + \beta_{3i}Lab_{it} + \beta_{4i}Open_{it} + \beta_{5i}Hkap_{it} + \beta_{6i}Open * Ethsion_{it} + \varepsilon_{it} \quad (3.7)$$

### 3.2 Data Sources

The data for gross fixed capital formation, human capital, real gross domestic product, labour are sourced from the World Bank's World Development Indicators (WDI), while repudiation risk, contract intensive money and ethnic tension are sourced from the International Country Risk Guide (ICRG). Furthermore, this study employed data covering thirty-five (35) African countries over a thirty-year period; comprising both time series and cross-sectional data. These thirty (35) countries were selected based on the World Bank's (2007) classification of countries into 'moderately outward-oriented', 'moderately inward-oriented' and 'strongly inward-oriented countries'. In addition, they are all developing countries and belong to the African continent. (The list of selected countries is highlighted in the Appendix).

### 4. DATA ANALYSIS AND DISCUSSION

The results in Table 3 present the step-wise estimates of our models. Equation (3.5) was estimated to examine the interaction effect between trade liberalization and economic institutions and the results are presented as regression I. Equation (3.6) was estimated to examine the interaction effect between trade openness and political institutions and the results are presented as regression II. Lastly equation (3.7) was estimated to examine the interaction effect between trade openness and cultural institutions and the results are presented as regression III. The results showed that all the variables are statistically significant and have varying magnitudes on economic growth. The results also revealed that the adjusted  $R^2$  are 0.281, 0.285 and 0.284 in regressions I, II and III respectively. This suggests that independent variables in the model explain 28.1 percent, 28.5 percent and 28.4 percent variations in the dependent variable, Grgdp. The F-statistic results showed that the estimates are statistically significant at 1 percent. The results also revealed that the coefficient of  $Open * Reprisk$  is -0.228 (which is less than 0) while the coefficients of  $Open * Cim$  and  $Open * Ethsion$  are 0.237 and 0.370 (which are greater than 0) respectively. This implies that there is no

interaction effect between trade openness and economic institutions while there is an interaction effect between trade openness and political and cultural institutions.

Therefore, we conclude that the impact of trade openness on economic growth is more significant when strong political and cultural institutions are involved; and less significant when strong economic institutions are involved. Also, since the results of the interactions between trade openness and political institutions are not too far from the interaction effect between trade openness and cultural institutions, we conclude that both political and cultural institutions are important. Hence, there is a need for the African countries to have strong political, cultural and economic institutions. The implication of this interaction effects between trade openness and institutions is that international trade among countries seem to be affected more by strong political and cultural institutions than strong economic institutions. Hence, relative peace and political stability of the SSA countries encourage trading activities to take place among the countries and with other countries of the world.

The results in Table 4 showed that all the coefficients of the explanatory variables are positive and the estimates are consistent with theoretical expectations. The Blundell–Bond (system-GMM) robust estimates indicate that the lagged growth value (first lag) is correctly signed and statistically significant across the sampled African countries. In other words, past realizations of economic growth do produce some significant impact on the current level of economic growth. The stock of capital proxied by gross fixed capital formation showed a very interesting result in the Blundell–Bond robust estimates. One striking observation here is that the stock of capital produced a positive impact on economic growth across the sampled countries over the study period. This variable is also statistically significant at the 5 percent level in the one-step and two-step system GMM options. This result supports the *a priori* expectation. It is therefore expected that capital stock would have a positive impact on economic growth in the selected economies.

**Table 3: Interaction Effect Estimation Results**

DEPENDENT VARIABLE – MEASURE OF ECONOMIC GROWTH (GRGDP)						
VARIABLE	REGRESSION I		REGRESSION II		REGRESSION III	
	LSDV OLS	Pooled	LSDV	Pooled OLS	LSDV	Pooled OLS
Gkap	0.383*** [6.09] (0.000)	0.297*** [5.22] (0.000)	0.381*** [6.05] (0.000)	0.292*** [5.25] (0.000)	0.381*** [6.06] (0.000)	0.284*** [5.26] (0.000)
Hkap	0.283** [1.83] (0.068)	0.098* [1.69] (0.098)	0.274* [1.78] (0.076)	0.096** [2.25] (0.011)	0.284* [1.79] (0.077)	0.087** [2.26] (0.011)
Lab	0.256** [2.59] (0.021)	0.412*** [2.84] (0.001)	0.588*** [2.52] (0.001)	0.211*** [2.84] (0.003)	0.611*** [2.53] (0.002)	0.199*** [2.85] (0.003)
Open	0.053 [1.63] (0.094)	0.024* [2.19] (0.022)	0.080 [1.71] (0.092)	0.076 [1.74] (0.085)	0.082 [1.73] (0.093)	0.078 [1.76] (0.086)
Open*Reprisk	-0.228** [2.65] (0.014)	-0.046* [1.90] (0.067)	-	-	-	-
Open*Cim	-	-	0.237* [1.96] (0.092)	0.343** [2.03] (0.047)	-	-
Open*Ethision	-	-	-	-	0.370* [1.74] (0.094)	0.272** [2.06] (0.048)
Constant	8.433*** [2.09] (0.030)	2.127** [2.08] (0.033)	0.455** [2.09] (0.026)	2.177*** [2.11] (0.009)	0.465** [2.11] (0.028)	2.159*** [2.13] (0.008)
R <sup>2</sup>	0.329	0.192	0.329	0.193	0.331	0.203
Adjusted R <sup>2</sup>	0.281	0.177	0.285	0.187	0.284	0.187
F-stat	5.62 (0.000)	6.27 (0.000)	5.58 (0.000)	6.29 (0.000)	5.57 (0.000)	6.29 (0.000)
Country Dummy	Yes	No	Yes	No	Yes	No
No of Countries	35	35	35	35	35	35
Number of Observations	1050	1050	1050	1050	1050	1050

**Source:** Estimated by the Authors, 2016. **Notes:** Regression I are the results for the interaction effect of trade openness and economic institutions; regression II are the results for the interaction effect of trade openness and political institutions; regression III are the results for the interaction effect of trade openness and cultural institutions respectively.

\* - significant at 10 percent; \*\* - significant at 5 percent; \*\*\* - significant at 1 percent.

Still on the results in Table 4, the implication of this result theoretically is that investment is expected to increase in these African countries which would improve on the economic growth of these economies. In terms of the trade liberalization variable – degree of trade openness (Open), it had the expected positive sign and is statistically significant at 5 percent. A 1 percent change in the degree of trade openness under the two–step system GMM estimates brings about a greater proportionate change in economic growth across the study group. The implication of this is that international trade plays an important role in the growth of the selected African countries. In terms of the interaction effect of institutions and trade openness on economic growth, the results showed that the interaction effect of political and cultural institutions and trade openness have a better influence on economic growth than the interaction effect of economic institution and trade openness on economic growth. Although, their coefficients are correctly signed, they all have positive impact on economic growth of the selected African countries. The F-statistic is the small-sample counterpart of the Wald (Chi-square) statistic and it is a measure of the overall significance of the estimated models and the values here in each of the specifications are considerably not satisfactory because the result in each case is not significant at one, five and ten percents. This is indicative that all the exogenous variables do not jointly explain significantly, the economic growth process across the selected African countries over the study period.

**Table 4: GMM Estimation Results**

Dependent Variable – Grgdp		
SYSTEM-GMM		
Regressors	One-step Collapsed	Two-step Collapsed
(1)	(2)	
Grgdp(-1)	0.268*** (0.000)	0.198*** (0.000)
Gkap	0.441** (0.045)	0.480** (0.042)
Hkap	0.161* (0.083)	0.140** (0.037)
Lab	0.084** (0.045)	0.172** (0.040)
Open	0.281** (0.047)	0.130** (0.048)
Open*Reprisk	0.167** (0.011)	0.178** (0.034)
Open*Cim	0.294** (0.026)	0.246** (0.029)
Open*Ethision	0.182** (0.081)	0.187** (0.028)
Constant	0.299** (0.027)	-1.426*** (0.006)
No. of Instruments	35	35
Country Effects	No	No
F-stat (Wald $\chi^2$ )	66.41	1544.32
F-stat (p-value)	[0.000]	[0.000]
AR(1)	[0.000]	[0.001]
AR(2)	[0.967]	[0.771]
AR(3)	-	[0.541]
No of Observations	1042	1042
Sargan Test (OIR)	[0.045]	[0.045]
Hansen Test (OIR)	-	[0.726]
Number of Countries	35	35

**Source:** Estimated by the Author. **Notes:** The standard errors are robust and consistent in the presence of any pattern of heteroskedasticity and autocorrelation. Robust standard errors are with Windmeijer (2005) finite- sample correction for the two-step covariance matrix which are reported in braces. Probability values are in parenthesis.

## 5. SUMMARY OF FINDINGS, RECOMMENDATIONS AND CONCLUSION

This section presents the summary of major findings of the study, the recommendations made and the conclusions that are drawn; with a view to examining the interaction effect of trade openness and institutions on the economic growth of selected African countries.

### 5.1 Summary of Findings

The main findings of the study are enumerated below:

1. The study found out that there is a significant positive impact of the trade openness variable – degree of trade openness on economic growth of the selected African countries. The implication of this is

that international trade can be positively beneficial to a country especially if the country is an exporter of goods and services rather than being just an importer of goods and services. But the question is has these countries in Africa benefited from trade openness? The answer is not a total yes, because these countries are still tied to the 'apron strings' of the developed countries. Thus, the governments of these countries should embark on policies that will boost industrialization to increase the level of output and as a result increase their levels of exports.

2. The study also found out that trade openness is enhanced more when strong political and cultural institutions are in place than strong economic institutions. The implication of this interaction effects between trade openness and institutions is that international trade among countries seem to be affected more by strong political and cultural institutions than strong economic institutions. The relative peace and political stability of the African countries encourage trading activities to take place among the countries and with other countries of the world. But in addition, economic institutions should be strengthened.

3. The result of the stock of capital variable – Gross Fixed Capital Formation showed that capital is very important in determining the interaction effect of trade openness and institutions on economic growth in the selected African countries. Though, capital has significant positive impacts on the three interaction effects, but it has a higher positive impact in the interaction of trade openness and economic institutions than that of trade openness and political / cultural institutions. The result also revealed that capital has a significant impact on economic growth in the selected African countries in this study. This supports theoretical expectation which postulates a significant influence of capital on economic growth. The implication of this result is that when there is a fall in capital which results in a fall in investment in some of these African countries and this has resulted in the slow rate of growth in these countries over the years. One major cause of this fall in investment can be due to financial misappropriation evident in most of these countries; monies that could have been used for viable economic projects end up in private accounts and pockets. Another hindrance is the fact that foreign investments are falling due to the political and economic instability experienced in some of these SSA countries.

## **5.2 Recommendations**

Based on the findings noted above, we make the following recommendations.

i. Since human capital plays a crucial role in boosting economic growth in African countries, the study strongly recommends that the government should find ways that will be geared towards improving the stock of human capital in the African continent. Some of these include the training and retraining of experts such as lawyers, economists, accountants, among others, in the African countries and their respective ministries such as trade, justice, commerce and industry. This is because a well-informed and trained crop of persons that control policy formulation and implementation in these institutions are essential. This is most crucial in this 21<sup>st</sup> century era which is mostly knowledge-driven.

ii. It is also recommended that there is a need to ensure that contracts are made easily enforceable. This is a very important tool that can be used to improve trade openness in African countries. The reason for this is that it will make the economic agents involved in international trade to be optimistic as they are sure that the moral hazards and adverse selection challenges are reduced. Coupled with this is the fact that the rest of the world will find it easier to trade with countries that are reputed for adequate contract enforcement more than others that are not so reputable. If effective contract enforcement procedures are in place, transaction costs will be reduced and this will eventually improve the level of trade openness in the sub-region.

iii. Lastly, the study recommends that the governments in these African countries should develop the economic, political and cultural institutions simultaneously. This is achievable when the relevant authorities in a country develop an environment in which fair and predictable rules form the basis for economic and social interactions. This in turn would measure the quality of contract enforcement, by the police and the courts. It also entails the government's administrative capacity in enforcing the law in order to forestall strong legal systems. In addition to this, is the provision of a conducive peaceful political atmosphere and friendly cultural interactions needed for investment, trade and economic growth.

## **5.3 Conclusion**

This study examined the interaction effect of trade openness and institutions on economic growth in selected African countries. In order to contribute to existing knowledge, this study used a sample of thirty-five (35) countries in Africa for the period 1985-2014 to empirically evaluate which combinations of economic, political, cultural institutions and trade openness will have better effect on economic growth in Africa. The major findings from this study revealed that the interaction of political and cultural institutions with trade openness



have significant impact on economic growth, than that of economic institutions and trade openness. For these African countries to harness maximum gains from international trade, there has to be the presence of strong institutions. Therefore, there is a need for the governments of African countries, especially the sampled countries to develop strong institutions in order to ensure the growth of their economies vigorously so that they can compete with the developed countries.

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## APPENDIX: LIST OF COUNTRIES AND THEIR IDENTIFIER (ID)

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id	Central	id	East and Southern Africa	id	West Africa	id	North Africa
1	Angola	3	Botswana	2	Benin Republic	22	Morocco
4	Burundi	10	Djibouti	6	Cape Verde	33	Tunisia
5	Cameroon	12	Ethiopia	9	Cote d'Ivoire		
7	Chad	17	Kenya	14	Gambia		
8	Congo	18	Libya	15	Ghana		
11	Equatorial Guinea	19	Lesotho	25	Niger		
13	Gabon	20	Madagascar	26	Nigeria		
16	Guinea	21	Malawi	28	Senegal		
27	Rwanda	23	Mozambique	32	Togo		
		24	Namibia				
		29	South Africa				
		30	Sudan				
		31	Tanzania				
		34	Uganda				
		35	Zambia				

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**Source:** UNCTAD (2009) Handbook of Statistics; WTO (2009) International Trade Statistics