Comparative Analysis of the Interlinks between Globalization, Governance and Development in African Economic Communities

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Abstract
This paper examines the complex causal relationship between globalization, governance and development in African countries using a comparative approach. The sample comprises 51 countries in five groups over the period 1996–2018. The cointegration analysis shows that there is a long-run relationship between globalization, governance and human development in Africa as a whole sample. However, at regional level, such a relationship does not exist in the Economic Community of Central African States (ECCAS) bloc. In the long run, globalization and governance affect positively human development in all samples. The findings indicate also that there was unidirectional causality from globalization and governance to development at the continental level. At the regional level, there is unidirectional causality from globalization to development in East African Community (EAC) and Southern African Development Community (SADC). In these regions, there is also a bidirectional causality between governance and development. In the ECCAS, the causality runs from governance to development and from development to globalization in the Economic Community of West African States (ECOWAS). The results support no evidence of causality between the variables in North Africa (Arab Maghreb Union, AMU). Finally, the overall globalization index does not Granger-cause governance. The main implication of our study is that improving governance and development is a very challenging issue, and the impact of globalization should not be neglected.

Keywords Globalization · Governance · Development · Panel causality · Africa

JEL Classification F15 · F63 · O10 · O55

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Introduction

This paper aims at assessing the linkages between and among globalization, governance and development in African Economic blocks. Its main motivation is that globalization, governance and development are important issues in the modern time. However, the relationship between these three concepts is not a clear-cut one because (i) there are theoretical arguments supporting a positive as well as a negative link and (ii) it could be a bidirectional relationship. Consequently, the empirical literature presents ambiguous results. To shed new light on this issue, we examine the nature of Granger causality by applying the Dumitrescu and Hurlin (2012) Granger non-causality test.

Before moving, let us define the concepts. First, one can easily relate anything to the concept of globalization, as it is so broad, diverse, vague and volatile. The word globalization has been used in different context and with so many different connotations. When people use the word globalization, they mean what they choose it to mean. Brief, Globalization is a “complex and multifaceted” phenomenon (Guttal, 2007) which has a permanent influence on world economies, increasingly integrated and open to the exterior (Gandolfo, 2016).

Second, the term governance is defined as the traditions and institutions by which authority in a country is exercised. This includes (i) the procedure by which governments are selected, monitored, accountable and replaced, (ii) the ability of the government to formulate and implement prudent policies effectively and (iii) the respect of citizens and the state for the institutions. The recent literature emphasizes the so-called good governance defined by Bundschuh-Rieseneder (2008) as the favorable political framework conditions for social, ecological and market-oriented development as well the responsible use of political power and public resources by the state.

Third, development refers in broad assessment to the improvement in the quality of life. Development as a concept has attracted many definitions and interpretations among scholars. Nonetheless, it addresses the process of transforming a society positively. Therefore, it is interesting to view “globalization”, “governance” and “development” as the three broad concepts for transformation.

Globalization, governance and development affect each other in very complex mutual relationships. Numerous studies have been conducted to ascertain the effects of globalization on developing countries. However, there is a controversy over its likely effects on economic well-being, yet the subject remains open for further examination. Behind the globalization-development nexus, one can reasonably find a mediating role of another factor, the institutional quality (governance).

Also, a closer look at the literature reveals several gaps and shortcomings, which the present study wishes to address: First, the literature shows contradictory findings on the relationship between globalization and development, particularly for developing countries. According to UNDP (2012), globalization has brought a lot of benefits such as helping countries and regions by adopting a number of programmes and policies aimed at deriving immense benefits accruable from the rapid and intensive global interactions and interconnections especially with respect to poverty alleviation and improvement in the well-being of the people. However, globalization has
also brought with it a variety of problems that have worsened human welfare. How African countries have fared in this direction remains controversial among social science scholars and policymakers.

Second, the literature on the effect of globalization on development has failed to consider the role of regional integration (Asongu et al., 2020 is an exception). In this paper, we take the analysis to the African regional economic blocks. Third, it is difficult to find empirical studies that address the Granger causality between globalization, governance and development (except Boţa-Avram et al., 2018; Cervantes et al., 2020); normally, each variable is analyzed in relation to other macroeconomic indicators.

Thus, we contribute to the literature by filling these gaps and showing up the differences across African regions. Contrary to previous studies which looked at the relationship between Globalization and Governance and between Globalization and development separately, this paper is an attempt to look at the interlinks between the three concepts using a comparative approach.

Using a panel of 51 countries grouped into five African economic blocks over the period running from 1996 to 2018, we run two main analyses: cointegration and causality. First, the cointegration analysis shows that there is a long-run relationship between globalization, governance and human development in Africa as a whole sample. However, a look at regional blocks indicates that such a relationship does not exist in the ECCAS bloc but in the other blocks. In the long run, globalization and governance affect positively human development in all samples. Second, the finding indicates that there was unidirectional causality from globalization and governance to development at the continental level. At the regional level, there is unidirectional causality from globalization to development in East African Community (EAC) and Southern African Development Community (SADC). In these regions, there is also a bidirectional causality between governance and development. In the Economic Community of Central African States (ECCAS), the causality runs from governance to development and from development to globalization in The Economic Community of West African States (ECOWAS). The results support no evidence of causality between the variables in North Africa (Arab Maghreb Union, AMU). Finally, the overall globalization index does not Granger-cause governance. We discuss the policy implications of these results in the paper.

The paper is organized as follows. Section 2 reviews literature on the globalization-governance-development nexus. Section 3 explains the data and the methodology. Section 4 presents the findings and discussion, and Sect. 5 concludes

**Literature Review**

In this section, we present a brief review of the literature related with the interlinks between globalization, governance and development. In order to improve its understanding, first, we present those studies which address the relationship between globalization and economic development; then, those analyzing globalization and governance, and finally recent works on Granger causality.
Globalization is a multifaceted phenomenon encompassing not only economics but also other fields of study including politics and sociology. The economic components of globalization include trade, investment, production, finance, competition and demand. There are many positive but also negative aspects which accompany globalization. These effects are analyzed along two strands of literature (the neoliberal and the hegemonic theories). First, the neoliberal school contends globalization is an omnipresent power of “creative destruction” in that global trade, cross-border investment and technological innovation improve production efficiency and generate extraordinary prosperity despite replacement of old jobs and fall in wages for unskilled workers. Globalization manages these potential threats by signaling to the latter group about the payoffs from acquiring new skills. Rewards can spread over the masses “if the labor market is responsive to changes in supply and demand” (Grennes, 2003).

The second school conceives globalization as a new hegemonic project (Asongu, 2013). According to Petras and Veltmeyer (2001), globalization demonstrates the creation of a new world order architecture by global powers (industrial countries, international financial institutions, etc.), with prime objective of facilitating capitalist accumulation in an environment of unconstrained market transactions.

Amid the globalization dimensions, the focus has been put on the financial and economic ones. While a large section of economists has emphasized the growth-enhancing effects of financial globalization, urging the developing countries to open up their capital markets to external flows, there are others who have highlighted the potential risks arising out of financial globalization, which limit the positive effects on growth. The understanding on financial globalization has only worsened since the 2008 Global Financial Crisis. This leaves the developing economies with little clue about whether financial globalization can lead to growth. The existing empirical studies (Nasreen et al., 2020; Hasan, 2019; Kose et al., 2006; Prasad et al., 2007) do not seem to provide any clear answer to this question as their results vary across regions, over time and also depend on types of flows (Bhanumurthy & Kumawat, 2020).

Borensztein et al. (1998) found the effect of globalization on growth through effective allocation of domestic resources, diffusion of technology, improvement in factor productivity and augmentation of capital to be positive. On the contrary, Krugman (1993) opined that international financial integration is not an important component for economic development, because large amounts of capital flows from developed countries to developing countries do not necessarily lead to economic growth of home countries.

At the theoretical level, McKinnon (1973) and Shaw (1973) found that financial globalization has positive impact on the development of the real sector with possible causation from financial globalization to economic development and growth. At the empirical level, many studies have shown positive correlation between financial globalization and economic growth (see, for example, King & Levine, 1993; Aghion, 2007).

Other studies go beyond the effect on growth and looked at the impact of globalization on development (Tsai, 2006; Asongu, 2013). For example, in Asongu (2013)
the findings broadly indicate that while trade globalization improves human development (consistent with the neoliberal theory), financial globalization has the opposite effect (in line with the hegemony thesis). The “life expectancy” component of the Human Development Index weighs most in the positive impact of trade globalization on human emancipation.

Shafeeq et al. (2019) investigate the impact of globalization on the quality of life in the Asian countries for the period from 1995 to 2015. They found that there is a positive impact of political, economic and social globalization on the quality of life in the Asian countries in the long run. The results of their study show that globalization enhances the quality of life of their residents by improving Human Development Index of Asian countries. Not only KOF Index but its main aspects (political, economic and social globalization) also play a role in improving quality of life in the Asian countries.

Potrafke (2015) estimated the evidence on globalization. He discussed the significance of globalization by surveying the empirical globalization literature. Empirical findings reveal that globalization expanded human rights, promoted the gender equality and stimulated economic growth. It did not destroy welfare state activities, neither had it any significant effect on labor market interaction. Globalization increased the income inequality in a society. The consequences of globalization are generally favorable.

Sapkota (2011) evaluates the impacts of globalization on quality of life, particularly on human development, gender development and human poverty in developing countries that globalization (in terms of its comprehensive indexes and key elements) not only promotes human and gender development, but also significantly reduces human poverty. Not surprisingly, all the three aspects of globalization (economic, social and political) contribute to the overall effect of globalization. In general, the results from the key elements of globalization are consistent with the results from the comprehensive indexes. However, it is also observed that political and social globalization, FDI and international migration were insignificant to gender-related development. Thus, further research is suggested for appropriate policy recommendations to make these variables significant on promoting gender aspects of development.

**Globalization-Governance Nexus**

In this sub-section, we survey available theoretical explanations of causal relationships between globalization and governance.

Microeconomic theory helps us identify trade policy, competition by foreign producers and international investors, and openness-related differences in institution-building costs and benefits, as three major transmission mechanisms through which openness affects a country’s corruption levels.

Analyzing the impact of globalization on domestic public policy can be derived from a variety of theoretical perspectives of the nation-state in international political economy. One school of thought argues that international global developments and trends determine national policies. According to this view,
national governments are powerless to influence the outcomes caused by developments in the global economy. The state “can no longer be conceived of as the appropriate political units for either resolving key policy problems or managing effectively a broad range of public functions (Held & McGrew, 2009).”

International competition over capital and markets, for instance, compels national governments to reform domestic policies in order to attract foreign investors and business. Another perspective contends that the national polity reacts to global trends and, in some instances, even counteracts them. In this view, governments respond to external pressures through the process of institutional transformation. Domestic institutions learn to adapt or adjust to the demands of the external environment while at the same time retaining their ability to independently chart their own policy course. However, the traditional basis of authority shifts away from the state and now involves a variety of non-state actors. While the state remains a core player, it is compelled to work together or sometimes play a supporting role to these private agents. In this case, new channels or processes are opened up, which require new forms of governance.

The importance of the state in the age of globalization cannot be stressed enough. While the state may suffer some loss of its traditional functions, new roles emerge that require the participation of the state.

The internationalization of domestic economies is likewise creating pressures for greater political participation and good governance. Weiss (1998) contends, developmental success depends on the “ability of a state to adapt to external shocks and pressures by generating ever new means of governing the process of industrial change.”

Global markets require governments to be more transparent, responsive and efficient. Pressure also emanates from below, with domestic society calling for greater participation, public accountability, transparency and justice. The impact of external pressures on national economies depends to a large degree on the strength or weakness of its domestic institutions. States unable to adapt to the constantly changing environment would be seriously disadvantaged given the competitive nature of the world economy.

Asongu (2013) assessed how globalization is instrumental in the fight against corruption through human development (economic and social dimensions) and government quality (political dimension). He found that globalization is a powerful tool in fighting corruption. According to his results, the assertion that globalization is an important tool in fighting corruption only in middle- and high-income countries is partially true. For low-income countries, that globalization has no significant impact on corruption is true.

The trend of globalization since the early 1990s has had profound impact on world economies. It is reducing the importance of state boundaries.

However, this impact is conditional to many factors among which political and institutional determinants.

Globalization and Governance jointly interact to effect Development and vice versa. The objective of this paper is to compare the interrelation between these three phenomena in Africa.
Lalountas et al. (2011) have established that, when confronted with globalization, nations with higher income are comparatively more preoccupied with the political and social dimensions of globalization, and therefore they enjoy positive externalities in terms of incentives for better measures in fighting corruption. Conversely, countries with lower income are more concerned with the economic dimension of globalization, and therefore the effect on corruption may be less apparent. Asongu (2014) has confirmed the findings of Lalountas et al. (2011) within African countries.

The empirical literature has identified numerous institutions which influence economic growth, including governance, law enforcement, justice, regulations, tax administration and institutions that manage monetary and fiscal policies. The seminal paper of Acemoglu et al. (2001) exemplifies the modern, economic literature linking institutions to economic development and has spurred much research on the issue (Góes, 2016). The research has been aided and abetted by the emergence of datasets providing quantitative measures of institutional quality. Despite these parallel efforts linking institutions and globalization to economic growth, it is remarkable that not much research exists exploring the interaction between institutions and globalization in jointly affecting development.

Recent Works on Granger Causality

It is difficult to find empirical studies that address the Granger causality between globalization, governance and development (except Boţa-Avram et al., 2018; Cervantes et al., 2020); normally, each variable is analyzed in relation to other macroeconomic indicators as reviewed above.

Boţa-Avram et al. (2018) test the causal linkages between the quality of country-level governance, economic growth and a well-known indicator of economic sustainable development, for a large panel of world-wide countries for a period of 10 years (2006–2015). While there are some prior studies that have argued the bidirectional causality between good public governance and economic development, this study intends to provide a new focus on the relationship between country-level governance and economic growth, on one hand, and between country-level governance and adjusted net savings, as a selected indicator of economic sustainable development, on the other hand. Four hypotheses on the causal relationship between good governance, economic growth and sustainable development were tested by using Granger non-causality tests. Our findings resulting from Granger non-causality tests provide reasonable evidence of Granger causality from country-level governance to economic growth, but from economic growth to country-level governance, the causality is not confirmed. In what regards the relationship between country-level governance and adjusted net savings, the bidirectional Granger causality is not confirmed.

Cervantes et al. (2020) analyze the differential patterns of globalization in four world-wide areas predefined by The World Bank (namely, High-, Upper-Middle-, Lower-Middle- and Low-Income countries). Their main objective is to estimate the effect of globalization on some economic development indicators (specifically per capita income and public expenditure on health) in 217 countries over the period
2000–2016. Their empirical approach is based on the implementation of the so-called Toda-Yamamoto (1995) procedure, which has been used to analyze the possible causal relationships between the involved variables. Their results show that there is a causal relationship in the sense of Granger between globalization and public expenditure on health, except in High-Income countries. This can be interpreted both negatively and positively, confirming the double character of globalization, as indicated by Stiglitz (2004).

The present work contributes to this research line by exploring Granger causality from different approaches in order to provide empirical evidence on the existence or absence of causality between globalization, governance and development in African economic blocks, and so, fill in the gap existing in literature.

**Empirical Setting**

**Data**

The analysis is undertaken for the whole Africa and then for regional economic groups (ECCAS, EAC, ECOWAS, SADC and UMA). The sample period runs from 1996 to 2018. Three main variables are considered in this study, namely the Human Development Index (HDI), the KOF globalization Index (KOFGI) and the Institutional Quality (IQ).

The KOF index was chosen as a proxy variable for globalization. For instance, more recent efforts at measuring globalization were built on the conceptualization by Keohane and Nye (2000) of three different relevant dimensions of globalization: (1) economic: long distance flows of goods, capital and services as well as information and perceptions that accompany market exchanges, (2) political: the diffusion of government policies internationally, and (3) social: the spread of ideas, information, images and people (Dreher, 2006). Dreher et al. (2008) have updated the so-called KOF index of globalization to capture each of these dimensions (as well as additional sub-dimensions). Gygli et al. (2019) introduce the revised version of the KOF Globalization Index, a composite index measuring globalization for every country in the world along the economic, social and political dimension. The second revision of the index distinguishes between de facto and de jure measures along the different dimensions of globalization. We also disentangle trade and financial globalization within the economic dimension of globalization and use time-varying weighting of the variables. The new index is based on 43 instead of 23 variables in the previous version. For all dimensions, this index was created using comprehensive data collected annually, from 1970 to 2018. In this paper, we make use of this new measure and its various components, to arrive at a more detailed and nuanced assessment of the impact of different dimensions of globalization on governance and development (Table 1).

The Institutional Quality is computed as an unweighted average of World Governance Indicators (WGI) comprising the control of corruption (CC), the government effectiveness (GE), the political stability and absence of violence (PS), the regulatory quality (RG), the rule of law (RL) and the voice and accountability (VA) (Fig. 1).
Table 2 shows the correlation matrix of the variables within the groups of countries. Apparently, the KOF overall globalization index is positively correlated with Human Development Index within all the groups. Its coefficient is 0.74 in the whole sample of African countries, and it ranges from 0.47 (UMA) to 0.85 (ECCAS). Likewise, the correlation between globalization and governance is positive with a coefficient varying from 0.30 (ECOWAS) to 0.76 (EAC). Regarding the correlation between governance and development, it resorts positive everywhere apart in North Africa.

Table 1  Descriptive statistics

| Variables | N | Mean | sd | Min | Max | N | Mean | sd | Min | Max |
|-----------|---|------|----|-----|-----|---|------|----|-----|-----|
| Africa    | ECCAS |
| HDI       | 1123 | 0.489 | 0.116 | 0.236 | 0.796 | 176 | 0.484 | 0.112 | 0.298 | 0.702 |
| KOFGI     | 1173 | 46.01 | 10.06 | 22.53 | 72.35 | 161 | 41.98 | 7.038 | 27.15 | 54.76 |
| IQ        | 1027 | −0.666 | 0.607 | −2.449 | 0.880 | 140 | −0.961 | 0.423 | −1.698 | 0.169 |
| EAC       | ECOWAS |
| HDI       | 264 | 0.468 | 0.104 | 0.260 | 0.796 | 318 | 0.431 | 0.0844 | 0.236 | 0.651 |
| KOFGI     | 299 | 41.44 | 11.50 | 22.53 | 72.35 | 345 | 45.56 | 7.418 | 25.75 | 61.83 |
| IQ        | 268 | −0.863 | 0.697 | −2.449 | 0.854 | 299 | −0.600 | 0.498 | −1.808 | 0.630 |
| SADC      | UMA   |
| HDI       | 227 | 0.509 | 0.101 | 0.258 | 0.728 | 138 | 0.639 | 0.0932 | 0.430 | 0.759 |
| KOFGI     | 230 | 49.48 | 7.945 | 30.57 | 70.79 | 138 | 56.00 | 9.522 | 33.40 | 70.53 |
| IQ        | 200 | −0.309 | 0.624 | −1.657 | 0.880 | 120 | −0.641 | 0.431 | −1.904 | 0.0637 |

Source: Author’s calculations

Fig. 1  Global trend of overall globalization and its sub-indexes (1970–2017)
|                  | Africa | ECCAS | EAC |
|------------------|--------|-------|-----|
|                  | KOFGI  | KOFGI | HDI | HDI |
| HDI              | 1.0000 |       | 1.0000 | 1.0000 |
| KOFGI            | 0.7382* | 1.0000 | 0.8476* | 1.0000 |
| IQ               | 0.3896* | 0.5371* | 1.0000 | 0.5169* |
|                  |        |       | 0.3068* | 1.0000 |
|                   | KOFGI  | HDI   | HDI | HDI |
| HDI              | 1.0000 |       | 1.0000 | 1.0000 |
| KOFGI            | 0.7291* | 1.0000 | 0.7532* | 1.0000 |
| IQ               | 0.4258* | 0.3011* | 1.0000 | 0.5419* |

Authors’ estimations

*Denotes significance at the 0.05 level
Methodology

The overall objective of the analysis undertaken is to examine the plausible long-term relationship between Globalization, Governance and Development. To this end, we follow a four-step methodology. First, Pesaran CD test is conducted to check the presence of cross-sectional dependence across the countries in our samples. Second, upon the detection of cross-sectional dependence, an appropriate unit root test taking the cross-sectional dependence into consideration (i.e. Pesaran’s CIPS test) is carried out to assess the stationarity properties of the series. Third, once we see that our series are I(0) or I(1), then Westerlund (2005) panel cointegration test is implemented. After finding cointegration association among series, Pooled Mean Group (PMG) and MG estimation methods are employed to get the short-run and long-run coefficients. Last, Dumitrescu and Hurlin (2012) Granger causality test is employed to reveal the direction of causality between the series.

PMG technique is pooling the long-run parameters while avoiding the inconsistency problem flowing from the heterogeneous short-run dynamic relationships. Plus, the PMG relaxes the restriction on the common coefficient of short run while maintaining the assumption on the homogeneity of long-run slope. The estimation of the PMG requires reparameterization into error correction system.

Dumitrescu and Hurlin (2012) acknowledged that in many economic matters, it is highly probable that if a causal relationship exists for a country or an individual, it also exists for some other countries or individuals. In this case, the causality can be more efficiently tested in a panel context with NT observations. The test can be used if time dimension (T) is bigger or smaller than cross-section dimension.

The causal relationship between Y and X is tested by the following model:

$$Y_{it} = \alpha_1 + \sum_{k=1}^{K} \gamma_{1k} Y_{it-k} + \sum_{k=1}^{K} \beta_{1k} X_{it-k} + \varepsilon_{1t}$$

where K denotes the optimal lag length.

The null hypothesis of the test is there is no causality relationship from X to Y in all the cross-sectional units, while alternative hypothesis is that there is causality from X to Y in some cross-sectional units. Dumitrescu and Hurlin (2012) calculate individual Wald statistics for each cross-sectional unit, then calculated the Wald statistics of the panel by taking arithmetic average of the individual Wald statistics. Dumitrescu and Hurlin (2012) suggest the use of test statistics with asymptotic distribution when \(T>N\), and test statistics with semi-asymptotic distribution when \(T<N\).

In the interpretation of Dumitrescu and Hurlin (2012) panel Granger causality test, if \(T\) is bigger than \(N\), Zbar statistic (Zbar) is considered but if \(T\) is smaller than \(N\), Zbar tilde statistic (Zbart) is considered. In this study, our analysis follows two strategies. First, we investigate Granger causality considering the overall sample of African countries (\(N=1\)). Second, we take the analysis to the regional level considering five African regions. In the first case, Zbar tilde statistic (Zbart) is considered as \(T\) is smaller than \(N\) (Continental Africa). In the second case, Zbar statistic (Zbar) is considered.
In order to analyze Granger causality between these three variables, we define for each pairwise the null hypothesis—and consequently, its alternative hypothesis. In addition, the superscript variable, $A$, denotes the membership in each of the six groups of countries analyzed, that is to say, $A =$ Africa, ECCAS, EAC, ECOWAS, SADC and UMA.

Regarding the causal link between globalization and development:

- $H_0$: KOFGIA does not Granger-cause HDIA against the alternative hypothesis
- $H_1$: KOFGIA does Granger-cause HDIA
- $H_0$: HDIA does not Granger-cause KOFGIA against the alternative hypothesis
- $H_1$: HDIA does Granger-cause KOFGIA

Regarding the causal link between governance and development: we derive:

- $H_0$: HDIA does not Granger-cause IQA against the alternative hypothesis
- $H_1$: HDIA does Granger-cause IQA
- $H_0$: IQA does not Granger-cause HDIA against the alternative hypothesis
- $H_1$: IQA does Granger-cause HDIA

Regarding the causal link between governance and development, we derive:

- $H_0$: KOFGIA does not Granger-cause IQA against the alternative hypothesis
- $H_1$: KOFGIA does Granger-cause IQA
- $H_0$: IQA does not Granger-cause KOFGIA against the alternative hypothesis
- $H_1$: IQA does Granger-cause KOFGIA

Thus, the rejection of the null in one of the two equations of each combination would evidence the existence of unidirectional Granger causality, while the rejection of the null in both equations would indicate bidirectional Granger causality. The non-rejection of the null hypothesis in the two equations of each combination would show absence of Granger causality between the two dependent variables concerned.

**Results**

**Results for Cross-Sectional Dependence and Unit Root Tests**

Table 3 describes the results of cross-section dependence in the groups of countries. This study considers the outcomes of the Pesaran CD test. The results indicate that globally we can reject the null hypothesis of no cross-section dependence.

After the cross-sectional dependence results, the next step is to check the unit root of the selected variables. We used the second-generation unit root test of cross-sectional augmented Im, Pesaran and Shin (CIPS) test proposed by Pesaran (2007) due to the issue of cross-sectional dependence, and results of CIPS unit root test are given in Table 4. The CIPS test assumes cross-sectional dependency and is valid for series with different lags and unbalanced panels. The null hypothesis—that is, all
panels contain unit root—is tested against the alternative hypothesis—that is, some panels are stationary.

When we examined the results of the test, we saw that the probability value for the IQ was smaller than 5% in the ECCAS. Therefore, we rejected the null hypothesis and accept the alternative hypothesis and concluded that IQ was I(0) with a 95% in that region. On the other hand, the probability values of all the variables were higher than 5% at the level, so we accepted the null hypothesis, and it meant that these variables had unit root at the level in every region. Later, we took the first differences of these variables and again tested their stationarity and found that the probability values of these variables were smaller than 5%, rejected the null hypothesis and concluded that these variables were I(1) with 95% as seen in Table 4.

Panel Cointegration and Mean Group Estimation

Table 5 presents the results of Westerlund (2005) cointegration test. After going through the findings in all samples, we see that the three series are cointegrated at least at 10% level. This finding suggests that series of globalization, governance and development move together in the long run.

| Variables | AFRICA | ECCAS | EAC | ECOWAS | SADC | UMA |
|-----------|--------|-------|-----|--------|------|-----|
| HDI       | 131.42*** | 18.05*** | 32.12*** | 42.14*** | 27.23*** | 9.40*** |
| KOFGI     | 128.43*** | 15.71*** | 30.75*** | 37.86*** | 24.63*** | 16.02*** |
| IQ        | 1.70* | 2.54** | 1.37 | −0.87 | 3.37*** | 4.25*** |

Source: Authors’ estimations

***, **, * indicate rejection of the null hypothesis at the 1, 5 and 10% levels of significance, respectively

| Variables | Level  | 1st difference | Level  | 1st difference | Level  | 1st difference |
|-----------|--------|----------------|--------|----------------|--------|----------------|
| HDI       | 1.017  | −11.948***     | 1.517  | −3.330***      | 0.459  | −4.987***      |
| KOFGI     | −1.409* | −15.932***     | 0.628  | −4.600***      | −1.303 | −7.533***      |
| IQ        | −0.882 | −14.493***     | −2.540*** | −4.287***     | −0.326 | −5.263***      |

| Variables | Level  | 1st difference | Level  | 1st difference | Level  | 1st difference |
|-----------|--------|----------------|--------|----------------|--------|----------------|
| HDI       | −0.293 | −6.009***      | 0.131  | −3.267***      | 1.442  | −2.578***      |
| KOFGI     | −1.274 | −7.424***      | 0.205  | −3.877***      | 0.154  | −3.041***      |
| IQ        | −0.123 | −5.266***      | −1.514* | −6.407***     | 0.150  | −6.697***      |

Source: Authors’ estimations

***, **, * indicate rejection of the null hypothesis at the 1, 5 and 10% levels of significance, respectively
In Table 6, we report estimates of a panel error correction model with heterogeneous slopes. We use the Pooled Mean Group (PMG) methodology introduced by Pesaran et al. (1999). As we can observe, the error correction terms are negative and significant in quite all specifications apart in ECOWAS region. Thus, the error correction representations are validated. The Hausman test allows discriminating among different levels of heterogeneity. Under the null hypothesis of this test, the PMG estimator is efficient in the whole sample (AFRICA) and four sub-samples (ECCAS, EAC, SADC, AMU) when we consider a significance level of 5%. However, the MG estimator is superior to PMG in the ECCAS region. So, the results of the regressions which is estimated by PMG estimator is taken into account when the results are interpreted.

For the whole AFRICA, EAC, ECOWAS and SADC, the PMG estimates of the long-run coefficients of globalization on Human Development are respectively 0.34, 0.28, 0.42 and 1.62 and statistically significant at the 1% level. It implies that greater level of globalization increases development in these regions in the long run. These results are in line with Mullings (2018) who found that while institutional quality robustly and positively affects growth, the direct effect of economic globalization is not significant and the interaction effects, perhaps as a consequence, are muted. Direct and interaction effects of institutional quality and economic globalization on growth are, however, observed for the sub-sample of developing countries, the case of Africa.

Excluding the ECCAS region, the average governance indicator has a positive effect on development in the long run. Likewise, in the short run, the effect goes in the same way when one looks at the estimation results in columns (1) and (3). This corroborates Bonuedi et al. (2019) who found a strong positive relationship between good governance and quality of life. They revealed that good governance is a factor that contributes to improved lives in low and middle-income countries. They accentuate that a country with poor governance systems is faced with the risk of impoverishment. Akobeng (2016) postulates that for reduced poverty levels in sub-Saharan Africa, there should be strong institutions devoid of corrupt practices, shady deals, scandals and unnecessary bureaucracies. Anyanwu (2014) echoes that in the Northern and SSA region, blending factors such as urbanization, effective governance, local level investments and education with sound economic policies will go a long way to positively impact on growth and development.

Overall, the error correction term (ec) values are low, slightly above 1%, implying that shocks need a longer adjustment time to return to equilibrium. Muye and Muye (2017) find similar effects for the ECOWAS in their analysis of the relationship between globalization, institutions and financial development.
Table 6  MG and PMG estimation results

| Variables | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) |
|-----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|
|           | Africa | ECCAS | EAC | ECOWAS | SADC | UMA |
| Long run  | PMG | MG | PMG | MG | PMG | MG | PMG | MG | PMG | MG | PMG | MG |
| lnKOFGI   | 0.3403*** | 0.2215 | −0.4545 | 0.1197 | 0.2772*** | −0.2350 | 0.4159*** | 0.8797*** | 1.6210*** | −0.09640 | 0.07243 | 0.1378 |
|           | (0.3667) | (0.4009) | (0.7559) | (2.726e−07) | (0.7311) | (0) | (2.722e−06) | (0) | (0.9065) | (0.1849) | (0.5366) |
| IQ        | 0.07815*** | 0.1757 | −0.3994 | −0.2516 | 0.02812 | 0.08607 | 0.06958*** | 0.1362** | 0.1008** | 0.8223 | 0.09110*** | −0.1259 |
|           | (0.1940) | (0.1605) | (0.3202) | 0.3359 | (0.5268) | (6.024e−07) | (0.02875) | (0.03655) | (0.1703) | (0) | (0.2568) |
| ec        | −0.1106*** | −0.2057*** | −0.03093 | −0.2051 | −0.1681*** | −0.2157*** | −0.1461*** | −0.2158*** | −0.1096*** | −0.1207*** | −0.2207 | −0.3029* |
|           | (1.965e−08) | (1.427e−07) | (0.2717) | (4.866e−05) | (0.00915) | (0.005691) | (6.557e−05) | (3.239e−05) | (9.375e−04) | (0.1941) | (0.05536) |
| Short run | D. lnKOFGI | −0.03265 | −0.08006*** | 0.1616 | −0.02550 | −0.07025 | −0.08580** | −0.06479* | −0.09140** | −0.1458*** | −0.1374*** | −0.01314 | −0.008275 |
|           | (0.2311) | (4.492e−04) | (0.2611) | (0.8054) | (0.1336) | (0.03760) | (0.05694) | (0.01841) | (0.003483) | (1.311e−04) | (0.5453) | (0.8740) |
| D.IQ      | 0.01228* | 0.01255* | 0.06905*** | 0.008419 | 0.005846 | −0.003759 | −0.01800* | 0.02178 | 0.02078 | 0.004489 | 0.01022 |
|           | (0.07911) | (0.08923) | (0.002835) | (0.006304) | (0.2210) | (0.3739) | (0.6705) | (0.09125) | (0.1408) | (0.1279) | (0.6726) | (0.4098) |
| Constant  | −0.2031*** | −0.6411*** | 0.01888 | −0.7838 | −0.2826*** | −0.3842*** | −0.3292*** | −0.7660*** | −0.7575*** | −0.8463*** | −0.1069 | −0.3340* |
|           | (1.670e−07) | (1.426e−05) | (0.3000) | (0.3534) | (1.196e−04) | (0.01115) | (0.007775) | (0.002171) | (6.311e−05) | (9.437e−05) | (0.1904) | (0.06391) |
| Observations | 793 | 793 | 112 | 112 | 189 | 189 | 236 | 236 | 160 | 160 | 96 | 96 |
| Chi2      | 0.2915 | −12.257 | 1.0270 | 6.2372 | 1.2066 | 5.4224 |
| Probability > chi2 | 0.8644 | 1 | 0.5984 | 0.04422 | 0.5470 | 0.06646 |

Source: Author’s calculations
Table 7 Results of Dumitrescu and Hurlin (2012) panel causality test

| Region   | Null hypothesis       | Test statistics | Bootstrap critical values | P value | zbar_pv | zbart_pv |
|----------|-----------------------|-----------------|---------------------------|---------|---------|---------|
|          |                       | Zbar | Zbart | zbarb_cv | zbartb_cv |         |         |
| AFRICA   | KOFGI ~ HDI           | 26.1 | 20.9  | 7.33      | 5.51      | 0       | 0       |
|          | HDI ~ KOFGI           | 11   | 8.54  | 14.6      | 11.4      | 0.24    | 0.24    |
|          | IQ ~ HDI              | 9.83 | 7.54  | 4.50      | 3.20      | 0       | 0       |
|          | HDI ~ IQ              | 8.80 | 6.71  | 11.4      | 8.81      | 0.19    | 0.19    |
|          | IQ ~ KOFGI            | 4.47 | 3.17  | 7.47      | 5.62      | 0.32    | 0.32    |
|          | KOFGI ~ IQ            | 5.77 | 4.23  | 11.6      | 9.02      | 0.41    | 0.41    |
| ECCAS    | KOFGI ~ HDI           | 0.11 | −0.092| 5.30      | 4.15      | 0.94    | 0.97    |
|          | HDI ~ KOFGI           | 4.98 | 3.89  | 7.60      | 6.03      | 0.18    | 0.18    |
|          | IQ ~ HDI              | 2.85 | 2.15  | 2.91      | 2.20      | 0.055   | 0.055   |
|          | HDI ~ IQ              | 0.76 | 0.44  | 6.34      | 5         | 0.83    | 0.88    |
|          | IQ ~ KOFGI            | 3.83 | 2.95  | 5.11      | 3.99      | 0.12    | 0.12    |
|          | KOFGI ~ IQ            | −0.42 | −0.52| 4.67      | 3.63      | 0.81    | 0.67    |
| EAC      | KOFGI ~ HDI           | 13   | 10.4  | 7.29      | 5.72      | 0       | 0       |
|          | HDI ~ KOFGI           | 4.57 | 3.49  | 10.8      | 8.57      | 0.54    | 0.54    |
|          | IQ ~ HDI              | 7.13 | 5.59  | 3.63      | 2.73      | 0       | 0       |
|          | HDI ~ IQ              | 6.56 | 5.12  | 7.10      | 5.56      | 0.060   | 0.060   |
|          | IQ ~ KOFGI            | 3.66 | 2.76  | 4.65      | 3.57      | 0.085   | 0.085   |
|          | KOFGI ~ IQ            | 3.86 | 2.92  | 6.71      | 5.24      | 0.26    | 0.26    |
| ECOWAS   | KOFGI ~ HDI           | 3.97 | 2.98  | 4.92      | 3.76      | 0.10    | 0.10    |
|          | HDI ~ KOFGI           | 11.8 | 9.36  | 10        | 7.94      | 0.020   | 0.020   |
|          | IQ ~ HDI              | 1.50 | 0.96  | 3.24      | 2.38      | 0.20    | 0.29    |
|          | HDI ~ IQ              | 2.33 | 1.64  | 9.25      | 7.29      | 0.59    | 0.60    |
|          | IQ ~ KOFGI            | 1.63 | 1.07  | 5.09      | 3.90      | 0.50    | 0.52    |
|          | KOFGI ~ IQ            | 1.98 | 1.35  | 7.25      | 5.66      | 0.55    | 0.55    |
| SADC     | KOFGI ~ HDI           | 38.3 | 31.1  | 6.72      | 5.27      | 0       | 0       |
|          | HDI ~ KOFGI           | −0.56 | −0.68| 7.69      | 6.07      | 0.88    | 0.80    |
|          | IQ ~ HDI              | 8.87 | 7.03  | 4.15      | 3.17      | 0       | 0       |
|          | HDI ~ IQ              | 7.37 | 5.81  | 6.83      | 5.36      | 0.035   | 0.035   |
|          | IQ ~ KOFGI            | −0.20 | −0.38| 4.52      | 3.48      | 0.90    | 0.76    |
|          | KOFGI ~ IQ            | 3.21 | 2.41  | 5.61      | 4.37      | 0.23    | 0.23    |
| UMA      | KOFGI ~ HDI           | 1.25 | 0.85  | 4.20      | 3.26      | 0.39    | 0.48    |
|          | HDI ~ KOFGI           | 2.15 | 1.59  | 8.10      | 6.45      | 0.61    | 0.61    |
|          | IQ ~ HDI              | 1.39 | 0.97  | 3.54      | 2.72      | 0.23    | 0.29    |
|          | HDI ~ IQ              | 2.11 | 1.56  | 6.77      | 5.37      | 0.42    | 0.42    |
|          | IQ ~ KOFGI            | 1.27 | 0.87  | 6.24      | 4.93      | 0.57    | 0.60    |
|          | KOFGI ~ IQ            | 4.37 | 3.40  | 6.62      | 5.24      | 0.14    | 0.14    |

Source: Authors’ own elaboration based on the results of Dumitrescu and Hurlin (2012) panel causality test

~ does not Granger-cause
Panel Causality Test

In this study, we applied Dumitrescu and Hurlin (2012) causality test, and the results were presented in Table 7 and the bold rows showed the statistically significant causality relationship, because their probability values were smaller than 10%. The results demonstrated that there was unidirectional causality from globalization to development on one hand and from governance to development on the other hand at the continental level. It means that policymakers can use the past values globalization and governance to forecast future levels of development in Africa.

At the regional level, there is unidirectional causality from KOFGI to HDI in EAC and SADC. In these regions, there is also a bidirectional causality between IQ and HDI. In ECCAS, the causality runs from IQ to HDI. The last result is in line with Sarpong and Bein (2021) who show that governance is important to improve HDI.

The results of the DH causality test support no evidence of causality between the variables in North Africa.

These results raise some discussion points. First, the results confirm that doing the analysis at an aggregated level leads to a loss of the within-group information. Not only, previous studies have looked at Sub-Saharan Africa as homogeneous, but they ignored the causal link between our variables of interest. Second, a benefit of our paper is taking in consideration both directions of causality between country-level governance and development, while most of the previous studies focused only on one direction, mostly from governance to economic development (e.g. Sarpong & Bein, 2021; Wilson, 2016). Sarpong and Bein (2021) showed that governance is important to improve human development. Additionally, adjusted net savings has important implications on the well-being of human existence in Sub-Saharan Africa. In addition to these, they found that macroeconomic variables such as trade openness and economic growth, wealth and opportunity creation factors like urbanization and electrification rate are essential.

In EAC and SADC, we find virtuous circles between governance and development. This result stands at the contrary to Kaufmann and Kraay (2002) who found a unidirectional link in which a higher level of economic growth leads to subsequent improvement in the quality of governance. However, our result is in line with Samadi (2019) who found that economic globalization may improve (or deteriorate) the quality of institutions, but the kind and the extent of its influence depend on the type of institutional system and institutional structure of countries.
Conclusion

This paper analyzes the interlinks between globalization, governance and development using a comparative approach. We consider the five African regional economic blocks as level of comparison. Due the data availability, 51 countries are considered over the period running from 1996 to 2018. Two main techniques are utilized: panel cointegration and panel causality analyses.

The cointegration analysis shows that there is a long-run relationship between globalization, governance and human development in Africa as a whole sample. However, a look at regional blocks indicates that such a relationship does not exist in the ECCAS bloc but in the other blocks. In the long run, globalization affects positively human development in all samples.

After finding cointegration relationships, we search for the causal direction between the three variables. The results indicate that there was unidirectional causality from globalization and governance to development at the continental level. At the regional level, there is unidirectional causality from globalization to development in East African Community (EAC) and Southern African Development Community (SADC). In these regions, there is also a bidirectional causality between governance and development. In the Economic Community of Central African States (ECCAS), the causality runs from governance to development and from development to globalization in The Economic Community of West African States (ECOWAS). The results support no evidence of causality between the variables in North Africa (Arab Maghreb Union, AMU). Finally, the overall globalization index does not Granger-cause governance. The main implication of our study is that improving governance and development is a very challenging issue, and the impact of globalization should not be neglected. In addition, the results of this paper have regional specific policy implication. Governments of EAC and SADC countries should realize the importance of governance as a stimulating factor of development and consolidate it. Regarding the ECOWAS countries, they should consider globalization as a powerful influencing force and should adopt the new circumstances of globalization quickly and try to find coherent policies in order to take advantage of this evolving phenomenon.

In general, the literature has looked at the interactions between globalization and governance on the one side and between globalization and development on the other side separately. Moreover, the literature has ignored the role of economic integration in the interplay between these three concepts. This paper contributes to fill this gap. One limitation of this paper is the fact that Covid 19 amalgamating effect is not taken into account. This is a topic for future research.
Appendix

Table 8 Data description and sources

| Variable name | Label | Description | Source |
|---------------|-------|-------------|--------|
| HDI | Human Development Indicator | The Human Development Index (HDI) is a summary measure of average achievement in key dimensions of human development: a long and healthy life, being knowledgeable and have a decent standard of living. The HDI is the geometric mean of normalized indices for each of the three dimensions | UNDP |
| KOFGI | KOF Overall Globalization Index | Index measuring the economic, social and political dimensions of globalization | Gygli et al. (2019) |
| IQ | Institutional Quality | An aggregated governance measure which consists of an average value of six good country-level governance indicators calculated within the Worldwide Governance Indicators: 1. Voice and Accountability; 2. Political Stability and Absence of Violence; 3. Government Effectiveness; 4. Regulatory Quality; 5. Rule of Law and 6. Control of Corruption | World Bank |

Source: author

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