

THE INSTITUTIONAL QUALITY IN WEST AFRICA: THE SUPREMACY OF CULTURAL AND GEOGRAPHICAL FACTORS

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The purpose of this paper is to assess the relevance of cultural, political, economic and geographic approaches to account for the supremacy of cultural and geographic factors in explaining institutional quality in West Africa. The results show that cultural factors, followed by geography, play a significant role in understanding institutional quality. The results suggest that improving institutional quality requires strengthening democratisation processes by focusing on the cultural values of the population of a country of each country. Furthermore, it is necessary to promote and reinforce decentralisation processes to ensure the representativeness of the state throughout the territory.

Keywords: Institutional Quality, Generalised Panel Moment Estimator, West Africa

JEL Classification: K11, C23

1. INTRODUCTION

The role of property rights institutions, both formal and informal, in the development process continues to fuel macroeconomic debates. Although there is no doubt about the role of institutions in growth (North, 1993; Acemoglu, Johnson and Robinson, 2005) the mechanisms by which a country acquires quality institutions remain controversial. In this context, while it is clear that the improved protection of property rights is highly desirable, the circumstances in which an institutional environment is protected from the threats of interest groups and political classes are also of interest (Borner, Bodmer and Kobler, 2004).

In West Africa¹, work on institutional quality is almost non-existent. Worse, to our knowledge, little scholarship has focused on identifying institutional levers for the

¹ West Africa is the ECOWAS sub-regional community economic zone which brings together 15 countries, namely Benin, Burkina Faso, Côte d'Ivoire, Cape Verde, Ghana, Guinea, Gambia, Guinea-Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone and Togo.

protection of private property rights. However, the protection of private property rights is fundamental to mobilise external resources and attract foreign investments. For example, the quality of institutions and modes of governance determine the effectiveness of any economic policy (Rodrik, Subramanian and Trebbi, 2004).

This article makes an empirical contribution, estimating an empirical model based upon panel data covering the period between 1996-2013. To do this, we first test the relevance of four institutional approaches, namely the institutional efficiency theory, the cultural approach, political approach and geographical approach. Thereafter, we identify the most relevant institutional approach and assume that cultural diversity is at the root of institutional differences between West African countries.

In addition to this introductory section, the rest of the article is organised as follows: Section 2 is devoted to the analysis of the institutional framework of West African countries; Section 3 discusses the theoretical and empirical frameworks of institutional quality across different approaches; Section 4 presents the model and the methodology of analysis; Section 5 presents and discusses the results; while the final section concludes and outlines policy implications.

2. CHARACTERISTICS OF THE INSTITUTIONAL FRAMEWORK IN WEST AFRICA: SOME STYLISED FACTS

The description of institutional profiles is based on the six Kaufmann, Kraay and Zoido-Lobaton (KKZ) positive governance indicators of the World Bank. These indicators include voice and responsibility (VA), political stability (PS), government effectiveness (GE), quality of regulation (RQ), the rule of law (RL) and control of corruption (CC). They vary between -2.5, corresponding to abysmal governance, and +2.5, which translates to excellent governance. Table 1 below illustrates the state of play of institutional quality in different West African countries. To establish this model, we constructed an institutional quality index that corresponds to the simple arithmetic average of the six KKZ indicators over the period between 1996-2013.

Table 1 demonstrates that for most countries, all indicators take negative values. This institutional profile suggests a poor state of protection for private property rights in these countries. Of the six good governance indicators, only Cape Verde recorded five positive average indicators, with the exception of the quality of regulation. It is followed by Benin, which has two indicators, including “voice and responsibility” and “political stability and absence of violence”, which are both positive. Countries such as The Gambia, Ghana and Mali have only one positive average indicator: “political stability and absence of violence” for The Gambia and “voice and responsibility” for Ghana and Mali. All other countries recorded only negative indicators, reflecting a poor quality of governance. These facts reflect weak institutional capacity in most West African countries.

Table 1. Institutional profile of West African Countries over the Period of 1996-2013

Pays	CC	GE	PS	RQ	RL	VA
Benin	-0.68	-0.44	0.52	-0.35	-0.46	0.21
Burkina Faso	-0.22	-0.67	-0.18	-0.23	-0.56	-0.42
Cote d'Ivoire	-0.82	-0.92	-1.37	-0.69	-1.23	-1.06
Cape Verde	0.34	0.12	0.90	-0.17	0.48	0.81
Ghana	-0.12	-0.07	-0.10	-0.13	-0.10	0.15
Guinea	-0.89	-1.05	-1.49	-0.92	-1.37	-1.21
Gambia	-0.56	-0.59	0.28	-0.43	-0.24	-0.98
Guinea Bissau	-1.08	-1.22	-0.88	-1.12	-1.48	-0.93
Liberia	-1.03	-1.52	-1.49	-1.54	-1.52	-0.78
Mali	-0.56	-0.83	-0.07	-0.38	-0.39	0.04
Niger	-0.85	-0.86	-0.52	-0.62	-0.73	-0.63
Nigeria	-1.12	-1.02	-1.66	-0.88	-1.24	-0.86
Senegal	-0.26	-0.25	-0.41	-0.21	-0.17	-0.03
Sierra Leone	-0.89	-1.30	-0.90	-1.09	-1.15	-0.63
Togo	-0.86	-1.32	-0.42	-0.75	-0.87	-1.17

Source: Author's calculation.

This negative quality of institutions has the effect of curbing the process of economic development in these countries. Indeed, inadequate governance contributes to the weakening of states in West Africa. These institutional instabilities lead to a poor definition and feeble protection of property rights. In addition, inefficient institutions lead to high transaction costs and increase uncertainty in investment decisions. As a result, low-quality institutions depress private investment and misallocate resources, thereby hindering economic growth. Thus, despite their abundance of mineral and oil resources, West African countries have the lowest human development indices.

In this context of weak institutional capacity, leaders develop predation systems based on poor economic and political governance. This leads the ruling elite to privilege their personal interests to the detriment of the collective well-being. Such behaviour drives the formulation of suboptimal economic policies. For example, corruption creates distortions in the public sector by diverting public investment from priority sectors to projects where bribes and kickbacks are most important. Ultimately, the institutional weaknesses observed in West African countries hinder their economic development.

3. THEORETICAL AND EMPIRICAL FRAMEWORKS ON THE DETERMINANTS OF INSTITUTIONAL QUALITY

The literature identifies four approaches to explain the quality of institutions in a particular country. These include the cultural approach, political approach, economic approach and the geographical approach.

3.1. Economic Approach or Institutional Efficiency Theory

The theory of institutional efficiency states that each society chooses efficient economic institutions to maximise the overall income of the entire population (Acemoglu, 2003). According to this theory, if in one country the existing economic institutions penalise one group but benefits others, the two groups can enter into negotiations to modify existing institutions or create new ones that will produce beneficial effects for all individuals. In other words, private property rights institutions are set up when profits outweigh the costs of their creation (Demsetz, 1967; North and Thomas, 1973). Thus, the decision to create private property rights institutions is an economical choice based on cost-benefit analysis. From this perspective, the search for economic efficiency would prevent the existence of any inefficient institutions.

Empirically, most studies argue that raising a country's income level enables it to generate the resources needed to finance institutional reforms or to create new institutions. From this point of view, Chong and Calderón (2000), using an autoregressive vector model, found that GDP per capita growth improves the level of institutional quality in a sample of 55 developed and developing countries, covering the period between 1972-1995. As for Kaufmann and Kraay (2002), they analysed the causality between per capita income and the protection of private property rights over the 2000-2001 period, covering 175 developed and developing countries. Indeed, Kaufmann and Kraay (2002) found that an improvement in institutional quality is conducive to an increase in per capita income. On the other hand, an increase in per capita income is not necessarily favourable and would even be an obstacle to the protection of private property rights. For these authors, the potential influence of the elite and the power of the state would explain this weak and negative causal effect. As a result of this work, Alonso and Garcimartin (2013) show that institutional quality is mainly determined by the level of development.

The theory of institutional efficiency has some limitations that need to be discussed. First, if the theory of institutional efficiency is valid, this implies that all countries choose institutions that will maximise national income. In this case, the difference in economic performance cannot be explained by the difference in institutional quality. However, a consensus seems to emerge in the literature that a country's long-term growth trajectory depends fundamentally on the quality of its institutions (Rodrik, Subramanian and Trebbi, 2004; Acemoglu, Johnson and Robinson, 2005).

Second, the theory of institutional efficiency still faces some operational difficulties. Indeed, the choice of property rights institutions in a country presupposes a collective choice. Therefore, this choice implies the need to conduct collective bargaining. In this context, it will most likely arise from the stowaway effect, that is to say, that some members of society will want to take advantage of the gains without bearing the costs of institutional reforms. In the presence of the stowaway effect, the application of the theory of institutional efficiency becomes irrelevant for assessing the quality of an institution.

Finally, at the country level, any negotiation for the creation or the change of institutions supposes the following implications: one part constituted by the state, and the second part by the people. In such a configuration, what would then be the margins within which people can manoeuvre in relation to the state? What would be the recourse of the people to enforce government commitments in case leaders are shirking their commitments? In light of this argument, it appears that the applicability of the economic approach comes up against the need to solve the problem of the credibility of politicians during the process of creation or institutional reforms.

In the end, according to this trend, a country's income should be used to finance institutional reforms and thus, lead to the establishment of quality institutions. However, why are there inefficient institutions in high-income countries? When considering low-income countries, in support of the institutional efficiency thesis, it must be admitted that developing countries are unable to build quality institutions. Therefore, they will be plunged into an underdevelopment trap because they do not have the resources to finance institutional reforms or to create new institutions. Nevertheless, such a vision is not necessarily grounded in reality.

Given the different potential limitations of the economic approach, other theories might better explain the difference in institutional quality between countries.

3.2. Cultural Approach to Institutions

According to the cultural approach, the difference in institutional quality from one country to another is explained by differences in cultures or ideological beliefs (Acemoglu, 2003). The cultural approach to institutions refers to a conception of institutions as a rather frequent and permanent way of thinking or acting, which is incorporated into the habits of a group or the customs of a people (Hamilton, 1919). From this perspective, institutions tend to adapt to changes in culture and context, which is why the transposition of an institution into a different society necessarily implies its transformation. As a result, institutions are marked by a propensity to diverge from the original intentions of their creators. In addition, institutions survive the problems that caused them to arise and may play different roles from those initially assigned to them (Hamilton, 1919). Although an institution primarily represents an answer to a social problem, interests and compromises eventually stiffen it, so that it will be replaced only through revolution (Chavance, 2012). Menger (1883) distinguishes two different ways of forming institutions: the organic and the pragmatic. However, two-way institutions are not independent, as practical actions can improve those that have been formed organically. For Menger (1883), it is not uncommon for customary law to have proved detrimental to the common good, thus justifying its change by (pragmatic) legislation. Veblen (1899) emphasises the archaism and frequent maladjustment of inherited institutions, considering that the essential character of institutions is their inertia concerning social evolution.

Weber (1958) argues that some societies have cultural values that favour the

emergence of beneficial institutions, while others do not. According to Putnam (1994), cultural values, fostering confidence in outsiders, facilitate collective action, as well as the creation of effective institutions. On the other hand, cultural values that incite intolerance, xenophobia and closed mindedness compared to others constitute obstacles to the emergence of beneficent institutions (Landes, 1998).

In empirical work, the relationship between culture and institutional quality has often been treated by approximating culture through religious affiliation, ethnolinguistic fragmentation or cultural diversity, as well as by legal tradition. A first set of works has argued that societies with a strong Catholic or Muslim dominance would have institutions less willing to guarantee the protection of private property (Landes, 1998; La Porta et al., 1999). Indeed, Landes (1998) shows that a large population of Catholics or Muslims is found in an index of lower institutional quality. On the other hand, a significant proportion of Protestants favour institutional development.

The work of La Porta et al. (1999) corroborates the results previously highlighted by Landes (1998). Indeed, in a sample of 149 developed and developing countries during the 1990s, La Porta et al. (1999) show that compared to Protestant countries, Muslim and Catholic countries are less effective in protecting property rights. This result is supported by Mijiyawa (2010), who finds that in developing countries, the variability of institutional quality is due to the difference in religious affiliation of the population, especially those of Protestant origin. Stulz and Williamson (2003) show that Protestant countries better protect the rights of creditors and investors than countries of Catholic faith.

The experience of West African countries, where many denominations coexist, calls into question the validity of the results of Landes (1998). Moreover, although some countries have a high proportion of Muslims and others of Catholics or Protestants, there are no fundamental differences in institutional quality between countries in West Africa.

As for ethnic fragmentation, it can generate inefficient economic institutions (Easterly and Levine, 1997; Collier, 2000). In addition, countries with strong ethnolinguistic fragmentation experience a loss of economic efficiency to corruption organised by the homogeneous ethno-linguistic group in power (Mauro, 1995). Thus, poor institutional quality is linked to rivalry between different ethno-linguistic groups.

On the other hand, Siba (2008) believes that a high level of ethnolinguistic fragmentation is not necessarily synonymous with poor institutional quality. To this end, although Burkina Faso has more than sixty ethnic groups, it still has not experienced ethnic conflicts. And like Senegal and others in West Africa, this is not an outlier. Licht et al. (2005, 2007) analyse the impact of cultural values on the legal rights of private investors. They found that there is a significant relationship between national cultural values and the protection of investor rights. For Alesina and Giuliano (2015), culture and institutions interact and evolve in a complementary way, with mutual feedback effects.

The explanation of differences in institutional quality between countries based on differences in cultural or ideological values has some limitations. For example, from the experience of ex-colonies, it is difficult to argue that institutions were formed and have

been inherited from the past in accordance with the Veblen approach. Moreover, the difference in institutional quality in the former colonies is not due to a difference in the ideological beliefs of the former colonial powers, because the same colonial powers developed different institutions in the colonies according to specific characteristics. For example, there is little difference in former French vs. British colonies.

On the other hand, the fact that some countries have maintained inefficient institutions despite opportunities to realise their possible institutional choices would also limit the validity of the cultural approach. From this point of view, the difference in economic and institutional performance between South Korea and North Korea raises questions. By comparing the levels of economic and institutional development between the two countries, North Korean leaders should have questioned their institutional trajectory and envisaged adequate institutional reforms. However, this has not been the case.

3.3. Political Approach of Institutions

The political approach states that political and economic institutions emanate from the choices freely made by a group of individuals who, at one time, controlled political power in a country (Acemoglu, Johnson and Robinson, 2005). Following a social conflict, the winning group sets up institutions that maximise their personal gains and not necessarily the income of the whole society. For example, some societies choose different institutions, some of which are disastrous for their citizens (Acemoglu, 2003). For North (1981), there are transaction costs that result in differences between the property rights institutions chosen by policy makers to maximise their personal gains, and the institutions that maximise the income of the entire population. For example, North (1994) argues that institutions are not necessarily created to be socially effective and are often oriented towards the satisfaction of the interests of those who hold political power.

For the theory of regulation, institutions are essentially forged as institutionalised compromises between social groups in conflict (Delorme and André, 1983). As a result, the emergence of new institutions is often the result of crises, conflicts and wars. Thus, institutional change is difficult to separate from developments affecting the political sphere (Boyer, 2003). As such, the quality of institutions depends on the political history of each country.

Empirically, most studies establish a positive and significant relationship between democracy and the quality of economic institutions. Indeed, Clague et al. (1996) find that democratic countries provide better protection for private property rights in the long term. In particular, the duration of a democratic regime is a factor favouring the emergence of private property right protections.

According to the legal system, common law countries better protect contractual property rights than Romano-Germanic countries or countries with a socialism-based legal system (La Porta et al., 1999). These results are similar to those of Borner et al.

(2004), dealing with the determinants of institutional efficiency in the case of Argentina. Indeed, Borner et al. (2004) show that countries with British, German and Scandinavian legal systems have better institutional environments. On the other hand, French and socialist legal systems lead to lower quality environments. Thus, the results of Borner et al. (2004) confirm those of La Porta et al. (1999), which show that a committed and a strong state both contribute to a better institutional environment. However, the power of the state is a positive factor in developing countries but negative for industrialised nations.

The political approach has been the subject of a great deal of criticism. Indeed, this approach places little importance on the possibility of countries choosing new institutions or modifying those they have inherited. As such, the political approach condemns countries to a particular institutional determinism. Moreover, a comparative analysis of institutional trajectories between Japan and other Asian countries, on the one hand, and African countries, on the other hand, reveals some elements of weakness in reference to the weight of history. For example, the fact that Asian countries have developed more efficient economic institutions compared to African countries, despite the way that the two groups inherited similar institutions (economic and political) in the aftermath of independence, is an illustration that countries can decide at some point to change their institutions. Finally, the difference in the trajectory of democratic institutions among African countries with a similar institutional heritage is further proof that countries can change the nature of the historic institutions they have inherited.

These examples make it necessary to relativize the importance of historical events in explaining the difference in institutional quality between countries. These examples also encourage other explanatory factors that place a greater emphasis on the possibility for countries to choose their own institutions. In doing so, another way of explaining differences in institutional quality across countries would be geographical features.

3.4. Geographic Approach to Institutions

The geographical approach to institutions highlights the primacy of physical characteristics in explaining the predisposition of a country to establish institutions protecting private property rights. This is why, depending on whether a country is large or small, the authority of the state would be exercised differently according to region. In West Africa, the cases of Nigeria, Mali and Côte d'Ivoire illustrate this approach. Viewed from this perspective, endowments of natural resources combined with significant territory favour the emergence of ethnic conflicts and, consequently, the advent of lower quality institutions. This is also the case in the Democratic Republic of Congo and the Central African Republic, which are experiencing a recrudescence of socio-political crises. Thus, the geographical approach sheds new light on the institutional gap not only between countries but also within a single country. This is explained by the representativeness of the state across the country via deconcentrated and decentralised structures.

For example, Diamond (1997), Sachs (2000), and Easterly and Levine (2003) attribute a determinative role to geography in the protection of private property rights. From this perspective, it is evident that the geographical characteristics of a country are closely linked to the quality of its institutions. From a sample of 87 developed and developing countries during the period between 1970-1989, Sachs and Warner (1997) show that the best-endowed countries are those whose quality of institutions is the worst, sometimes described as “Dutch disease”. This is because the abundance of natural resources favours corruption and rent-seeking activities. Similarly, Leite and Weidmann (1999) show that countries rich in natural resources had the highest level of corruption in a sample of 72 developed and developing countries. However, these effects depend on the nature of the natural resources. Indeed, mining and oil resources have a positive effect on the level of corruption, while agricultural resources reduce the level of corruption. Moreover, Isham et al. (2005) consider that the best-endowed countries in terms of natural resources (e.g. gold, diamonds) and cash crops (e.g. coffee, cocoa) are those with poor institutional quality.

4. MODEL SPECIFICATION AND METHODOLOGY FOR ANALYSING THE RELEVANCE OF INSTITUTIONAL APPROACHES

4.1. Model Specification

The empirical literature on the determinants of institutional quality is still in its infancy. It is characterised by the absence of theoretical models that allow not only for the analysis of institutional changes but also their determinants. The few existing works have been oriented towards the specification of ad hoc linear models (La Porta et al., 1999; Islam and Montenegro, 2002; Borner, Bodmer and Kobler, 2004; Siba, 2008; Alonso and Garcimartin, 2013). Our approach, although similar to those of Acemoglu et al. (2001), Beck et al. (2003), Acemoglu and Johnson (2005) and Mijiyawa (2010), is distinguished by the consideration of the geographical features of countries. The cultural and geographical specificities of the countries justify the choice of this method. Furthermore, it offers the advantage of identifying the most relevant approach but also of capturing the effects of different variables on institutional quality.

The model to be estimated is formulated as follows:

$$inst_{it} = \alpha_0 + \alpha_1 C_{it} + \varepsilon_{it}, \quad (1)$$

$$inst_{it} = \beta_0 + \beta_1 G_{it} + \varepsilon_{it}, \quad (2)$$

$$inst_{it} = \omega_0 + \omega_1 P_{it} + \varepsilon_{it}, \quad (3)$$

$$inst_{it} = \theta_0 + \theta_1 E_{it} + \varepsilon_{it}, \quad (4)$$

$$inst_{it} = \lambda_0 + \lambda_1 C_{it} + \lambda_2 G_{it} + \lambda_3 P_{it} + \lambda_4 E_{it} + \varepsilon_{it}, \quad (5)$$

with $inst$ is an institutional quality indicator or economic institutions for the protection of private property rights, C is a vector of cultural variables, G is a vector of geographical variables, P is a vector of political variables, E is a vector of economic variables and ε is the error term.

Equations (1), (2), (3) and (4), respectively, evaluate the explanatory factors of institutional quality according to cultural, geographic, political and economic approaches, while Equation (5) gives a holistic approach to institutional quality by combining the first four equations.

4.2. Choice of Estimator and Comparison Method of Different Approaches

The Ordinary Least Squares (OLS) estimator is unbiased under the orthogonality condition and optimal under the homoscedasticity assumption. However, in cases of heteroskedasticity, the OLS estimator is ineffective compared to the Generalized Least Squares (GLS) estimator. Moreover, in the presence of the autocorrelation of errors, the MCO estimators are unbiased but no longer have a minimum variance (Gujarati, 2004). Thus, the MCG estimator is efficient compared to the MCO estimator for heteroscedasticity but also for the autocorrelation of errors (Muke et al., 2013). Since different approaches have explanatory variables that can be correlated with one another, the use of the OLS method would lead to biased estimators. Therefore, the GLS method is better than the OLS. In addition, GLSs can correct the problems of heteroscedasticity and the autocorrelation of residues. As a result, the model will be estimated by the generalised least squares method in the panel data.

Equations (1) to (4) allow us to assess the isolated effect of each explanatory variable and therefore, to evaluate the simple relevance of each approach while ignoring the effect of variables related to other theories (Mijiyawa, 2010). The simple relevance of each approach is analysed through the Wald statistic associated with explanatory variables. In this case, an approach will be relevant when the set of regressors is jointly and statistically different from zero. Therefore, the Wald statistic makes it possible to test the global influence of all the explanatory variables at the level of each approach. The relative relevance of each approach is assessed using the likelihood ratio test. Indeed, the likelihood ratio makes it possible to test general hypotheses concerning the parameters of interest of two different models.

Moreover, it makes it possible to compare the quality of fit of two nested models $M_0 \subseteq M_1$ by questioning the potential contribution of the most complex Model M_1 compared to the information provided by the most parsimonious model M_0 . The assumptions of the likelihood ratio test to assess the relative relevance of each of the four approaches are defined as the null hypothesis $H_0: \theta \in \Theta_0$, against the alternative hypothesis $H_1: \theta \in \Theta \setminus \Theta_0 = \{\theta \in \Theta; \theta \notin \Theta_0\}$.

The null hypothesis successively corresponds to each of the approaches (1), (2), (3) and (4), while the alternative hypothesis corresponds to the global model described by Equation (5). In our case, the null hypothesis refers to the constrained model and the

alternative hypothesis to the unconstrained model.

Beyond the likelihood ratio (LR) test, we use the information content of different models to identify the most relevant approach. This is the Akaike (AIC) and Bayes (BIC) information criteria. The most appropriate model corresponds to the one that minimises the AIC and BIC criteria and that maximises the LR statistic.

4.3. Presentation of Variables and Sources of Data

The institutional quality index was constructed from the six World Bank KKZ indicators. This index was constructed through the Principal Components Analysis (PCA), which makes it possible to overcome problems of multicollinearity and omission of relevant variables. The data on the variables of the political dimension comes from the database of the Centre for Systemic Peace (CSP). To test the theory of institutional efficiency, the data are drawn from the World Bank database. For proxy religion and geographical features, the indicators developed by La Porta et al. (1999) are used. Regarding the cultural diversity index, it is derived from Fearon (2003). Proxies of the geographic dimension also come from La Porta et al. (1999) and Treisman (2007). Appendix Table A1 presents the source and definition of each of the variables used in the regressions. The econometric estimates are based on panel data covering the period between 1996-2013 and concern 15 countries in West Africa. The choice of this period is justified by the availability of data and the implementation of policies to improve the business climate.

5. RESULTS AND DISCUSSIONS

5.1. Stationarity of The Series and Choice of the Random Effects Model

Table 2. Summary Table of the Stationarity of the Variables

Variables	Test of Im, Pesaran and Shin
property_rights	-3.992 ^{***}
autoc	-2.681 ^{***}
democ	-2.718 ^{***}
polity	-3.184 ^{***}
durable	-9.656 ^{***}
inflation	-50.525 ^{***}
dette	-2.028 ^{**}
fdi	-2.098 ^{**}

Note: ^{***}, ^{**} and ^{*} respectively denote stationary variables at 1%, 5% and 10%.

The test of Im, Pesaran and Shin (2003), a generalisation of the ADF test, is used to check for the presence or absence of unit root in the observations. However, stationarity

is only relevant when the variable shifts over time. As a result, stationarity has not been verified on these time invariants. The results in Table 2 depict that all variables are stationary at level.

The results of the estimates indicate that the interindividual variation of the variables is greater than the intra-individual variation, which means that the random effects model is more appropriate than the fixed effects model. Moreover, the presence of invariant explanatory variables over time suggests the use of the random effects model but under the assumption of exogeneity of the specific effects. As a result, the random effects model is then retained as part of this paper.

5.2. Validity of Different Institutional Approaches

The results in Table 3 below show that all approaches are relevant for examining the protection of private property rights in West African countries. Indeed, Wald's statistics indicate that all variables in each approach are statistically different from zero at the 1% threshold.

Table 3. Validity of Different Institutional Approaches

Approaches	Cultural	Geographical	Political	Economic	Global
Wald's statistics	98.04	53.85	297.59	1385.16	259.07
Prob > chi2	0.000	0.000	0.000	0.000	0.000
Relevant or not	Relevant	Relevant	Relevant	Relevant	Relevant

Source: Author's calculation.

The validity of any approach cannot be questioned but what is the most relevant approach that can generate rapid gains in economic policies? Table 4 below presents the results of the determinants of institutional quality according to different approaches.

Corresponding to the cultural approach, institutional quality is significantly explained by the proportion of Catholics, Muslims and Protestants but also by cultural diversity. These results also indicate that Catholic, Muslim and Protestant religions are vectors for the protection of private property rights. In West Africa, for example, all religions promote a culture of social dialogue and encourage the emergence and stability of institutions for the protection of private property rights. Thus, these results invalidate the supremacy of Protestantism compared to other religions, as advocated by Landes (1998).

However, cultural diversity is a significant source of institutional inefficiency. This is consistent with Easterly and Levine (1997) and Alesina et al. (2003), who argue that in a highly ethnically polarised environment, policymakers build institutions that only protect the property rights of their ethnic groups, which generates inefficient institutions.

Starting from the geographical characteristics, the index of protection of property rights is positively related to the urban population but negatively to the topography of the country. In doing so, the larger the country, the less effective its institutions in

protecting private property rights. This is the case for countries like Mali and Nigeria, which are confronted by the violence of jihadist and terrorist groups, which leads to institutional instability. It is in this sense that Bozio and Grenet (2010) emphasise how the fragmentation of coercive power does not effectively guarantee the protection of property rights. On the other hand, an increase in the urban population leads to an improvement in the institutional quality index. Thus, belonging to an urban area, by improving human capital, contributes to the development of quality institutions.

Table 4. Determinants of Institutional Quality by Approach

Variables	Cultural approach	Geographical approach	Political approach	Economic approach	Global approach
cath80	0.050*** (4.32)				0.057** (2.53)
musl80	0.028*** (6.78)				0.023** (2.25)
prot80	0.043*** (3.95)				0.051** (2.23)
cd03	-6.782*** (-9.40)				-5.158*** (-6.36)
latitude		0.128*** (4.01)			0.042 (0.40)
lnarea		-0.279*** (-4.53)			-0.374*** (-3.68)
landlock		1.411*** (3.70)			1.831** (2.31)
urb1998		0.055*** (5.79)			0.033** (2.27)
autoc			-0.296*** (-6.00)		-0.160*** (-2.68)
democ			0.804*** (4.83)		0.407** (2.20)
durable			0.051*** (4.23)		0.022** (1.97)
polity			-0.512*** (-4.17)		-0.251* (-1.88)
idh2000				8.008*** (7.04)	2.197 (0.50)
gini2002				0.035*** (3.02)	0.015 (1.41)
dette				-0.000 (-0.09)	0.006 (1.03)
fdi				-0.000 (-0.09)	0.002 (0.43)
inflation				-0.001* (-1.66)	-0.000 (-1.37)
Constant	-0.3369 (-0.67)	-2.0020** (-2.24)	-3.5103*** (-11.25)	-6.347*** (-7.70)	-0.977 (-0.61)
Observations	237	254	254	254	237
Number of ID	14	15	15	15	14
Log likelihood	-349.086	-402.537	-406.164	-431.437	-310.292

Note: z-statistics in parentheses, *** p<0.01, ** p<0.05, * p<0.1.

The isolation index has a counterintuitive sign. In other words, in West Africa, isolation does not necessarily translate into institutional deficiency. This seemingly paradoxical result can be interpreted as a conditional effect, as the absence of shorelines in a country increases the transaction costs related to trade and investment compared to a country with a coastline (Hall and Jones, 1999). At the same time, these challenging conditions may encourage the development of quality economic institutions to offset higher transaction costs (Nunn and Puga, 2012). For example, it is possible to relate difficult geographical features, such as isolation, with the capacity to create institutions that protect private property rights. Column 4 of Table 4 presents the results of the effect of policy variables on institutional quality. It appears that autocratic regimes are associated with poor institutions, while democratic regimes favour the protection of private property rights. Also, the durability of the schemes makes it possible to establish quality institutions. This result corroborates with those of Clague et al. (1996), who have shown that the duration of a democratic regime favours the emergence of institutions that protect private property rights.

The democracy variable corrected for the level of dictatorship negatively affects the protection of private property rights in West Africa. Therefore, despite the existence of multi-party politics and although there are regular elections in many of these countries, they do not necessarily reflect the expression and will of the people. These are actually “predatory” and “bureaucratic-authoritarian” regimes according to the typology of Krueger (1993) and Varoudakis (1996) and, consequently, are less favourable to the protection of private property rights.

The results of the economic approach indicate that the level of development of a country positively and significantly affects the quality of institutions protecting private property rights at the 1% threshold. The same is true of net inflows of foreign direct investment and countries’ external debt. Moreover, FDI inflows into a country are a source of technology transfer and best practices. The positive effect of FDI on institutional quality confirms the results found by Ali (2010) using a sample of 69 developing countries. As for inflation, which is a source of macroeconomic instability, it negatively affects the quality of institutions.

The last column of Table 4 presents the effects of the different variables when all four approaches are used together to explain institutional quality. Indeed, all the variables related to cultural and political aspects remain relevant with the effects of almost identical amplitudes compared to the case where each approach is taken in isolation. At the level of geographical factors, in addition to the urban population, the index of landlocked countries has a positive effect on institutional quality. On the other hand, the extent of the territory remains a handicap for the establishment of institutions for the protection of private property rights. Unlike other dimensions, not all variables of the economic approach are significant. Therefore, this theory is less relevant for protecting private property rights.

5.3. Choosing the Most Relevant Approach

The results in Table 5 indicate that the approach that minimises the AIC and BIC criteria corresponds to the cultural approach. Therefore, it is the most relevant in terms of these criteria. It is followed by the geographical approach, the political approach and, finally, the economic approach.

Table 5. Relative Relevance of Different Institutional Approaches

Approaches	Cultural	Geographical	Political	Economic	Global
AIC	708.173	815.075	822.328	874.873	656.583
BIC	725.513	832.761	840.015	896.097	719.008
LR	-349.086	-402.537	-406.164	-431.437	-310.292

The likelihood ratio also confirms the results of the different AIC and BIC information criteria. At this level as well, the cultural approach presents the largest LR statistic compared to other approaches. Therefore, the cultural approach is the most relevant for reporting the level of protection of private property rights in West Africa, while the economic approach is the least relevant.

5.4. Supremacy of Culture and Geography to Protect Private Property Rights

Starting from the cultural approach, what are the different combinations of approaches that enhance the explanatory power of institutional quality models? To answer this query, we proceeded to a combination of approaches two-by-two on the one hand, then combinations of three on the other hand. Table 6 below presents the results of these combinations.

Taken two-by-two, the different combinations can be grouped into two categories; that is, those with a likelihood ratio (LR) greater than -349.086 and those with a likelihood ratio of less than -349.086. The -349.086 threshold corresponds to the likelihood ratio of the most relevant approach, while the LR statistic resulting from the combination of cultural and geographical factors is -327.023. This combination is followed by that of the cultural and economic approaches (-328.550), then the combination of cultural and political approaches (-337.583). On the other hand, the likelihood ratio resulting from combinations of geographical and economic, geographical and political approaches, and finally, political and economic approaches, is less than -349.086. The common denominator of all of these combinations is the neglect of cultural factors. Thus, cultural factors are paramount in the ability of institutions to protect private property rights. This state of affairs is explained by the fact that cultural institutions change very slowly and are the basis for all institutions.

When three approaches are combined, the combination of cultural, geographic and political approaches provides the most significant explanatory power (LR = -312.885), then the combination of cultural, political and economic theories (LR = -321.745). Moreover, the explanatory power of these combinations does not differ greatly from the

combination of cultural and geographical theories alone (LR = -327.023). These results then support the supremacy of cultural and geographical factors that are predominant in the protection of private property rights in West Africa.

Table 6. Results by Combinations of Different Approaches

Variables	C	C-G	C-P	C-E	G-P	G-E
cath80	0.050*** (4.32)	0.044*** (3.45)	0.048*** (4.27)	0.112*** (6.39)		
musl80	0.029*** (6.78)	0.007 (0.89)	0.025*** (6.31)	0.042*** (8.40)		
prot80	0.043*** (3.95)	0.065*** (5.77)	0.034*** (3.28)	0.081*** (5.65)		
cd03	-6.782*** (-9.40)	-5.963*** (-8.92)	-6.059*** (-8.77)	-7.528*** (-10.55)		
latitude		0.228*** (3.08)			0.087*** (2.91)	0.079** (2.49)
lnarea		-0.344*** (-4.36)			-0.246*** (-3.99)	-0.249*** (-4.14)
landlock		1.349*** (3.10)			1.084*** (2.90)	2.058*** (5.52)
urb1998		0.047*** (3.69)			0.031*** (2.78)	0.026** (2.48)
autoc			-0.222*** (-4.85)		-0.121** (-2.26)	
democ			0.645*** (4.35)		0.271 (1.57)	
durable			0.022** (1.99)		0.037*** (3.26)	
polity			-0.431*** (-3.99)		-0.145 (-1.15)	
idh2000				-7.025*** (-3.60)		8.301*** (5.65)
gini2002				0.018* (1.70)		-0.003 (-0.29)
dette				0.009 (1.42)		0.003 (0.44)
fdi				0.010* (1.67)		-0.000 (-0.05)
inflation				-0.000 (-1.30)		-0.000 (-1.62)
Constant	-0.337 (-0.67)	-0.039 (-0.04)	-1.801*** (-3.36)	0.310 (0.30)	-1.803* (-1.85)	-3.978*** (-3.28)
Observations	237	237	237	237	254	254
Number of ID	14	14	14	14	15	15
Log likelihood	-349.086	-327.023	-328.550	-337.583	-379.419	-383.553

Table 6. Results by Combinations of Different Approaches (cont')

Variables	P-E	C-G-P	C-G-E	G-P-E	C-P-E	C-G-P-E
cath80		0.057*** (3.90)	0.081*** (3.75)		0.089*** (5.23)	0.057** (2.53)
musl80		0.022** (2.13)	0.015* (1.67)		0.035*** (6.94)	0.023** (2.25)
prot80		0.060*** (5.26)	0.086*** (4.65)		0.064*** (4.44)	0.051** (2.23)
cd03		-5.276*** (-7.88)	-6.617*** (-8.78)		-6.519*** (-9.35)	-5.158*** (-6.36)
latitude		0.077 (0.89)	0.255*** (3.09)	0.047 (1.58)		0.042 (0.40)
lnarea		-0.355*** (-3.79)	-0.295*** (-3.38)	-0.205*** (-3.29)		-0.373*** (-3.68)
landlock		1.478*** (3.03)	0.704 (1.06)	1.587*** (4.42)		1.831** (2.31)
urb1998		0.026* (1.92)	0.044*** (3.21)	0.000 (0.04)		0.033** (2.27)
autoc	-0.293*** (-6.06)	-0.150*** (-3.18)		-0.205*** (-3.96)	-0.175*** (-3.61)	-0.160*** (-2.68)
democ	0.864*** (5.36)	0.365** (2.34)		0.543*** (3.21)	0.505*** (3.20)	0.407** (2.20)
durable	0.033*** (2.82)	0.025** (2.21)		0.026** (2.35)	0.025** (2.36)	0.022** (1.97)
polity	-0.576*** (-4.85)	-0.218* (-1.87)		-0.341*** (-2.76)	-0.335*** (-2.92)	-0.251* (-1.88)
idh2000	4.847*** (4.59)		-4.825 (-1.38)	7.451*** (5.20)	-4.629** (-2.35)	2.197 (0.50)
gini2002	0.020* (1.92)		0.015 (1.38)	-0.009 (-0.82)	0.019* (1.85)	0.015 (1.41)
dette	-0.003 (-0.40)		0.007 (1.23)	0.002 (0.35)	0.006 (1.14)	0.006 (1.03)
fdi	-0.010* (-1.73)		0.007 (1.28)	-0.005 (-0.97)	0.004 (0.78)	0.002 (0.43)
inflation	-0.000 (-1.62)		-0.000 (-1.55)	-0.000 (-1.47)	-0.000 (-1.23)	-0.000 (-1.37)
Constant	-6.211*** (-7.99)	0.420 (0.36)	-0.170 (-0.13)	-3.755*** (-2.75)	-1.527 (-1.40)	-0.977 (-0.61)
Observations	254	237	237	254	237	237
Number of ID	15	14	14	15	14	14
Log likelihood	-390.847	-312.885	-322.501	-360.994	-321.745	-310.292

5.5. Robustness Test: Use of an Alternative Measure of the Dependent Variable

To control the measurement errors of the dependent variable that could skew the results of previous analyses, it is necessary to test the robustness of the results by

changing the measure of institutional quality. First, we use a property rights proprietary indicator called “property rights” from the Heritage Foundation, as well as two other composite indicators built from Freedom House databases and the International Country Risk Guide (ICRG). The results of the various robustness tests across the three alternative indicators are presented in the Appendix: Table A4 to A7. The use of these three alternative measures of institutional quality confirms that the cultural approach is the most relevant. The combinatorial analysis of the different approaches with the three indicators cannot reject the supremacy of cultural and geographical factors in explaining the level of protection of private property rights in West Africa.

6. CONCLUSION

This paper has highlighted the supremacy of culture and geography as levers for improving institutional quality in West African countries. The results show that the cultural approach is the most relevant. In this context, cultural fragmentation is a major source of institutional inefficiency, while all denominations contribute to the protection of private property rights.

Beyond culture, geography also plays a leading role in the protection of property rights. Thus, the greater the vastness of a country, the less the central state manages to assert its authority over the entire landmass, which favours the emergence of institutions of lower quality.

In addition, no less critical political and economic factors are involved in determining the level of institutional quality in a country. Thus, autocratic regimes are generally characterised by lower quality institutions, while democratic regimes are better at protecting private property rights.

In terms of economic policy implications, the findings suggest the following policy measures:

- Prioritize cultural and geographical features in the formulation of institutional quality improvement policies in West Africa. This policy is explained by the fact that culture is the bedrock of all the institutions and by the fragility of the states, especially in vast countries.

- Improve the quality of the institutional environment in West African countries. This can be achieved by strengthening democratisation processes by focusing on the cultural values of each country, including peaceful coexistence between different denominations.

- Promote and strengthen decentralisation processes in different West African countries. Such a policy would ensure the representativeness of the state throughout the territory and, consequently, promote better protection of private property rights.

This research can be improved by examining the relationship between informal and formal institutions to define the conditions under which cultural values can accompany specific institutional reforms.

APPENDIX

Table A1. Variables and Data Source

Variables	Definitions and Data Sources
cath80	Catholics as % of population 1980, from La Porta et al. (1999) "The Quality of Government," <i>Journal of Law, Economics, and Organization</i> , downloaded from Quality of Government Database, at Quality of Government Institute, Goteborg University.
prot80	Protestants as % of population 1980, from La Porta et al. (1999) "The Quality of Government," <i>Journal of Law, Economics, and Organization</i> , downloaded from Quality of Government Database, at Quality of Government Institute, Goteborg University.
musl80	Muslims as % of population 1980, from La Porta et al. (1999) "The Quality of Government," <i>Journal of Law, Economics, and Organization</i> , downloaded from Quality of Government Database, at Quality of Government Institute, Goteborg University.
cd03	Cultural diversity Index, source: James Fearon (2003), "Ethnic and Cultural Diversity by Country", <i>Journal of Economic Growth</i> , 8, 195-222.
autoc	An eleven-point Autocracy scale is constructed additively. The operational indicator of autocracy is derived from codings of the competitiveness of political participation, the regulation of participation, the openness and competitiveness of executive recruitment and constraints on the chief executive (CSP, 2018).
democ	The Democracy indicator is an additive eleven-point scale (0-10). The operational indicator of democracy is derived from codings of the competitiveness of political participation, the openness and competitiveness of executive recruitment and constraints on the chief executive (Center for Systemic Peace database (CSP), 2018).
durable	The number of years since the most recent regime change (defined by a three-point change in the POLITY score over a period of three years or less) or the end of transition period defined by the lack of stable political institutions (denoted by a standardized authority score). (CSP, 2018).
polity	The POLITY score is computed by subtracting the AUTOOC score from the DEMOC score; the resulting unified polity scale ranges from +10 (strongly democratic) to -10 (strongly autocratic) (CSP, 2018).
idh2000	PNUD, Human Development Index (HDI): A composite index measuring average achievement in three basic dimensions of human development - a long and healthy life, knowledge and a decent standard of living. See <i>Technical note 1</i> (http://hdr.undp.org/en) for details on how the HDI is calculated.
gini2002	GINI coefficient, 2002, from World Bank, World Development Indicators, downloaded from STM103 Global Indicators Shared Dataset, Updated Fall 2005, from http://ksghome.harvard.edu/~pnorris/Data/Data.htm
dette	Outstanding debt, WDI
fdi	Inward flows net of foreign direct investment, WDI
inflation	The inflation rate, WDI
lnarea	Natural log of area, Data used in: Treisman, D. (2007), "What Have We Learned About the Causes of Corruption from Ten Years of Cross-National Empirical Research?" <i>Annual Review of Political Science</i> , 10, 211-244.
latitude	Absolute value of latitude, calculated from dataset for La Porta, R. et al. (1999) "The Quality of Government," <i>J. Ecs., Law and Org.</i> , 15(1): 222-279, with a few additions based on CIA world factbook.
landlock	Dummy for landlocked countries, from Global Development Network Growth Database, NYU, http://www.nyu.edu/fas/institute/dri/global%20development%20network%20growth%20database.htm .
urb1998	Urban population as % of total (1998), UNDP, Human Development Report (2000), downloaded from STM103 Global Indicators Shared Dataset, Updated Fall 2005, from http://ksghome.harvard.edu/~pnorris/Data/Data.htm .

Table A2. KKZ Governance Indicators

The process by which governments are designated, monitored and replaced	
Voice and Accountability (VA)	Possibility for the citizens of a country to participate in the nomination of the members of the government. Includes indicators measuring different aspects of the political process, civil liberties, political rights and media independence.
Political Stability (PS)	Perceptions of the likelihood of an incumbent government being destabilized or overthrown by possible unconstitutional and / or violent means, including domestic violence and terrorism.
The ability of a government to formulate sound policies and implement them	
Government Effectiveness (GE)	Perceptions of the quality of public services provided and administration, the competence of public servants, the independence of the public service from political pressures, the credibility of the government's commitment to political leaders.
Regulatory Quality (RQ)	Implications of non-market policies, such as price controls or inadequate banking supervision, but also perceptions of the weight of excessive regulation on foreign trade or business development.
Respect by the state and citizens of the institutions governing their economic and social interactions	
Rule of law (RL)	A society's ability to create an environment in which fair and predictable rules serve as a foundation for economic and social interactions in the protection of property rights. Covers perceptions of crime incidence, effectiveness and predictability of the judiciary, and ability to enforce and enforce contracts.
Control of Corruption (CC)	Perceptions of corruption defined as abuse of public power to gain private gain. Covers both minor acts of corruption, skilled corruption and state capture.

Source: Adapted from Arndt and Oman, 2006. Les indicateurs de gouvernance: usages et abus, 52-53.

Table A3. Robustness Test Using Other Indicators of Institutional Quality Measurement

Variables	Dependent variable: property right of Heritage Foundation				
	Cultural approach	Geographical approach	Political approach	Economic approach	Global approach
cath80	0.927*** (0.108)				0.340 (0.213)
musl80	0.501*** (0.039)				0.029 (0.097)
prot80	0.934*** (0.102)				0.709*** (0.216)
cd03	-53.08*** (6.706)				-57.95*** (7.627)
latitude		1.987*** (0.324)			3.358*** (0.997)
lnarea		-0.780 (0.627)			0.151 (0.955)
landlock		5.694 (3.880)			4.726 (7.448)
urb1998		0.791*** (0.097)			0.766*** (0.138)
autoc			-2.686*** (0.598)		-0.072 (0.561)
democ			8.611*** (2.017)		3.295* (1.746)
durable			0.366** (0.145)		-0.290*** (0.106)
polity			-6.039*** (1.490)		-3.254*** (1.257)
idh2000				108.4*** (11.29)	22.12 (41.22)
gini2002				-0.020 (0.117)	-0.0834 (0.101)
dette				-0.007 (0.077)	0.029 (0.051)
fdi				-0.060 (0.067)	-0.012 (0.050)
inflation				-0.003 (0.003)	-0.003 (0.002)
Constant	22.73*** (4.695)	-7.391 (9.098)	16.51*** (3.785)	-5.498 (8.187)	-18.42 (15.06)
Observations	237	254	254	254	237
Number of ID	14	15	15	15	14
Log likelihood	-877.5	-991.9	-1040	-1014	-841.6

Note: Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1.

Source: Authors' estimation.

The cultural approach is the most relevant.

Table A3. Robustness Test Using Other Indicators of Institutional Quality Measurement (cont¹)

Variables	Dependent variable: Freedom House Synthetic Index				
	Cultural approach	Geographical approach	Political approach	Economic approach	Global approach
cath80	1.210*** (0.149)				-0.0779 (0.283)
musl80	0.645*** (0.054)				0.0874 (0.129)
prot80	1.105*** (0.140)				-0.225 (0.287)
cd03	-123.7*** (9.262)				-104.0*** (10.12)
latitude		3.176*** (0.489)			0.991 (1.324)
lnarea		1.371 (0.945)			1.642 (1.267)
landlock		1.609 (5.847)			26.58*** (9.882)
urb1998		1.007*** (0.146)			0.922*** (0.183)
autoc			-1.910** (0.829)		-1.479** (0.744)
democ			3.240 (2.796)		6.137*** (2.316)
durable			1.055*** (0.201)		-0.045 (0.141)
polity			-1.324 (2.065)		-4.770*** (1.668)
idh2000				159.8*** (16.06)	245.3*** (54.70)
gini2002				0.376** (0.166)	0.543*** (0.134)
dette				-0.111 (0.109)	0.006 (0.068)
fdi				-0.142 (0.096)	0.084 (0.066)
inflation				-0.011** (0.005)	-0.007** (0.003)
Constant	92.38*** (6.483)	-9.427 (13.71)	64.03*** (5.246)	0.746 (11.65)	-66.95*** (19.98)
Observations	237	254	254	254	237
Number of ID	14	15	15	15	14
Log likelihood	-954	-1096	-1123	-1104	-908.6

Note: Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1.

Source: Authors' estimation.

The cultural approach is the most relevant.

Table A3. Robustness Test Using Other Indicators of Institutional Quality Measurement (cont¹)

Variables	Dependent variable: ICRG summary index				
	Cultural approach	Geographical approach	Political approach	Economic approach	Global approach
cath80	0.058** (0.024)				0.044 (0.040)
musl80	0.039*** (0.010)				0.015 (0.021)
prot80	0.039 (0.024)				0.067* (0.040)
cd03	-11.15*** (1.584)				-7.400*** (1.478)
latitude		0.219*** (0.062)			0.145 (0.205)
lnarea		-1.020*** (0.169)			-1.140*** (0.176)
landlock		3.279*** (0.848)			4.320*** (1.415)
urb1998		0.067** (0.029)			0.057** (0.026)
autoc			-0.415*** (0.102)		-0.346*** (0.104)
democ			1.468*** (0.331)		1.098*** (0.323)
durable			0.0419* (0.025)		0.034 (0.021)
polity			-1.046*** (0.241)		-0.754*** (0.232)
idh2000				1.517 (3.217)	9.037 (7.660)
gini2002				0.031 (0.026)	0.037* (0.019)
dette				0.004 (0.015)	0.013 (0.009)
fdi				-0.008 (0.013)	-0.001 (0.009)
inflation				-0.001 (0.001)	-0.000 (0.000)
Constant	19.23*** (1.182)	22.87*** (1.725)	13.30*** (0.627)	14.03*** (2.170)	20.42*** (2.780)
Observations	207	207	207	207	207
Number of ID	13	13	13	13	13
Log likelihood	-449.5	-449.6	-448.2	-481	-377.9

Note: Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1.

Source: Authors' estimation.

The cultural approach is the most relevant.

Table A4. Robustness Test of the Supremacy of Cultural and Geographical Factors in Explaining Institutional Quality Using the Heritage Foundation Simple Indicator

Variables	(1) C	(2) C-G	(3) C-P	(4) C-E	(5) G-P	(6) G-E
cath80	0.927*** (0.108)	0.942*** (0.123)	0.892*** (0.110)	0.920*** (0.167)		
musl80	0.501*** (0.039)	0.447*** (0.080)	0.492*** (0.039)	0.505*** (0.048)		
prot80	0.934*** (0.102)	0.928*** (0.108)	0.964*** (0.101)	0.964*** (0.137)		
cd03	-53.08*** (6.706)	-49.13*** (6.405)	-58.65*** (6.750)	-55.45*** (6.817)		
latitude		0.513 (0.708)			1.930*** (0.317)	1.521*** (0.297)
lnarea		-2.597*** (0.756)			-0.192 (0.651)	-0.843 (0.564)
landlock		15.36*** (4.169)			7.919** (3.949)	15.33*** (3.486)
urb1998		0.659*** (0.121)			1.034*** (0.117)	0.387*** (0.098)
autoc			-0.855* (0.447)		0.402 (0.564)	
democ			3.872*** (1.450)		1.045 (1.824)	
durable			0.024 (0.106)		-0.084 (0.121)	
polity			-3.127*** (1.054)		-1.358 (1.327)	
idh2000				-23.49 (18.66)		101.7*** (13.74)
gini2002				-0.267*** (0.103)		-0.381*** (0.099)
dette				0.061 (0.058)		0.032 (0.061)
fdi				-0.008 (0.055)		-0.040 (0.055)
inflation				-0.001 (0.003)		-0.002 (0.003)
Constant	22.73*** (4.695)	23.22*** (8.882)	19.11*** (5.233)	44.72*** (9.861)	-22.66** (10.29)	-10.50 (11.34)
Observations	237	237	237	237	254	254
Number of ID	14	14	14	14	15	15
Log likelihood	-877.5	-862.6	-868.8	-872.6	-978.2	-951.5

Note: Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1.

Source: Authors' estimation.

The supremacy of cultural and geographical factors cannot be rejected.

Table A4. Robustness Test of the Supremacy of Cultural and Geographical Factors in Explaining Institutional Quality Using the Heritage Foundation Simple Indicator (cont')

Variables	(7) P-E	(8) C-G-P	(9) C-G-E	(10) G-P-E	(11) C-P-E	(12) C-G-P-E
cath80		0.491*** (0.137)	0.553*** (0.207)		0.841*** (0.169)	0.340 (0.213)
musl80		0.055 (0.096)	0.356*** (0.087)		0.485*** (0.0501)	0.0285 (0.0974)
prot80		0.815*** (0.107)	0.674*** (0.179)		0.954*** (0.144)	0.709*** (0.216)
cd03		-60.81*** (6.280)	-42.95*** (7.248)		-59.17*** (6.933)	-57.95*** (7.627)
latitude		3.559*** (0.806)	0.306 (0.791)	1.398*** (0.289)		3.358*** (0.997)
lnarea		0.343 (0.878)	-3.000*** (0.838)	0.346 (0.602)		0.151 (0.955)
landlock		1.955 (4.573)	21.72*** (6.409)	15.42*** (3.477)		4.726 (7.448)
urb1998		0.789*** (0.129)	0.650*** (0.133)	0.531*** (0.120)		0.766*** (0.138)
autoc	-2.552*** (0.526)	0.109 (0.442)		-0.903* (0.502)	-0.712 (0.482)	-0.0720 (0.561)
democ	9.209*** (1.755)	2.833* (1.467)		5.075*** (1.636)	3.304** (1.572)	3.295* (1.746)
durable	-0.006 (0.129)	-0.282*** (0.105)		-0.249** (0.106)	0.018 (0.105)	-0.290*** (0.106)
polity	-6.774*** (1.293)	-2.962*** (1.091)		-4.220*** (1.196)	-2.688** (1.142)	-3.254*** (1.257)
idh2000	100.1*** (11.49)		54.55 (33.51)	113.9*** (13.88)	-10.45 (19.56)	22.12 (41.22)
gini2002	-0.048 (0.114)		-0.169 (0.107)	-0.209** (0.102)	-0.195* (0.102)	-0.0834 (0.101)
dette	-0.033 (0.072)		0.041 (0.055)	0.005 (0.058)	0.0532 (0.056)	0.029 (0.051)
fdi	-0.132** (0.065)		-0.027 (0.053)	-0.065 (0.053)	-0.016 (0.055)	-0.012 (0.050)
inflation	-0.003 (0.003)		-0.002 (0.002)	-0.003 (0.003)	-0.001 (0.003)	-0.003 (0.002)
Constant	-17.10** (8.461)	-19.72* (11.02)	22.89* (12.55)	-47.29*** (13.20)	34.21*** (10.84)	-18.42 (15.06)
Observations	254	237	237	254	237	237
Number of ID	15	14	14	15	14	14
Log likelihood	-997.3	-843.3	-858.9	-937.6	-866	-841.6

Note: Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1.

Source: Authors' estimation.

The supremacy of cultural and geographical factors cannot be rejected.

Table A5. Robustness Test of the Supremacy of Cultural and Geographical Factors Using the Freedom House Synthetic Index

Variables	(1) C	(2) C-G	(3) C-P	(4) C-E	(5) G-P	(6) G-E
cath80	1.210*** (0.149)	0.876*** (0.165)	1.156*** (0.153)	1.137*** (0.231)		
musl80	0.645*** (0.054)	0.278*** (0.107)	0.662*** (0.055)	0.622*** (0.067)		
prot80	1.105*** (0.140)	0.848*** (0.145)	1.144*** (0.140)	0.975*** (0.190)		
cd03	-123.7*** (9.262)	-121.6*** (8.585)	-117.6*** (9.367)	-120.7*** (9.406)		
latitude		2.908*** (0.948)			2.831*** (0.483)	1.887*** (0.441)
lnarea		2.217** (1.014)			1.225 (0.993)	2.166*** (0.838)
landlock		-1.507 (5.588)			2.146 (6.021)	16.25*** (5.179)
urb1998		0.597*** (0.162)			0.955*** (0.179)	0.417*** (0.146)
autoc			-0.155 (0.620)		0.933 (0.861)	
democ			-0.931 (2.012)		-3.373 (2.782)	
durable			0.503*** (0.147)		0.611*** (0.185)	
polity			1.034 (1.463)		2.608 (2.024)	
idh2000				42.97* (25.74)		186.2*** (20.42)
gini2002				0.306** (0.142)		0.102 (0.148)
dette				0.037 (0.080)		-0.048 (0.090)
fdi				0.071 (0.076)		-0.066 (0.082)
inflation				-0.007* (0.004)		-0.009** (0.004)
Constant	92.38*** (6.483)	34.95*** (11.90)	86.15*** (7.262)	62.77*** (13.60)	0.017 (15.68)	-62.43*** (16.84)
Observations	237	237	237	237	254	254
Number of ID	14	14	14	14	15	15
Log likelihood	-954	-932	-946.4	-948.8	-1085	-1052

Note: Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1.

Source: Authors' estimation.

The supremacy of cultural and geographical factors cannot be rejected.

Table A5. Robustness Test of the Supremacy of Cultural and Geographical Factors Using the Freedom House Synthetic Index (cont')

Variables	(7) P-E	(8) C-G-P	(9) C-G-E	(10) G-P-E	(11) C-P-E	(12) C-G-P-E
cath80		0.545*** (0.196)	0.268 (0.261)		1.087*** (0.233)	-0.078 (0.283)
musl80		0.055 (0.137)	0.268** (0.110)		0.637*** (0.069)	0.087 (0.129)
prot80		0.850*** (0.152)	0.023 (0.226)		1.004*** (0.198)	-0.225 (0.287)
cd03		-125.9*** (8.948)	-101.9*** (9.157)		-115.8*** (9.536)	-104.0*** (10.12)
latitude		4.635*** (1.149)	0.274 (0.999)	1.732*** (0.443)		0.991 (1.324)
lnarea		3.833*** (1.251)	-0.219 (1.059)	2.934*** (0.924)		1.642 (1.267)
landlock		-9.937 (6.517)	31.12*** (8.097)	12.60** (5.339)		26.58*** (9.882)
urb1998		0.612*** (0.184)	0.982*** (0.168)	0.329* (0.184)		0.922*** (0.183)
autoc	-1.792** (0.752)	0.356 (0.630)		-0.997 (0.771)	-0.497 (0.662)	-1.479** (0.744)
democ	4.452* (2.512)	0.553 (2.091)		3.462 (2.512)	0.382 (2.162)	6.137*** (2.316)
durable	0.591*** (0.184)	0.119 (0.149)		0.336** (0.163)	0.487*** (0.145)	-0.045 (0.141)
polity	-2.663 (1.849)	-0.912 (1.555)		-2.493 (1.836)	0.034 (1.570)	-4.770*** (1.668)
idh2000	126.6*** (16.43)		208.4*** (42.33)	181.6*** (21.31)	44.26 (26.91)	245.3*** (54.70)
gini2002	0.250 (0.163)		0.489*** (0.135)	0.183 (0.156)	0.314** (0.140)	0.543*** (0.134)
dette	-0.109 (0.103)		0.020 (0.069)	-0.046 (0.089)	0.045 (0.078)	0.006 (0.068)
fdi	-0.202** (0.093)		0.094 (0.066)	-0.082 (0.082)	0.069 (0.075)	0.084 (0.066)
inflation	-0.009*		-0.007**	-0.008**	-0.006*	-0.007**
Constant		0.545*** (0.196)	0.268 (0.261)		1.087*** (0.233)	-0.078 (0.283)
Observations		0.055 (0.137)	0.268** (0.110)		0.637*** (0.069)	0.087 (0.129)
Number of ID		0.850***	0.023		1.004***	-0.225
Log likelihood		(0.152)	(0.226)		(0.198)	(0.287)

Note: Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1.

Source: Authors' estimation.

The supremacy of cultural and geographical factors cannot be rejected.

Table A6. Robustness Test of the Supremacy of Cultural and Geographical Factors in Explaining Institutional Quality Using the ICRG Composite Index

Variables	(1) C	(2) C-G	(3) C-P	(4) C-E	(5) G-P	(6) G-E
cath80	0.058** (0.024)	0.073*** (0.025)	0.038* (0.022)	0.187*** (0.037)		
musl80	0.039*** (0.009)	0.018 (0.018)	0.020** (0.009)	0.071*** (0.011)		
prot80	0.039 (0.024)	0.137*** (0.023)	0.008 (0.022)	0.118*** (0.032)		
cd03	-11.15*** (1.584)	-8.782*** (1.305)	-10.75*** (1.378)	-12.19*** (1.551)		
latitude		0.377** (0.149)			0.117** (0.056)	0.179*** (0.056)
lnarea		-1.224*** (0.145)			-1.011*** (0.169)	-1.486*** (0.163)
landlock		3.458*** (0.811)			3.193*** (0.805)	7.105*** (0.910)
urb1998		0.056** (0.025)			0.055* (0.029)	0.098*** (0.028)
autoc			-0.479*** (0.090)		-0.268*** (0.098)	
democ			1.697*** (0.290)		0.763** (0.321)	
durable			0.016 (0.022)		0.060*** (0.023)	
polity			-1.225*** (0.210)		-0.481** (0.235)	
idh2000				-12.43*** (4.040)		25.08*** (3.318)
gini2002				0.055** (0.023)		0.044** (0.021)
dette				0.023* (0.012)		0.017 (0.011)
fdi				0.020* (0.012)		0.008 (0.010)
inflation				-0.000 (0.001)		-0.000 (0.001)
Constant	19.23*** (1.182)	26.23*** (1.707)	17.36*** (1.107)	18.49*** (2.253)	22.74*** (1.916)	15.51*** (2.234)
Observations	207	207	207	207	207	207
Number of ID	13	13	13	13	13	13
Log likelihood	-449.5	-404.7	-417.2	-438.9	-420.6	-422.8

Note: Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1.

Source: Authors' estimation.

The supremacy of cultural and geographical factors cannot be rejected.

Table A6. Robustness Test of the Supremacy of Cultural and Geographical Factors in Explaining Institutional Quality Using the ICRG Composite Index (cont')

Variables	(7) P-E	(8) C-G-P	(9) C-G-E	(10) G-P-E	(11) C-P-E	(12) C-G-P-E
cath80		0.050*	0.118***		0.111***	
		(0.027)	(0.040)		(0.033)	
musl80		0.004	0.034*		0.040***	
		(0.021)	(0.020)		(0.011)	
prot80		0.097***	0.151***		0.068**	
		(0.023)	(0.035)		(0.031)	
cd03		-8.402***	-9.155***		-10.98***	
		(1.223)	(1.485)		(1.371)	
latitude		0.339**	0.326*	0.080		
		(0.163)	(0.171)	(0.051)		
lnarea		-1.041***	-1.207***	-1.372***		
		(0.162)	(0.162)	(0.156)		
landlock		2.775***	3.344***	6.471***		
		(0.854)	(1.266)	(0.821)		
urb1998		0.045*	0.057**	0.077***		
		(0.026)	(0.026)	(0.027)		
autoc	-0.485***	-0.283***		-0.423***	-0.416***	-0.485***
	(0.104)	(0.083)		(0.089)	(0.095)	(0.104)
democ	1.751***	0.899***		1.279***	1.558***	1.751***
	(0.341)	(0.274)		(0.290)	(0.305)	(0.341)
durable	0.036	0.040*		0.028	0.019	0.036
	(0.025)	(0.021)		(0.021)	(0.021)	(0.025)
polity	-1.265***	-0.614***		-0.858***	-1.148***	-1.265***
	(0.249)	(0.203)		(0.213)	(0.221)	(0.249)
idh2000	3.755		-1.827	22.74***	-5.451	3.755
	(2.798)		(6.464)	(3.049)	(3.777)	(2.798)
gini2002	0.051**		0.036*	0.041**	0.063***	0.051**
	(0.023)		(0.021)	(0.019)	(0.020)	(0.023)
dette	0.000		0.020*	0.010	0.014	0.000
	(0.012)		(0.010)	(0.010)	(0.011)	(0.012)
fdi	-0.018		0.001	-0.006	0.005	-0.018
	(0.011)		(0.001)	(0.009)	(0.010)	(0.011)
inflation	-0.001		-0.000	-0.000	-0.000	-0.001
	(0.001)		(0.000)	(0.001)	(0.001)	(0.001)
Constant	9.159***	24.18***	24.38***	14.87***	14.73***	9.159***
	(2.121)	(2.063)	(2.403)	(2.467)	(2.170)	(2.121)
Observations	207	207	207	207	207	207
Number of ID	13	13	13	13	13	13
Log likelihood	-442.5	-381.3	-401.3	-392.8	-410	-442.5

Note: Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1.

Source: Authors' estimation.

The supremacy of cultural and geographical factors cannot be rejected.

REFERENCES

- Acemoglu, D. (2003), "Why not a Political Coase Theorem? Social Conflict, Commitment, and Politics," *Journal of Comparative Economics*, 31(4), 620-652.
- Acemoglu, D., and S. Johnson (2005), "Unbundling Institutions," *Journal of Political Economy*, 113(5), 949-995.
- Acemoglu, D., S. Johnson, and J.A. Robinson (2001), "The Colonial Origins of Comparative Development: An Empirical Investigation," *The American Economic Review*, 91(5), 1369-1401.
- _____ (2005), "Institutions as the Fundamental Cause of Long Run Growth," in Aghion, P. and S. Durlauf eds., *Handbook of Economic Growth*, 1 (Part A), 385-472, North Holland, Amsterdam.
- Alesina, A., and P. Giuliano (2015), "Culture and Institutions," *Journal of Economic Literature*, 53(4), 898-944.
- Alesina, A., A. Devleeschauwer, W. Easterly, S. Kurlat and R. Wacziarg (2003), "Fractionalization," *Journal of Economic Growth*, 8(2), 155-94.
- Ali, F.A. (2010), "Essays on Foreign Direct Investment, Institutions, and Economic Growth," PhD Thesis, University of Glasgow.
- Alonso, J.A. and C. Garcimartin (2013), "The Determinants of Institutional Quality. More on the Debate," *Journal of International Development*, 25(2), 206-226
- Beck, T., A. Demirgüç-Kun, and L. Ross (2003), "Law, Endowments, and Finance," *Journal of Financial Economics*, 70(2), 137-181.
- Borner, S., F. Bodmer, and M. Kobler (2004), *Institutional Efficiency and its Determinants: The Role of Political Factors in Economic Growth*, OECD Development Centre (in French).
- Boyer, R. (2003), "The Comparative Historical Analyses and Institutional Change: What Concern for Regulation Theory," *L'Année de la regulation*, 7, 167-203 (in French).
- Bozio, A., and J. Grenet (2010), *Economie des politiques publiques*, Paris: La Découverte (in French).
- Chavance, B. (2012), *L'économie institutionnelle*, La Découverte, Paris.
- Chong, A., and C. Calderón (2000), "Causality and Feedback between Institutional Measures and Economic Growth," *Economics and Politics*, 12(1), 69-81.
- Clague, C., P. Keefer, S. Knack, and M. Olson (1996), "Property and Contract Rights under Democracy and Dictatorship," *Journal of Economic Growth*, 1(2), 243-276.
- Collier, P. (2000), "Ethnicity, Politics and Economic Performance," *Economics and Politics*, 12(3), 225-245.
- Delorme, R., and C. Andre (1983), *L'Etat et l'économie. Un essai d'explication des dépenses publiques en France (1870-1980)*, Paris, Seuil.
- Demsetz, H. (1967), "Toward a Theory of Property Rights," *American Economic Review*, 57(2), 61-70.
- Diamond, J. (1997), *Guns, Germs, and Steel: The Fates of Human Societies*, New York: W.W. Norton.

- Easterly, W., and R. Levine (1997), "Africa's Growth Tragedy: Policies and Ethnic Divisions," *The Quarterly Journal of Economics*, 112(4), 1203-1250.
- _____ (2003), "Tropics, Germs, and Crops: How Endowments Influence Economic Development," *Journal of Monetary Economics*, 50(1), 3-39.
- Fearon, J.D. (2003), "Ethnic and Cultural Diversity by Country," *Journal of Economic Growth*, 8(2), 195-222.
- Gujarati, D.N. (2004), *Basic Econometrics*, 4th Edition, McGraw-Hill Companies.
- Hall, R., and C. Jones (1999), "Why Do Some Countries Produce So Much More Output per Worker than Others?" *Quarterly Journal of Economics*, 114(1), 83-116
- Hamilton, W. (1919), "The Institutional Approach to Economic Theory," *American Economic Review*, 9(1), 309-318.
- Im, K.S., H.M. Pesaran, and Y. Shin (2003), "Testing for Unit Roots in Heterogeneous Panels," *Journal of Econometrics*, 115(1), 53-74.
- Isham, J., M. Woolcock, L. Pritchett and G. Busby (2005), "The Varieties of Resource Experience: Natural Resource Export Structures and the Political Economy of Economic Growth," *World Bank Economic Review*, 19(2), 141-174.
- Islam, R., and C. Montenegro (2002), "What Determines the Quality of Institutions?" Background Paper for the World Development Report 2002, Building Institutions for Markets, 19.
- Kaufmann, D., and A. Kraay (2002), "Growth without Governance," *Economica*, 3(1), 169-2015.
- Krueger, A.O. (1993), *Political Economy of Policy Reform in Developing Countries*, Cambridge: The MIT Press.
- La Porta, R., L.S. Florencio, A. Shleifer, and R. Vishny (1999), "The Quality of Government," *Journal of Law, Economics and Organization*, 15(1), 222-279.
- Landes, D. (1998), *The Wealth and Poverty of Nations: Why Some Are So Rich and Some*, New York: W.W. Norton.
- Leite, C. and J. Weidmann (1999), "Does Mother Nature Corrupt - Natural Resources, Corruption, and Economic Growth," IMF Working Paper, 34.
- Licht, A.N., C. Goldschmidt, and S.H. Schwartz (2007), "Culture Rules: The Foundations of the Rule of Law and Other Norms of Governance," *Journal of Comparative Economics*, 35(4), 659-688.
- _____ (2005), "Culture, Law, and Corporate Governance," *International Review of Law and Economics*, 25(2), 229-255.
- Mauro, P. (1995). Corruption and growth. *The Quarterly Journal of Economics*, 110(3), 681-712.
- Menger, C. (1883), *Investigations into the Method of the Social Sciences, and of Political Economy in particular*, French eds. (translated by G. Campagnolo), School of Advanced Studies in the Social Sciences Press.
- Mijiyawa, A.G. (2010), "Institutions et développement: analyse des effets macroéconomiques des institutions et de réformes institutionnelles dans les pays en développement," PhD thesis, University of Auvergne (in French).

- Muke, C.T., J.P. Tsasa Vangu, M.A. Lokota Ilondo, and Y. Boboy (2013), “De l’estimateur des Moindres carrés généralisés à l’estimateur robuste de White: Formalisation, Estimation et Test statistique,” *Economic One pager Laréq*, 8(21), 241-251 (in French).
- North, D. (1981), *Structure and Change in Economic History*, New York, Norton.
- ____ (1993), “The Ultimate Sources of Economic Growth,” in Szirmai A., B. Ark, and D. Pilat, *Explaining Economic Growth: Essays in Honour of Angus Maddison*, Amsterdam.
- ____ (1994), “Economic Performance through Time,” *The American Economic Review*, 84(3), 359-368.
- North, D., and R.P. Thomas (1973), *The Rise of the Western World: A New Economic History*, Cambridge: Cambridge University Press.
- Nunn, N., and D. Puga (2012), “Ruggedness: The Blessing of Bad Geography in Africa,” *Review of Economics and Statistics*, 94(1), 20-36.
- Putnam, R. (1994), *Making Democracy Work: Civic Traditions in Modern Italy*, Princeton University Press, 280.
- Rodrik, D., A. Subramanian, and F. Trebbi (2004), “Institutions Rule: The Primacy of Institutions Over Geography and Integration in Economic Development,” *Journal of Economic Growth*, 9(2), 131-165.
- Sachs, J.D. (2000), “Tropical Underdevelopment,” Center for International Development, Working Paper No. 57, 34.
- Sachs, J.D. and A.M. Warner (1997), “Natural Resource Abundance and Economic Growth,” Harvard Institute for International Development Working No.50.
- Siba, E.G. (2008), “Determinants of Institutional Quality in Sub-Saharan African Countries,” Working Papers in Economics No.310, 25.
- Stulz, R. and R. Williamson (2003), “Culture, Openness, and Finance,” *Journal of Financial Economics*, 70(3), 313-349.
- Treisman, D. (2007), “What Have We Learned About the Causes of Corruption from Ten Years of Cross-National Empirical Research?” *Annual Review of Political Science*, 10, 211-244.
- Varoudakis, A. (1996), “Régimes non démocratiques et croissance: théorie et estimation,” *Revue économique*, 47(3), 831-840 (in French).
- Veblen, T. (1899), *The Theory of The Leisure Class*, New York: Dover Thrift Editions.
- Weber, M. (1958), *The Religion of India: The Sociology of Hinduism and Buddhism*, New York: The Free Press.

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