



Evaluation of the Quality of Governance in African Countries using Aggregate Indicators

Zuzana Novotná¹, Petra Šánová^{2*}, Adriana Laputková³

¹Department of Statistics, Faculty of Economics and Management, Czech University of Life Sciences Prague, Kamýcká 129, Prague 6 - Suchdol, Czech Republic, ²Department of Trade and Finance, Faculty of Economics and Management, Czech University of Life Sciences Prague, Kamýcká 129, Prague 6 - Suchdol, Czech Republic, ³Department of Languages, Faculty of Economics and Management, Czech University of Life Sciences Prague, Kamýcká 129, Prague 6 - Suchdol, Czech Republic.

*Email: sanova@pef.czu.cz

ABSTRACT

The paper focuses on evaluation of the quality of governance in 53 African countries. The quality of governance is evaluated using factors such as government effectiveness, control of corruption, rule of law, which are monitored in each African country individually for the period between 2004 and 2010. In order to assess the quality of governance as well as the relative position of each African country, the ratio aggregation method was used in its simple form. The results of the analysis show substantial disparities among African countries. Somalia, Zimbabwe and Equatorial Guinea reach the worst results, with considerably high levels of corruption. The results of the analysis of each country are presented using a coloured map of Africa.

Keywords: Quality of Governance, Government Effectiveness, Control of Corruption, Rule of Law, Africa, Aggregate Indicator, Ratio Method

JEL Classifications: H75, K00

1. INTRODUCTION

Africa is a continent with specific problems differentiating this part of the world from other regions. Low economic performance ranks most of African countries among the poorest. On the other hand, African resources and unexploited opportunities offer a potential for a considerable economic development (Tomsík et al., 2015).

The quality of a country's governance is known to be affecting the operation of financial and capital markets through its influences on the availability of external financing, cost of funding, market valuations, and quality of investments (Chen et al., 2009; Hooper et al., 2009; Chiou et al., 2010). Good governance is the form of institutions that establish a predictable, impartial, and consistently enforced set of rules for investors. It is crucial for the sustained and rapid growth in per capita incomes of poor countries (Knack and Keefer, 1997). Moreover, the impact of good governance appears to be progressive, with the worst neutral effects on the distribution of incomes within countries, and some evidence of egalitarian effects on income distributions (Knack, 1999). La Porta

et al. (2002) have highlighted the important roles of laws and legal enforcement in affecting the governance of firms, corporate valuations, development of markets, and economic growth.

Various studies suggest that the quality of governance is linked to the national well-being of citizens (Holmberg et al., 2009). Kopriva et al. (2015) says, that government and political representatives who have a key influence on decision-making are the most important from the viewpoint of endogenous factors in terms of local or regional development. The quality of governance does not refer to the physical size of financial resources of government but instead refers to the quality of public policy-making and delivery and the extent to which decision-making and policy implementation is conducted in a transparent, efficient and impartial way (Rothstein and Teorell, 2008). Many comparative studies of governance have found that the welfare of citizens is generally better in countries where the quality of governance scores are higher (Holmberg et al., 2009). The quality of governance is reported to be linked to income equality and poverty levels (Chong and Calderón, 2000), education and health (Gupta et al., 1998),

environmental degradation (Morse, 2006), happiness (Frey and Stutzer, 2000) and economic performance (Mo, 2001).

The notion of global governance has always been intimately linked to that of crisis (Broome et al., 2012). Much of Africa has experienced political instability and war. More than half of the countries in sub-Saharan Africa have had significant political instability since independence, including civil war and violent coups (Collier and Gunning, 1995). In the past few years, almost a quarter of the countries in the region have been involved in regional or civil wars or are experiencing substantial internal strife. Deep political and economic development failures - not tribalism or ethnic hatred - are the root causes of Africa's problems (Elbadawi and Sambanis, 2009). Poor leadership is a continual problem (Gray and McPherson, 2001). Political instability disrupts domestic revenue generation both because investment, production, and trade generally drop during the period of instability and because tax collection becomes much more difficult.

Governance has been added to the many conditionalities imposed as a requirement for funding from the International Monetary Fund, World Bank, and bilateral donors (Kaufmann et al., 2010). Corruption in government procurement programs is a perennial problem (Sikka and Lehman, 2015). Corruption receives the lion's share of the press, but related problems include inadequate official information, weak mechanisms of accountability, poorly enforced rule of law, and bureaucracies that are ineffective and unresponsive (Bräutigam and Knack, 2004). Poor governance has multiple causes, and once governance begins to decline, a vicious cycle of inadequate revenues, low morale, and poor performance is all too easily created (Bräutigam and Knack, 2004). First, state capacity and institutions of governance in many African countries have never been particularly strong. The newly independent nations of Africa were not well prepared for self-government, and many faced ethnic tensions that had been exacerbated by colonial rule. Local skill bases were weak. Only six universities had been established in all of sub-Saharan Africa, and in 1960 postsecondary enrolment levels were about one-sixtieth of those in Asia and Latin America (Mutahaba et al., 1993). African political economies have been beset by a different order of problems to those in other regions, manifest more clearly in political crisis of stability (Harrison, 2004).

High levels of aid have the potential to improve governance, but they can also work against governance improvements. On the positive side, high levels of aid channelled to governments with clear development agendas can be used to improve the quality of the civil service, strengthen policy and planning capacity, and establish strong central institutions. In the East Asian region, South Korea and Taiwan are good examples of this, while Botswana shows that the same processes can also work in sub-Saharan Africa (Carlsson et al., 1997). Aid can release the binding constraint of low revenues for governments committed to development (Devarajan et al., 2001). Some researchers have found that high levels of aid (at around 40-45% of GDP) promote growth when given to countries with good macroeconomic policies (Durberry et al., 1998). Stead (2014) also evaluated the quality of governance in various parts of the world, however, always during

one monitored period. Other authors solve only add economic value in a concrete country (Maitah et al., 2015) or from the view of economic decisions made under the conditions of risk (Soukup et al., 2014).

The aim of this paper is to examine and evaluate the quality of governance in individual African countries in a several-year period (2004-2010). This enables evaluation and monitoring of the development tendencies in factors representing the quality of governance (such as government effectiveness, control of corruption, rule of law), and at the same time the development of the aggregate indicator itself can be captured. Its partial aim is to identify differences among African countries and their relative positions based on the resulting quality of governance.

2. METHODOLOGY

The quality of national governance is often measured by the Worldwide Governance Indicators (WGIs) (Kaufmann, 2011) and the investor protection index developed by Doing Business Project (World Bank, 2012; 2013). WGIs are considered the primary and most widely-used indicators in multi country comparative studies (Ngobo and Fouda, 2012). Reporting WGIs consist of broad dimensions of the quality of national governance. The six dimensions of the quality of national governance include: Voice and accountability, political stability and absence of violence/terrorism, government effectiveness, regulatory quality, rule of law and control of corruption (Kaufman, 2011).

The following factors were considered for the analysis itself: Government effectiveness, control of corruption and rule of law. The input data for the analysis were obtained from World Bank and Transparency International (www.govindicators.org). The data have been monitored with a several-year delay, which is the reason why only the period between 2004 and 2010 is analysed. Each factor is described in more detail in the Table 1.

At first, the exploratory data analysis was applied to the input data. Using the analysis in SPSS 22, the values of descriptive characteristics - position and variability - were identified. This concerned the average, minimum and maximum, coefficient of variation, skewness and kurtosis.

After the initial examination of the data and using the aggregate method, relative positions of African countries were calculated and defined as well as their order based on the quality of governance. Aggregate indicators are suitable tools for identification and decrease of regional disparities, they enable description of complex phenomena and can be interpreted more easily than the whole set of partial (individual) factors. They also enable fast comparison of countries in a given aspect. Several authors have discussed aggregate indicators in their work (Sen, 1987; Saisana and Tarantola, 2002; Saltelli et al., 2005; Hrach and Mihola, 2006). Some authors use the order method (Saisana and Tarantola, 2002) or the method of standardization (Svatošová et al., 2005). However, as the aggregate indicator was required, the ratio aggregation method was used in its simple form:

Table 1: Selected factors used to examine the quality of governance in African countries in the period between 2004 and 2010

Indicator	Characteristics
Government effectiveness	Capturing perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies
Control of corruption	Capturing perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence
Rule of law	Rule of Law captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. The estimate gives the country's score on the aggregate indicator, in units of a standard normal distribution, i.e., ranging from approximately -2.5 to 2.5

Source: Own processing (2015) according to Kaufmann et al. (2010)

$$SI = \frac{\sum_{j=1}^n y_{ij}}{m}, \text{ where } y \text{ is an adjusted value for } i\text{-country } i = 1, \dots,$$

13, a j -factor $j = 1, \dots, m$, where m is the number of the countries in individual dimensions, x_{ij} is the initial value of the j -factor for i -country, x_j is arithmetic average of the j -factor.

While: $y_{ij} = \frac{x_{ij}}{\bar{x}_j}$ when the lower value of the factor indicates a better state.

This method derives from the new value of the partial factor and is calculated as the ratio of the real value of the factor to the average value (or median). This is the reason why the aggregate indicator for each African country was calculated as an arithmetic average of newly determined values of partial factors. Minařík and Dufek (2010) mention the same method in their work. In order to visualize regional disparities, a graphical presentation (SW Excel) and maps of Africa (SW) were used, which enable clear presentation of the distribution of the monitored variables in the territory of a particular country.

3. RESULTS AND DISCUSSION

At first, the exploratory analysis was applied to a selected variable. The results of the analysis are presented in Table 2. This concerns characteristics of position and variability which provide basic descriptive information about the monitored data sets in the monitored year.

Based on the calculations of descriptive characteristics focusing on individual factors that evaluate the quality of governance, it might be concluded that average Government Effectiveness reaches -0.5843, average control of corruption reaches -0.7651 and average rule of law reaches -0.7029. A very high degree of variability has been discovered in all the variables. The control of corruption factor reached the coefficient of variation 77.592% and the government effectiveness and rule of law variables reached the coefficient of variation as high as 90.00%.

This means that individual variables related to individual African countries fluctuate significantly. Thus we can summarize that, based on the monitored variables, African countries are significantly heterogeneous. To conclude the exploratory analysis, the Skewness and kurtosis ratios were calculated. These ratios can be used to determine a frequency distribution. Based on this, it might be stated that the selected variable control of corruption has a slightly higher concentration of low values in comparison with the density of high values and this results in a skewed distribution of data (skewness = 0.602), which can be described as positive. On the contrary, based on the lower value of the kurtosis ratio (kurtosis = 0.264) it can be concluded that the data is spatially distributed; therefore there is a lower concentration of mean values in comparison with other values of a particular variable.

Furthermore, aggregate indicators for individual factors in the monitored period have been investigated, that is aggregate indicators for government effectiveness, an indicator for control of corruption as well as an indicator for rule of law (Table 3). Subsequently, a cumulative aggregate indicator, that is the aggregate indicator for the quality of governance, was calculated based on the individual indicators. According to the cumulative aggregate indicator, Mauritius reached the best results in the quality of governance in the monitored period (except for the first monitored years 2004-2006). In the first monitored years 2004-2006, Botswana reached the best results. Cape Verde, Namibia and Seychelles also reached good results in the last monitored years. Individual African countries are highly heterogeneous (Table 2 - Coefficient of variation), thus significantly imbalanced. Therefore, this fact must be taken into consideration when interpreting some countries' positions.

Somalia, Zimbabwe and Equatorial Guinea are positioned at the end of the chart. These countries' results in the factors mentioned were considerably worse. Somalia has long-term had the highest level of corruption (presented using the control of corruption factor). The country's results in the remaining two factors are also notably worse (monitored values).

In the monitored period, Cape Verde's and Namibia's positions have gradually improved (from 49th to 51st and from 47th to 50th respectively). Cape Verde shows a much better result in control of corruption, from 0.260 (in 2004) to 0.770 in 2010, and in Rule of Law, from 0.309 in 2002 to 0.425 in 2010.

Regarding the total aggregate indicator values of the quality of governance, variability reaches more than 80%, which signifies high fluctuation among the countries in all the monitored years.

Table 2: Basic characteristics of selected variables for 2010

Variables (indicators)	Mean	Minimum	Maximum	Coefficient of variation (%)	Skewness	Kurtosis
Government effectiveness	-0.584	-2.240	0.970	106.865	0.218	-0.094
Control of corruption	-0.765	-1.730	0.770	77.592	0.602	0.264
Rule of law	-0.703	-2.450	0.860	90.017	0.074	0.437

Source: Own research (2015)

Table 3: Calculated aggregate indicators for each monitored year

Sequence	State	2004	2005	2006	2007	2008	2009	2010
1 st	Somalia	0.057	0.053	0.061	0.063	0.065	0.060	0.059
2 nd	Zimbabwe	0.037	0.038	0.039	0.040	0.043	0.045	0.044
3 rd	Equatorial Guinea	0.042	0.040	0.041	0.042	0.041	0.041	0.041
4 th	Dem. Rep. Congo	0.039	0.040	0.042	0.042	0.040	0.040	0.040
5 th	Chad	0.034	0.037	0.038	0.041	0.043	0.040	0.040
49 th	Seychelles	-0.003	-0.002	-0.001	-0.004	-0.005	-0.005	-0.005
50 th	Namibia	-0.001	-0.001	-0.003	-0.005	-0.011	-0.005	-0.005
51 th	Cape Verde	-0.006	-0.005	-0.013	-0.017	-0.013	-0.012	-0.012
52 th	Botswana	-0.020	-0.022	-0.018	-0.020	-0.021	-0.020	-0.021
53 th	Mauritius	-0.018	-0.017	-0.017	-0.019	-0.021	-0.021	-0.021

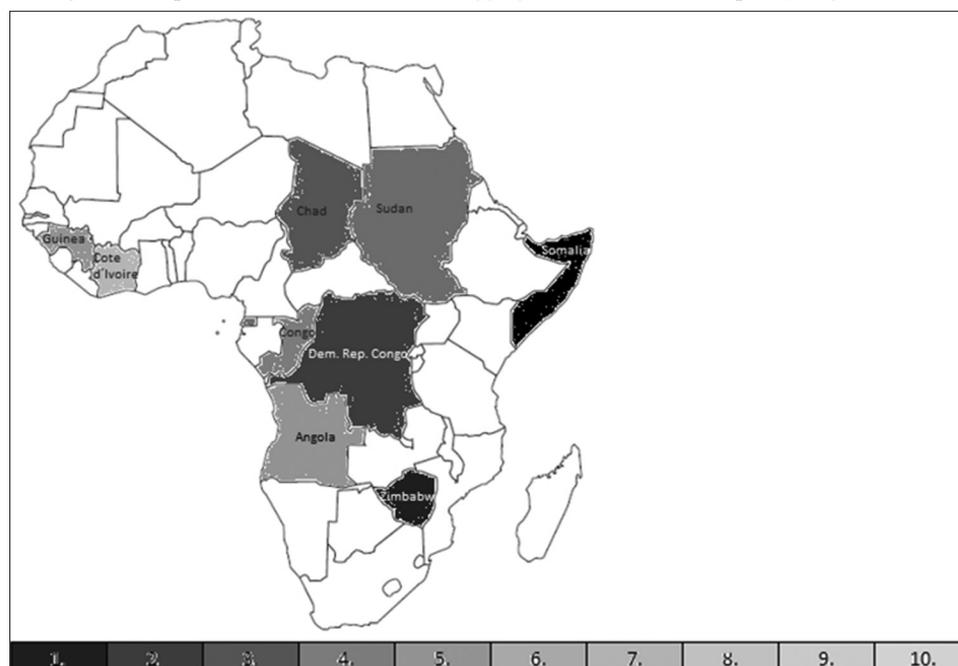
Source: Own research (2015)

Table 4: Order of the countries determined according to the aggregate indicator results

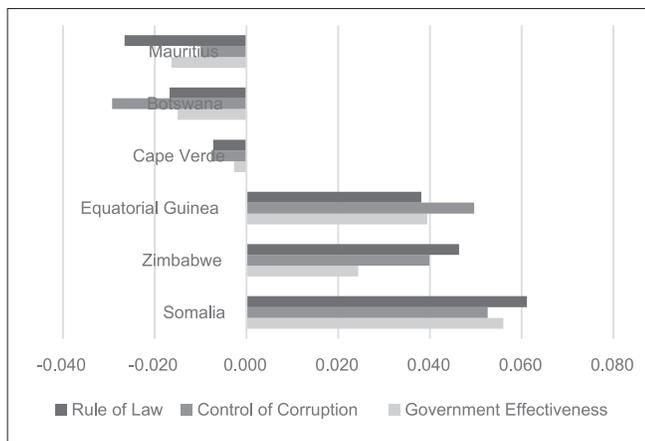
Sequence	State	2004	2005	2006	2007	2008	2009	2010
1 st	Somalia	1 st						
2 nd	Zimbabwe	6 th	5 th	4 th	5 th	2 nd	2 nd	2 nd
3 rd	Equatorial Guinea	2 nd	2 nd	3 rd	3 rd	4 th	3 rd	3 rd
4 th	Dem. Rep. Congo	4 th	3 rd	2 nd	2 nd	5 th	4 th	4 th
5 th	Chad	13 th	7 th	5 th	4 th	3 rd	5 th	5 th
...								
49 th	Seychelles	48 th	48 th	47 th	47 th	48 th	48 th	49 th
50 th	Namibia	47 th	47 th	48 th	49 th	50 th	49 th	50 th
51 th	Cape Verde	49 th	50 th	51 th				
52 th	Botswana	53 th	53 th	53 th	53 th	52 th	52 th	52 th
53 th	Mauritius	52 th	52 th	52 th	52 th	53 th	53 th	53 th

The country in the 1st place is one with the worst evaluation of the quality of governance, and vice versa, the country in the 53th place reached the best results in the quality of governance.

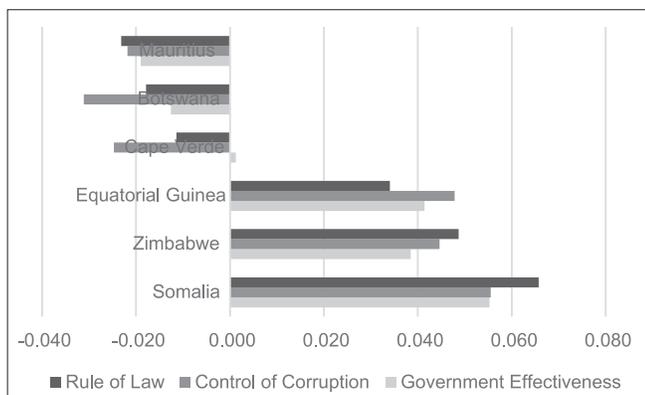
Source: Own research (2015)

Figure 1: Map of Africa with the results of aggregate indicators for the quality of governance

Source: Own research (2015)

Graph 1: Monitored indicators for aggregation in year 2004

Source: Own research (2015)

Graph 2: Monitored indicators for aggregation in 2010

Source: Own research (2015)

2008 is an extreme exception, when the coefficient of variation reached as much as 90.526%.

Based on the data and according to the calculated aggregate indicators and on the order, a map was created. The map of Africa enables overall comparison of its countries based on the calculated aggregate indicators for the quality of governance in 2010 (See Figure 1). In order to prevent incorrect conclusions, it is always necessary to complement the map by the background data (Table 4). The darkest shade of grey represents the country with the worst results in the evaluation, that is its quality of governance is insufficient/inadequate.

Graphs 1 and 2, which enable comparison of the main indicators - Rule of law, control of corruption and government effectiveness, have been created to demonstrate the development of changes in selected African countries in comparison of 2004 and 2010 (in order: Three worst and three best evaluated countries).

4. CONCLUSION

As has been mentioned earlier, the quality of governance can clearly important implications for the prosperity of nations, regions and cities. There is evidence to suggest some close similarities between the quality of governance and various indicators of

prosperity such as regional innovation, competitiveness and life expectancy (Arndt and Oman, 2006).

For comparison only, the quality of governance in African countries has reached aggregate indicator values around zero (0.021-0.057). However, when the aggregate indicator values are closely below 1, this signifies the mean level of aggregate indicators or the fact that these countries have reached well balanced results in aggregate indicators. For instance, European countries reach better results in all the selected variables (Stead, 2014).

Except for the first monitored years, Mauritius has reached the best results in the overall evaluation of the quality of governance in the monitored period. Botswana was the country that reached the best results in the first monitored years, that is between 2004 and 2006. Cape Verde, Namibia and Seychelles have also reached good results in the last monitored years. Somalia, Zimbabwe and Equatorial Guinea finished at the bottom end of the chart. These countries have reached significantly worse results in the mentioned factors. Somalia has long-term had the highest level of corruption, and it shows considerably worse results in the remaining two factors as well.

Unfortunately, the survey conducted in the period between 2004 and 2010 has shown that, based on the monitored variables, African countries are highly heterogeneous and that, throughout the monitored period, the situation in the area has not significantly improved.

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