

# Mirror, mirror on the wall, which is the best African society of them all?

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## *Abstract*

Given the broad nature of the quality of life concept and a need to focus on the well-being of whole societies as well, the Good Society Framework (GSF) provides a foundation on which to build a multidimensional index of the quality of life within and across countries. The GSF provides a frame of reference indicating the qualities of a good society, taking into account a range of monetary and non-monetary factors. Based on the GSF, this paper is the first to construct a Good Society Index (GSI) for African countries, termed the Good African Society Index (GASI). Based on data availability the GASI consists of nine main indexes: (i) economic sustainability, (ii) democracy and freedom, (iii) child well-being, (iv) environment and infrastructure, (v) safety and security, (vi) health and health systems, (vii) integrity and justice, (viii) education, and (ix) social sustainability and social cohesion. Each component is split into four sub-components for a total of 36 indicators. Tunisia ranks highest on the GASI, followed by Cape Verde and Botswana. Chad has the lowest GASI score, with Central African Republic, Cote d'Ivoire, and Democratic Republic of Congo perform only slightly better than Chad. The GASI is strongly related to the 2012 Human Development Index, and relatively weakly related to GNI per capita. At GNI per capita levels below \$2 500, there is no relationship between GNI per capita and the GASI.

*Keywords:* Good Society Index, well-being, quality of life, Africa

*JEL:* I31, O55, Z13

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## I. Introduction

Over the past few decades, many studies have examined the dimensions of individual subjective well-being and quality of life. This important strand of literature has uncovered some vital aspects that contribute positively to the well-being of people around the world (cf. Clark *et al.*, 2008; Dolan *et al.*, 2008). Recently, an interest also emerged in examining societal well-being and the overall quality of societies or countries (Holmberg, 2007; Anderson, 2011, 2012a, 2012b; Jordan, 2012; Pop *et al.*, 2013; Tay and Kuykendall, 2013). Knowledge of factors that positively affect the overall well-being of countries is important for understanding societal dimensions and how countries allow their citizens to lead normal and flourishing lives.

Within the context of societal well-being, the Good Society Framework (GSF) has been developed and provides a framework for examining the qualities that a good society has. Jordan (2012) discusses the GSF and provides some insight as to which aspects should form part of the GSF. As the GSF can be quite broad, it allows for flexibility in its application. Using the GSF as overarching foundation, previous work (Holmberg, 2007; Anderson, 2012a) developed a Good Society Index (GSI) based on a range of indicators consistent with the GSF. In this context, a society can be considered as “good” if the combination of qualities and factors it possesses improves the lives of citizens as much as possible. Given that examination of the GSI is a relatively recent area of research, it is no surprise that only three studies (Holmberg, 2007; Anderson, 2011, 2012a) have been conducted in this area, two of which (Anderson, 2011, 2012a) are extensions of the GSI for the same sample of countries rather than separate studies per se.

Ron Anderson (2011, 2012a, 2012b) has been the strongest proponent and developer of the GSI. For the 20 richest societies, Anderson (2011) constructed a GSI with 32 indicators falling into eight broad components (with four indicators per component).<sup>1</sup> Three Nordic countries (i.e. Sweden, Norway, and Denmark) topped the GSI. Somewhat surprisingly, the United States scored lowest on the overall GSI by far, and also scored lowest in most GSI sub-components, especially in the areas of *Health*, *Non-violence*, and *Integrity and Social Justice*. Important conclusions from Anderson’s (2011) research were that countries’ wealth explain very little of

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<sup>1</sup> The components are *Work and Income Equality*, *Child Well-Being*, *Safety*, *Health*, *Non-violence*, *Integrity and Social Justice*, *Democracy and Freedom*, and *Compassion* (Anderson, 2011).

the differences in quality of life across countries, and that only some countries managed to score quite highly on the GSI, suggesting that being a good society is not unchallenging.

Using the same 20 developed nations, Anderson (2012a) later expanded his original GSI to include a total of 48 indicators based on 12 main components,<sup>2</sup> with additional focus on the issues of social cohesion and factors such as social- and environmental sustainability. Anderson (2012a) found that the Nordic countries rank highest on the GSI, with Sweden and Norway ranking first and second, respectively. Even with the expanded index, the United States again ranked last on the overall GSI and in almost all of the GSI components, ranking much lower than other countries in the areas of *Child Well-Being, Safety, Healthcare, Non-violence, and Integrity and Social Justice*. France, Portugal and the UK ranked slightly higher than the US.

One important area that has not been studied sufficiently within the GSF is the African continent. Holmberg (2007) constructed a GSI with three components (life expectancy, infant mortality, and life satisfaction) for 71 countries, eight of which were African countries (i.e. Algeria, Egypt, Morocco, Nigeria, South Africa, Tanzania, Uganda, and Zimbabwe). Algeria ranked highest on the GSI among African countries, but was only ranked 55<sup>th</sup> overall, while Tanzania ranked last on the GSI, followed closely by Zimbabwe. Furthermore, more democratic countries scored higher on the GSI, as did countries with factors such as low corruption and a high GNI per capita. Two potential limitations of Holmberg's (2007) study, however, is the fact that only three indicators make up the GSI and, at least within the context of the present paper, only eight African countries were included due to data constraints.

It is well known that some of the poorest countries in the world are in Africa, in addition to many socioeconomic and political problems, and conflict, that negatively impact on the well-being of African citizens (cf. Guest, 2006; Meredith, 2006; Mills, 2011; Acemoglu and Robinson, 2012). Moreover, in constructing a multidimensional index of global suffering, (Anderson, 2012b) reports that from the ten countries with the highest levels of suffering, nine are in Africa. That said, however, some African countries do perform relatively well despite many challenges

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<sup>2</sup> Anderson's (2012a) index components are *Economic Sustainability, Child Well-Being, Safety, Health and Healthcare, Non-violence, Integrity and Justice, Civil Society, Compassion, Environmental Sustainability, Education, Social Sustainability, and Social Cohesion*.

(Michailof, 2013). These issues, in addition to a lack of research, provide a unique opportunity to apply the GSF to African countries with the aim of creating an index that would show which African countries perform well in a number of domains and which do not. Such an index could also indicate areas of priority for countries to focus on in order to become better societies.

An examination of factors that are associated with a good society are thus potentially important for understanding which factors make some African societies better off than others. Using the GSF, this paper is the first to construct a GSI for African countries, henceforth termed the Good African Society Index (GASI), to examine various dimensions of societal performance. The main purpose of this paper is thus to examine the factors that, individually and collectively, make some African countries better than others.

The remainder of this paper is structured as follows: Section 2 provides a brief background to the GSI, and explains how the GASI was constructed. This section also describes the regression methods employed. Section 3 presents the GASI results. Section 4 concludes the paper.

## **II. Constructing the Good (African) Society Index**

In this paper, the choice of indicators was informed by data availability and theoretical plausibility, while remaining consistent with the GSF and existing research (Anderson, 2011, 2012a, 2012b; Jordan, 2012). As data were not available on all indicators for all countries, the GASI was constructed for 46 African countries.<sup>3</sup>

Nine primary components were eventually decided on, namely *Economic Performance, Democracy, Freedom, and Governance, Child Well-Being, Environment and Infrastructure, Safety and Security, Health and Health Systems, Integrity and Justice, Education, and Social Cohesion and Social Sustainability*. These components each have four sub-components, for a total of 36 indicators making up the overall GASI is calculated. The nine main components, their sub-components and measurement, and sources are presented in Table 1. More details on the main components as well as their sub-components selected are:

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<sup>3</sup> Countries excluded due to data unavailability are Eritrea, Equatorial Guinea, Libya, Mauritius, Sao Tome, Seychelles, Somalia, and South Sudan.

### *A. Economic Performance*

This component refers to how stable the economy is in general, and how current conditions are likely to play out in future. Good societies have strong and robust economies, and provide equally for all citizens. The indicators are:

- *Population living below poverty line of \$2 a day*: Good societies have appropriate poverty alleviation programs and have low proportions of the population living in poverty (Anderson, 2012a). Thus, the lower the percentage of citizens living below the \$2 a day poverty line, the better the economic performance index (Sinding, 2009; Tiwari, 2009) and the higher the GASI score.
- *Real GDP per capita growth*: High levels of growth in real GDP per capita signify an improvement in overall living standards (assuming the gains are equally distributed). Countries have better economic performance where real GDP per capita growth is relatively high. The higher the real GDP per capita rate of growth, therefore, the better the society. See Pop *et al.* (2013).
- *Export diversification*: The more diversified a country's exports, the higher the GASI score is expected to be, since countries are not vulnerable to global demand shocks. Also, more diversified exports are in general positively related to economic growth (Al-Marhubi, 2000).
- *Income inequality*: In good societies, income is relatively evenly spread across the population (Anderson, 2012a). The lower the level of income inequality, the better the economic performance and the better the society. See Barro (2000) and Pop *et al.* (2013).

### *B. Democracy, Freedom and Governance*

Good societies are characterised by stable democracies, where individuals have freedom of speech and choice, and with an effective government. The indicators in this component are:

- *Democracy index*: Democratic societies allow citizens to voice their opinions and have freedom of choice, among other things. In addition, democracy may have indirect effects such as greater political stability and economic freedom (Barro, 1996; Doucouliagos and Ulubaşoğlu, 2008). The more democratic a country, the higher the sub-component score and the better a country's overall GASI score (Anderson, 2012a).

- *Freedom of the press*: In good societies, there is freedom of expression and freedom of the press (Robinson, 2002; Anderson, 2012a). Greater press freedom is positively related to the GASI.
- *Proportion of female parliamentary members*: Good societies are focused on achieving greater gender equality (Anderson, 2012a). The greater the proportion of female relative to male parliamentary members, the higher the GASI. See also Jayasuriya and Burke (2013).
- *Government effectiveness*: Good societies have effective governments that provide for the needs of their citizens. A more effective government is related to better societies.

### C. Child Well-Being

This component deals with the well-being of a country's children, and the systems put in place to enhance children's well-being. In good societies, children are well looked after, and programs are put in place to assist vulnerable children. Sufficient health systems are also put in place to ensure that children are healthy and have a high chance of survival. The indicators are:

- *Child mortality*: Good societies have low rates of child mortality (Minujin and Delamonica, 2003; Azarnert, 2006). The lower the mortality rate, the better the GASI.
- *Immunization against measles*: Coverage of treatments for immunization against various diseases is broad in good societies (Lewit and Mullahy, 1994; Frankenberg *et al.*, 2005; Anderson, 2012a). The higher the immunization rate, the higher the GASI score.
- *Teen fertility rate*: Good societies have fewer teen pregnancies (Anderson, 2012a). The lower the teen fertility rate, the better the GASI. See Arkes and Klerman (2009) and Levine *et al.* (2007).
- *Child nutrition*: In good societies, children are well cared for and have enough to eat. The fewer children that are underweight, the better the well-being of children and therefore the better country's GASI rank.

### D. Environment and Infrastructure

This section is concerned with the effect of a country on the environment, as well as the quality and degree of infrastructure. Good societies conduct business in such a way so as to ensure environmental sustainability, and also has sufficient infrastructure. The indicators are:

- *CO<sub>2</sub> emissions*: Good societies have relatively low carbon dioxide emissions. Lower emissions are related to a higher GASI score.
- *Forest area lost*: Good societies look after the environment, including their forests (Anderson, 2012a). A higher GASI is associated with a lower area of forests lost over a specified period.
- *Percentage of roads paved*: The more roads are paved as proportion of the total roads, the more comprehensive the transport infrastructure of the country (Anderson, 2012a). More roads can also alleviate poverty (Ramessur *et al.*, 2010). The more roads that are paved, the higher more effective the infrastructure and the better the society.
- *Communication networks*: Good societies have well-established networks that foster efficient communication between citizens and businesses. These can include telephone infrastructure and internet access. Better communication networks are associated with a higher GASI score. See Chavula (2013).

#### *E. Safety and Security*

In good societies, citizens are safe from personal violence, and citizens also feel safe. In addition, good societies have low murder rates and are politically stable. The indicators are:

- *Homicide rate*: Good societies have low rates of intentional murder (Anderson, 2012a). Higher (lower) rates of homicide are thus associated with worse (better) societies. See Drèze and Khera (2000) and Neumayer (2003).
- *Road fatalities*: In good societies, there are few road accidents and, more important, few fatalities from the road accidents that do occur (Anderson, 2012a). Better societies therefore have fewer road fatalities.
- *Political stability and absence of violence*: As stated, good societies have stable political systems, and low political violence. The greater the political stability and the lower the violence, the better the GASI. See Weller and Singleton (2004), Erdogdu (2008) and Milio (2008).
- *Security apparatus*: Good societies do not have severe security issues such as protests, rebel activities, and riots. The lower the frequency and intensity of such factors, the higher the GASI score.

### *F. Health and Health Systems*

This component reflects that state of health and health services in a country. Good societies have effective health systems, low mortality rates, and healthy citizens. The indicators are:

- *Life expectancy*: In good societies, people have the opportunity to live long lives. People have a higher life expectancy in better societies. See de Kervasdoué (2008).
- *Infant mortality rate*: Good societies have sufficient health care to ensure that infant mortality rates are low (Almqvist-Tangen and Axelsson, 2006; Holmberg, 2007; Anderson, 2012a, 2012b). The lower the infant mortality rate, the better the GASI.
- *Obesity levels*: High levels of obesity are detrimental to the health of citizens and places strain on a society's healthcare system. The proportion of obese individuals is lower in better societies. See Comanor *et al.* (2006) and Müller-Riemenschneider *et al.* (2008).
- *Doctors per 100 000 population*: This indicator is aimed at indicating the availability of essential health care to citizens. The greater the density of doctors, the better the society. Greater availability of health is associated with better individual health status, though this seems to hold mostly in rural areas (Robst and Graham, 1997).

### *G. Integrity and Justice*

In good societies, governments and the public system possess optimal levels of integrity and are focused on getting things done efficiently. In addition, the justice system is effective and very few citizens should be incarcerated. The indicators are:

- *Corruption*: High levels of corruption in a country suggest the lack of integrity of its public officials, and can be detrimental to economic growth and investment (Méon and Sekkat, 2005; Drury *et al.*, 2006). Good societies have very little corruption. Better societies have lower corruption.
- *Enforcement of contracts*: Being able to enforce any given contract in a relatively fast time, improves the ease of doing business, provides efficient levels of justice to the parties in a contract, and have the potential to provide transactions with high returns (Lerner and Schoar, 2005). The faster it takes to enforce a contract, the better the GASI score.
- *Prison population*: Good societies have low prison populations (Anderson, 2012a). Thus, the lower the prison population, the higher the GASI.



- *Rule of law*: Good societies manage to uphold the prevailing rule of law (Martin, 2006; Blume, 2008). The better the rule of law, the better the GASI.

#### H. Education

The education component reflects the state of the educational system in a country, which include literacy scores and the quality of education. The education indicators are:

- *Combined gross enrolment ratio in education*: Higher enrolment ratios lead to a higher GASI score.
- *Expected years of schooling*: In good societies, the structure of the education system allows people to attain high levels of education. In better societies, people can expect to attain reasonably high levels of education. More expected years of schooling are thus related to better societies. See Mamoon and Murshed (2009).
- *Youth literacy rate*: Good societies place emphasis on improving literacy levels. The higher the literacy rate, the higher the GASI score. See Raban and Ure (2000).
- *Pupil/teacher ratio*: The lower the pupil/teacher ratio, the better the GASI (Anderson, 2012a). This can be seen as a proxy for educational quality. See Rivkin *et al.* (2005) and Bosworth (2011).

#### I. Social Sustainability and Social Cohesion

This component deals with the sustainability of the social structure, as well as feelings of cohesion among citizens. The absence of such cohesion and factors negatively affecting social sustainability are potentially damaging to peace in a country. The indicators are:

- *Group grievance*: Fewer incidents of group grievance should foster greater social sustainability. Lower levels of group grievance are thus associated with better societies.
- *Human flight and brain drain*: Emigration of a large number of people possessing high levels of human capital are detrimental to the stock of human capital available in a country, and thus negatively affects the skills base. The lower the human flight and brain drain, the better the society.
- *Stock of immigrants*: Too many immigrants may cause social conflict, especially if locals believe that immigrants are taking their jobs (Banton, 1999; Morapedi, 2007; Crush and Ramachandran, 2010; Anderson, 2012a). The argument here is that great numbers of

immigrants are associated with poorer societies, based on the assumption that more immigrants make group conflict more likely.

- *Uneven economic development:* Where economic development is unequal and does not trickle down to all citizens, people may become angry at the perceived injustice. More equal economic development is associated with better societies.

To calculate the GASI, the standardised scores of each indicator are calculated for each country. For country  $i$ , defining  $y_i$  as the relevant component indicator,  $\bar{y}$  as the mean indicator score, the standardised score  $y_i^*$  is calculated as  $y_i^* = (y_i - \bar{y})/\sigma$ , where  $\sigma$  is the indicator's standard deviation. These are then re-standardised to a mean of 100 and standard deviation of 15. Thus, a GASI score of 100 implies that a country is ranked as average, while a GASI score above (below) 100 would imply an above-average (below-average) score.

Standardizing each indicator with a mean of 100 and standard deviation of 15 is done for several reasons (Anderson, 2012a): Firstly, within the current context a negative value would not have much meaning. Secondly, the transformation is similar to that of an intelligence test and is hence more easily understandable. The overall GASI is obtained by summing the mean index scores of all nine components: The higher the GASI score, the better the society. In some cases such as income inequality, index scores were reversed (by subtracting 100 from the original score) prior to summation. This is because a higher score on the GASI is better, yet high levels of income inequality, for instance, are perceived as being detrimental to a country's GASI ranking. Table 2 reports Cronbach alpha coefficients for each sub-component as well as the overall index, with the aim of determining the reliability of each item. All sub-components have alpha values exceeding 0.7, while the overall index has an alpha of 0.82, suggesting very good reliability.

### **III. The Results**

Table 3 presents the results from the sub-components and overall GASI for each country in alphabetical order, whereas Table 4 contains the overall GASI ranking, in chronological order. Tunisia scores highest in the areas of *Child Well-Being*, *Environment and Infrastructure*, *Education*, and *Social Sustainability and Social Cohesion*. Tunisia also has the highest GASI score, and is thus, at least within this sample, the “best” African society, closely followed by

Cape Verde. Tunisia's rank is due in part by its very high scores in *Child Well-Being* and *Environment and Infrastructure* relative to other countries. Botswana has the highest scores in *Safety and Security* and *Integrity and Justice*, and scoring highly all round, ranks third on the GASI. Ghana, South Africa, and Egypt<sup>4</sup> score highest on the *Economic Performance*, *Democracy, Freedom and Governance*, and *Health and Health Systems* areas, respectively. Interestingly, only Botswana and Cape Verde score above 100 in each of the sub-components, thus being the only countries able to perform above average in all areas of the GASI.

Chad is the lowest GASI-ranked country, scoring much below average in all components and worst in *Child Well-Being*.<sup>5</sup> The Central African Republic, Cote d'Ivoire and Democratic Republic of Congo perform only marginally better than Chad. Zimbabwe and the Central African Republic, for example, perform worst in *Integrity and Justice* and *Education*, respectively. Notably, seven countries score above 100 in only one sub-component, suggesting that they manage to perform better than average in only one particular area, while the Central African Republic, Chad, and Democratic Republic of Congo fail to score above 100 in any sub-component.

To examine how the GASI relates to existing indicators of well-being, the 2012 Human Development Index (HDI) and GNI per capita are also employed, the latter being based on the Atlas Method of the World Bank (2013b). Correlation coefficients between the GASI, GNI per capita and the HDI are shown in Table 5. All correlations are statistically significant at the 1% level. With a correlation coefficient of 0.812, the GASI is very strongly and positively correlated with the HDI. There is also a positive correlation between the GASI and a country's GNI per capita, although the correlation (0.641) is not as strong as with the HDI, possibly suggesting that national income is not as important a prerequisite for a good society. Not surprisingly, these

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<sup>4</sup> Although Egypt ranks fourth on the GASI by scoring very high on most sub-components, the country performs very low in the *Democracy, Freedom and Governance* indicator, ranking 40<sup>th</sup>. The latter is not necessarily surprising, especially given the political uprisings and severe violence during August 2013. Egypt's high ranking on the overall GASI may therefore be somewhat misleading, as the poor performance in the *Democracy, Freedom and Governance* component could very well offset the high scores in other components.

<sup>5</sup> If data availability permitted inclusion of all African countries, it is most likely that Somalia would have scored lowest on the GASI rather than Chad, as Somalia scored much below other countries in almost all indicators that were available for Somalia.

correlations clearly suggest that better societies are related to higher GNI per capita and a higher HDI.

The GASI is plotted against the Human Development Index in Figure 1. Countries scoring high on the GASI generally possess a higher HDI score, and the relationship is quite strong ( $R^2 = 0.659$ ). Notable exceptions are Mozambique and Congo, for instance. Although Mozambique's HDI score is only slightly higher than 0.3, the country has a relatively high GASI score. Congo, on the other hand, has a moderate HDI score, yet ranks very low on the GASI (we can also compare Swaziland to Congo, where the latter has a similar HDI score to Congo but fares much better on the GASI).

Contrary to the GASI versus HDI relationship, the association is not that strong in Figure 2, which plots the GASI against GNI per capita estimates, with the purpose of determining whether richer countries rank on average higher on the GASI. This seems to be the case, as there is a relatively strong positive relationship between the quality of societies and GNI per capita. As the fit is 41.1%, GNI per capita clearly does not explain too big a proportion of the GASI. Furthermore, most countries are very closely clustered among levels of GNI per capita below \$2 500: There seems to be virtually no relationship between GNI per capita and the GASI for countries with GNI per capita below the \$2 500 level. Thus, while countries are still poor, per capita income does very little to improve the quality of a society, and any difference in the latter cannot be ascribed to differences in countries' wealth. Beyond reaching a certain threshold, however, higher GNI per capita does seem to make societies better, possibly due to the improved services such as health care that countries can afford to provide their citizens with.

It is worth noting, however, that despite the positive relationship between GNI per capita and the GASI, some countries score relatively high on the GASI despite having a low GNI per capita level. A noteworthy example is Ghana, which has a low GNI per capita but an above-average GASI score. In addition, Tunisia and Cape Verde score highest on the GASI score, even with a relatively low GNI per capita, whereas South Africa and Gabon have the highest GNI per capita yet score significantly lower on the GASI score as compared to Tunisia and Cape Verde.

#### **IV. Conclusion**

This paper constructed a Good Society Index for 46 African countries, termed the Good African Society Index (GASI). The GASI is based on nine primary components, and with four sub-components each consists of a total of 36 indicators. Based on the overall findings, Tunisia tops the GASI and is thus the best African society, at least based on the selected indicators. Cape Verde and Botswana are ranked second and third, respectively. Chad ranks lowest on the GASI, followed by the Central African Republic. Other countries such as Cote d'Ivoire, Democratic Republic of Congo, and Guinea do not fare very well either. The GASI is relatively strongly related to the 2012 Human Development Index, with a higher HDI score in countries ranked higher on the GASI. Gross national income, however, does not explain all differences in the quality of societies. Although there is a positive relationship between country GNI per capita and the GASI score, the association is fairly weak, and many countries are good societies despite not being relatively rich. In fact, for African countries with a very low GNI per capita, there is practically no association between GNI per capita and the GASI score.

This paper does have some limitations worth mentioning. Due to the somewhat arbitrary nature of the choice of indicators, it does imply that possible alternative measures could also have been selected. It is thus likely that a selection of different indicators for a certain component could alter the final results, though the expectation is that the findings would remain broadly consistent. However, the indicators were selected with the aim of being consistent with the GSF and previous research. As such, we can have a reasonable degree of confidence in the indicators and overall results. It should be noted, however, that due to data limitations it was not possible to include all African countries in the analysis. Despite covering more than 85% of all countries, it is possible that inclusion of the excluded countries could have affected the GASI ranking results slightly.

Major concerns have also been raised about the reliability of reported statistics for African countries (Jerven, 2013). Such concerns clearly cannot be ignored, and some statistics used in constructing the GASI could to a certain degree be inaccurate or unreliable. As the data are all we currently have available for analysing the well-being of African economies, however, the likelihood of data shortfalls should be accepted. Notwithstanding likely data inaccuracies, the

overall results in this paper are not far off from what we know about the various countries and what would be expected, given past events and circumstances. For example, South Africa by far scores highest in the *Democracy, Freedom and Governance* indicator, which is not that surprising given the country's remarkable transition to democracy in 1994 and resultant emphasis on the values of democracy and various freedoms. Moreover, Zimbabwe has been plagued by accusations of especially election fraud and unjust application of the country's laws. Perhaps not surprisingly, therefore, Zimbabwe scores lowest in the *Integrity and Justice* component.

This paper shows that very few African countries manage to perform well in all aspects of the GASI. While some countries score high in some components, they also score very poorly in others. It also emerged that most countries rank only average or below average on the overall GASI and its sub-components. The lowest individual country scores are, for example, in *Child Well-Being* (Chad), *Education* (Central African Republic), and *Safety and Security* (Cote d'Ivoire), while some of the highest scores are in *Democracy, Freedom, and Governance* (South Africa), and *Environment and Infrastructure* (Tunisia). Overall, most African countries have, perhaps not surprisingly, many areas in which to improve. Intensifying the focus on those aspects a country performs below average or even average in, are likely to be beneficial to the well-being of African citizens in the long run.

## References

Acemoglu, D. and Robinson, J.A. 2012. *Why nations fail: The origins of power, prosperity and poverty*. London: Profile Books.

African Development Bank (AfDB), Organization for Economic Cooperation and Development (OECD), United Nations Development Programme (UNDP) and United Nations Economic Commission for Africa (UNECA). 2011. *African Economic Outlook 2011*. Paris: OECD.

African Development Bank (AfDB), African Union Commission (AUC) and United Nations Economic Commission for Africa (UNECA). 2013. *African Statistical Yearbook, 2013*. Tunis: African Development Bank.

African Development Bank (AfDB). 2013. *Gender, poverty and environmental indicators on African countries, 2013, Volume XIV*. Tunis: African Development Bank.

Al-Marhubi, F. 2000. Export diversification and growth: An empirical investigation. *Applied Economics Letters*, 7(9), 559–62.

- Almqvist-Tangen, G. and Axelsson, Å. 2006. Considerations of the concept of infant health: A literature review. *Early Child Development and Care*, 176(6), 575–89.
- Anderson, R.E. 2011. Good Societies Index for the 20 richest societies. Paper presented at the Conference of the International Society for Quality of Life Studies, 23 July 2009, Florence, Italy.
- Anderson, R.E. 2012a. Good Societies Index 2012: Comparing quality of life in relatively wealthy societies. Paper presented at the Conference of the International Society for Quality of Life Studies, 1–4 November 2012, Venice, Italy.
- Anderson, R.E. 2012b. Human suffering and measures of human progress. Paper presented at the International Sociological Association Forum, 1–4 August 2012, Buenos Aires, Argentina.
- Arkes, J. and Klerman, J.A. 2009. Understanding the link between the economy and teenage sexual behaviour and fertility outcomes. *Journal of Population Economics*, 22(3), 517–36.
- Azarnert, L.V. 2006. Child mortality, fertility, and human capital accumulation. *Journal of Population Economics*, 19(2), 285–97.
- Banton, M. 1999. National integration and ethnic violence in Western Europe. *Journal of Ethnic and Migration Studies*, 25(1), 5–20.
- Barro, R.J. 1996. Democracy and growth. *Journal of Economic Growth*, 1(1), 1–27.
- Barro, R.J. 2000. Inequality and growth in a panel of countries. *Journal of Economic Growth*, 5(1), 5–32.
- Blume, T. 2008. Security, justice and the rule of law in peace operations. *International Peacekeeping*, 15(5), 713–21.
- Bosworth, R. 2011. Class size, class composition, and the distribution of student achievement. *Education Economics*, doi: 10.1080/09645292.2011.568698.
- Central Intelligence Agency (CIA). 2013. *The World Factbook*. Available from: <https://www.cia.gov/library/publications/the-world-factbook/> [Accessed: 18 February 2013].
- Chavula, H.K. 2013. Telecommunications development and economic growth in Africa. *Information Technology for Development*, 19(1), 5–23.
- Clark, A.E., Frijters, P. and Shields, M.A. 2008. Relative income, happiness, and utility: An explanation for the Easterlin Paradox and other puzzles. *Journal of Economic Literature*, 46(1), 95–144.
- Comanor, W.S., Frech III, H.E. and Miller, R.D. 2006. Is the United States an outlier in health care and health outcomes? A preliminary analysis. *International Journal of Health Care Finance and Economics*, 6(1), 3–23.
- Crush, J. and Ramachandran, S. 2010. Xenophobia, international migration and development. *Journal of Human Development and Capabilities*, 11(2), 209–28.

- de Kervasdoué, J. 2008. Rating and evaluating health systems: The value of the life expectancy approach. *International Public Management Journal*, 11(3), 329–43.
- Dolan, P., Peasgood, T. and White, M. 2008. Do we really know what makes us happy? A review of the economic literature on the factors associated with subjective well-being. *Journal of Economic Psychology*, 29, 94–122.
- Doucouliağos, H. and Ulubaşođlu, M.A. 2008. Democracy and economic growth: A meta-analysis. *American Journal of Political Science*, 52(1), 61–83.
- Drèze, J. and Khera, R. 2000. Crime, gender, and society in India: Insights from homicide data. *Population and Development Review*, 26(2), 335–52.
- Drury, A.C., Krieckhaus, J. and Lusztig, M. 2006. Corruption, democracy, and economic growth. *International Political Science Review*, 27(2), 121–36.
- Economist Intelligence Unit. 2012. *Democracy Index 2012: Democracy at a standstill*. London: Economist Intelligence Unit.
- Erdogdu, O.S. 2008. Political decisions, defense and growth. *Defense and Peace Economics*, 19(1), 27–35.
- Frankenberg, E., Suriastini, W. and Thomas, D. 2005. Can Expanding Access to Basic Healthcare Improve Children's Health Status? Lessons from Indonesia's 'Midwife in the Village' Programme. *Population Studies*, 59(1), 5–19.
- Fund for Peace (FFP). 2013. *Failed States Index 2013*. Washington, D.C.: Fund for Peace.
- Guest, R. 2006. *The shackled continent: Africa's past, present and future*. London: Pan Macmillan.
- Holmberg, S. 2007. The Good Society Index. QoG Working Paper No. 6, Göteborg University.
- International Centre for Prison Studies (ICPS). 2011. *World Prison Population List, ninth edition*. London: ICPS.
- Jayasuriya, D. S. and Burke, P.J. 2013. Female parliamentarians and economic growth: Evidence from a large panel. *Applied Economics Letters*, 20(3), 304–7.
- Jerven, M. 2013. *Poor numbers: How we are misled by African development statistics and what to do about it*. Ithaca: Cornell University Press.
- Jordan, P.W. 2012. The Good Society Framework: Psychosocial ergonomics and quality of life. In M. Anderson (ed.), *Contemporary Ergonomics 2012*. London: Taylor and Francis.
- Lerner, J. And Schoar, A. 2005. Does legal enforcement affect financial transactions? The contractual channel in private equity. *Quarterly Journal of Economics*, 120(1), 223–46.
- Levine, J.A., Emery, C.R. and Pollack, H. 2007. The well-being of children born to teen mothers. *Journal of Marriage and Family*, 69(1), 105–22.



- Lewit, E.M. and Mullahy, J. 1994. Immunization of young children. *The Future of Children*, 4(1), 236–247.
- Mamoon, D. and Murshed, M. 2009. Want economic growth with good quality institutions? Spend on education. *Education Economics*, 17(4), 445–68.
- Martin, R. 2006. The rule of law in Zimbabwe. *The Round Table: The Commonwealth Journal of International Affairs*, 95(384), 239–53.
- Méon, P-G. and Sekkat, K. 2005. Does corruption grease or sand the wheels of growth? *Public Choice*, 122(1/2), 69–97.
- Meredith, M. 2006. *The state of Africa: A history of fifty years of independence*. London: The Free Press.
- Michailof, S. 2013. Africa 2050: Jobs and prosperity in a multipolar global economy – Moving out of fragility and conflict. *Global Journal of Emerging Market Economies*, 5(2), 117–49.
- Milio, S. 2008. How political stability shapes administrative performance: The Italian case. *West European Politics*, 31(5), 915–36.
- Mills, G. 2011. *Why Africa is poor and what Africans can do about it*. Johannesburg: Penguin Books.
- Minujin, A. and Delamonica, E. 2003. Mind the gap! Widening child mortality disparities. *Journal of Human Development: A Multi-Disciplinary Journal for People-Centred Development*, 4(3), 397–418.
- Morapedi, W.G. 2007. Post-liberation xenophobia in Southern Africa: The case of the influx of undocumented Zimbabwean immigrants into Botswana, c. 1995-2004. *Journal of Contemporary African Studies*, 25(2), 229–50.
- Müller-Riemenschneider, F., Reinhold, T., Berghöfer, A. and Willich, S.N. 2008. Health-economic burden of obesity in Europe. *European Journal of Epidemiology*, 23(8), 499–509.
- Neumayer, E. 2003. Good policy can lower violent crime: Evidence from a cross-national panel of homicide rates, 1980-97. *Journal of Peace Research*, 40(6), 619–40.
- Pop, I.A., van Ingen, E. and van Oorschot, W. 2013. Inequality, wealth and health: Is decreasing income inequality the key to create healthier societies? *Social Indicators Research*, 113, 1025–43.
- Raban, B. and Ure, C. 2000. Early literacy – A government concern? *Early Years: An International Research Journal*, 20(2), 47–56.
- Ramessur, S., Seetanah, B. and Rojid, S. 2010. Roads and poverty: New evidences from Africa. *Journal of Poverty*, 14(2), 166–82.
- Reporters Without Borders (RWB). 2012. *2011–2012 World Press Freedom Index*. Paris: Reporters Without Borders.

- Rivkin, S.G., Hanushek, E.A. and Kain, J.F. 2005. Teachers, schools, and academic achievement. *Econometrica*, 73(2), 417–58.
- Robinson, M. 2002. Fighting for press freedom: A battle never done. *The Round Table: The Commonwealth Journal of International Affairs*, 91(366), 493–502.
- Robst, J. and Graham, G.G. 1997. Access to health care and current health status: Do physicians matter? *Applied Economics Letters*, 4(1), 45–8.
- Sinding, S.W. 2009. Population, poverty and economic development. *Philosophical Transactions: Biological Sciences*, 364(1532), 3023–30.
- Tay, L. and Kuykendall, L. 2013. Promoting happiness: The malleability of individual and societal subjective wellbeing. *International Journal of Psychology*, doi: 10.1080/00207594.2013.779379.
- Tiwari, M. 2009. Poverty and wellbeing at the ‘grassroots’ – How much is visible to researchers? *Social Indicators Research*, 90(1), 127–40.
- Transparency International. 2012. *2012 Corruption Perceptions Index*. Berlin: Transparency International.
- United Nations Development Programme (UNDP). 2007. *Human Development Report 2007/2008*. New York: Oxford University Press.
- United Nations Development Programme (UNDP). 2009. *Human Development Report 2009*. New York: Oxford University Press.
- United Nations Development Programme (UNDP). 2010. *Human Development Report 2010*. New York: Oxford University Press.
- United Nations Development Programme (UNDP). 2011. *Human Development Report 2011*. New York: Oxford University Press.
- United Nations Development Programme (UNDP). 2013. *Human Development Report 2013*. New York: Oxford University Press.
- United Nations Economic Commission for Africa (UNECA). 2013. *Economic Report on Africa 2013: Making the most of Africa’s commodities: Industrializing for growth, jobs and economic transformation*. Addis Ababa: UNECA.
- Weller, C.E. and Singleton, L. 2004. Political freedom, external liberalization and financial stability. *International Review of Applied Economics*, 18(1), 43–61.
- World Bank. 2013a. *Africa Development Indicators 2012/13*. Washington, D.C.: World Bank.
- World Bank. 2013b. *World Development Indicators 2013*. Washington, D.C.: World Bank.
- World Health Organization (WHO). 2013. WHO Global Infobase. Available from: <https://apps.who.int/infobase/> [Accessed: 20 February 2013].

World Life Expectancy. 2012. Road traffic accidents, by country. Available from: <http://www.worldlifeexpectancy.com/cause-of-death/road-traffic-accidents/by-country/> [Accessed: 12 December 2012].

**Table 1: Good African Society Index components, measures, and sources**

<b>GASI component</b>	<b>Measure</b>	<b>Source</b>
<b>Economic Performance and Sustainability</b>		
Percentage of population below \$2 a day*	Percentage of population below \$2 a day	UNDP (2007), World Bank (2013b)
Real GDP per capita growth	Real GDP per capita growth, 2010 – 2011 (in 2000 \$)	World Bank (2013b)
Export diversification	Ranges from 0 (low diversification) to 1 (high diversification)	World Bank (2013b)
Income inequality*	Measures the degree of income equality via the Gini Index, which ranges from 0 (perfect equality) to 1 (perfect inequality)	UNDP (2013)
<b>Democracy, Freedom and Governance</b>		
Democracy index	Democracy Index, 2011, scale: 0 (no democracy) – 10 (full democracy)	Economist Intelligence Unit (2012)
Freedom of the press*	2011 – 2012 World Press Freedom Index. A higher score denotes less press freedom.	RWB (2012)
Female members of parliament	Percentage of parliamentary members that are female	UNDP (2013)
Government effectiveness	Index measuring the quality of public services, the quality and degree of independence from political pressures of the civil service, the quality of policy formulation and implementation, and the credibility of government commitment to such policies. Ranges from –2.5 (weak performance) to 2.5 (very high performance)	World Bank (2013a)
<b>Child Well-Being</b>		
Child mortality*	Probability per 1 000 that a newborn baby will die before reaching age five, if subject to current age-specific mortality rates.	World Bank (2013a)
Child immunization against measles	Child immunization rate against measles (% of children ages 12–23 months)	World Bank (2013a)
Teen fertility rate*	Teen (age 15–19) fertility rate per 1 000 women	UNDP (2013)
Child nutrition*	Percentage of children < 5 that are underweight	WHO AfDB (2013)
<b>Environment and Infrastructure</b>		
Carbon dioxide emissions*	CO <sub>2</sub> emissions per capita	AfDB, OECD, UNDP and UNECA (2011)
Forest area lost*	Percentage change in forest area, 1990-2010	UNDP (2013)
Paved roads	% of paved roads relative to total roads	AfDB, AUC and UNECA (2013)
Communication networks: Main line and mobile telephone subscribers	Main line and mobile telephone subscribers, per 100 people	World Bank (2013a)
<b>Safety and Security</b>		
Homicide rate*	Intentional homicides per 100 000 population	UNDP (2013)
Road fatalities*	Road traffic deaths per 100 000 population	World Life Expectancy (2012)
Political stability and absence of violence	Perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including domestic violence and terrorism. Ranges from -2.5 (weak performance) to 2.5 (very high performance)	World Bank (2013a)
Security apparatus*	Relates to the prevalence of security issues such as internal conflict, riots, protests, military coups, rebel activity, and bombings.	FFP (2013)

<b>Health and Health Systems</b>		
Life expectancy	Life expectancy at birth, in years	UNDP (2013)
Infant mortality rate*	Infant mortality rate per 1 000 births	AfDB, OECD, UNDP and UNECA (2011)
Obesity levels*	Prevalence of population (age 15+) that is obese, i.e. BMI > 30	WHO (2013)
Doctors per 100 000 population	Number of doctors per 100 000 persons	AfDB, OECD, UNDP and UNECA (2011)
<b>Integrity and Justice</b>		
Corruption	2012 Corruption Perception Index, measuring the perceived levels of public sector corruption. The index ranges from 0 (highly corrupt) to 100 (very clean)	Transparency International (2012)
Enforcing contracts*	Number of days from the filing of a lawsuit in court until the final determination and, where appropriate, payment.	World Bank (2013a)
Low prison populations*	World prison population list, per 100 000 persons	ICPS (2011)
Rule of law	Extent to which agents have confidence in and abide by the rules of society, in particular the quality of contract enforcement, police, and the courts, as well as the likelihood of crime and violence. Ranges from -2.5 (weak performance) to 2.5 (very high performance)	World Bank (2013a)
<b>Education</b>		
Combined gross enrolment ratio in education	Number of students enrolled in primary, secondary and tertiary education, regardless of age, expressed as a percentage of the population of theoretical school age for the three levels	UNDP (2009)
Expected years of schooling	Number of years of schooling that a child of school entrance age can expect to receive if prevailing patterns of age-specific enrolment rates persist throughout the child's life	UNDP (2013)
Youth literacy rate	People aged 15–24 who can read and write	CIA (2013)
Pupil/teacher ratio*	Number of primary school pupils per teacher	AfDB, OECD, UNDP and UNECA (2011)
<b>Social Sustainability and Social Cohesion</b>		
Group grievance*	Indicator of tension and violence among particular groups. The indicator includes factors such as discrimination, powerlessness, ethnic violence, communal violence, sectarian violence, and religious violence	FFP (2013)
Human flight and brain drain*	Indicator related to migration and human capital flight given lack of sufficient opportunities. The indicator is related to factors such as migration per capita, human capital, emigration of educated population	FFP (2013)
Stock of immigrants*	Stock of immigrants, as % of population	UNDP (2013)
Uneven economic development*	Related to uneven commitments by government to the social contract within the context of ethnic, religious, or regional disparities. The indicator includes issues such as income inequality, urban-rural service distribution, access to improved services, and slum population	FFP (2013)

*Note:* \* indicates that index is reversed.

**Table 2: Cronbach  $\alpha$  coefficients**

<b>Item</b>	<b>Cronbach <math>\alpha</math></b>
Economic performance and sustainability	0.84
Democracy, Freedom and governance	0.82
Child well-being	0.78
Environment and infrastructure	0.80
Safety and security	0.79
Health and health systems	0.80
Integrity and justice	0.81
Education	0.79
Social sustainability and social cohesion	0.79
Good African Society Index	0.82

**Table 3: GASI components and overall GASI scores**

	Economic Performance	Democracy, Freedom and Governance	Child Well-Being	Environment and Infrastructure	Safety and security	Health and health systems	Integrity and justice	Education	Social sustainability and social cohesion	Good African Society Index	Rank
Algeria	110.05	92.22	119.45	108.06	92.01	114.79	98.49	114.65	106.89	106.29	6
Angola	101.92	100.41	90.70	97.17	106.53	90.69	99.79	103.73	97.65	98.73	25
Benin	97.84	102.70	96.09	100.89	106.81	96.18	104.91	93.28	109.90	100.96	15
Botswana	100.69	115.51	114.99	109.98	<b>115.86</b>	100.42	<b>112.79</b>	113.81	107.39	110.16	3
Burkina Faso	100.60	99.31	89.60	95.24	101.17	98.88	103.65	80.25	97.86	96.28	36
Burundi	101.73	99.98	97.90	<b>90.54</b>	88.92	94.18	95.28	98.51	100.74	96.42	35
Cameroon	105.89	96.19	89.75	95.52	95.18	92.19	97.53	101.63	96.90	96.75	34
Cape Verde	104.34	119.32	111.57	119.65	106.75	114.33	108.05	114.68	102.83	111.28	2
Central African Republic	86.59	89.56	92.61	96.16	84.64	92.99	97.21	<b>75.39</b>	92.95	89.79	45
Chad	93.39	87.60	<b>74.25</b>	94.54	93.32	89.50	94.82	81.45	85.65	88.28	<b>46</b>
Comoros	90.31	89.67	98.08	94.05	100.77	104.69	97.07	102.59	106.65	98.21	27
Congo	101.90	91.61	93.52	99.97	96.34	99.65	96.41	99.60	99.88	97.65	30
Cote d'Ivoire	91.84	84.50	90.47	101.81	<b>76.83</b>	97.77	98.96	88.93	85.00	90.68	44
Democratic Republic of Congo	96.59	<b>81.71</b>	89.34	94.96	86.09	91.61	91.85	97.50	90.29	91.10	43
Djibouti	103.93	87.10	100.28	96.62	110.51	99.36	111.64	88.94	98.21	99.62	19
Egypt	104.97	87.72	117.57	119.48	109.18	<b>115.27</b>	110.15	112.76	104.97	109.12	4
Ethiopia	107.57	100.39	99.48	93.01	91.88	101.29	99.54	88.63	98.11	97.77	28
Gabon	114.31	97.49	101.44	103.19	104.56	103.14	105.45	116.33	97.84	104.86	8
Gambia	87.28	90.31	105.83	107.13	111.12	100.20	101.16	94.76	95.63	99.27	22
Ghana	<b>114.64</b>	109.08	107.96	95.79	108.85	102.25	106.94	105.43	101.73	105.85	7
Guinea	100.61	94.13	86.81	99.65	88.93	95.22	89.18	91.67	91.53	93.08	42
Guinea-Bissau	111.43	91.09	93.89	100.93	94.51	90.91	103.03	87.98	97.11	96.76	33
Kenya	93.25	99.11	100.53	99.63	95.97	102.47	92.87	105.87	89.54	97.69	29
Lesotho	98.38	110.83	106.04	101.47	100.29	88.60	108.14	107.60	109.56	103.43	11
Liberia	102.36	96.65	94.35	94.76	103.39	93.69	112.23	104.31	98.28	100.00	17
Madagascar	<b>85.11</b>	98.75	89.25	98.42	102.31	106.57	103.69	100.71	108.91	99.30	21
Malawi	98.58	101.20	104.00	96.18	97.94	97.75	100.58	92.72	96.63	98.40	26
Mali	103.07	106.47	81.47	99.47	102.27	92.13	103.68	84.94	99.05	96.95	32
Mauritania	104.32	100.86	96.64	101.77	98.62	94.52	96.76	94.65	106.66	99.42	20
Morocco	105.75	95.06	121.19	109.86	105.40	111.22	101.32	103.60	104.51	106.43	5
Mozambique	101.34	113.04	95.88	95.60	109.34	95.25	102.75	92.02	101.23	100.72	16
Namibia	91.41	117.64	106.58	96.65	108.61	109.62	102.81	112.18	96.09	104.62	10
Niger	97.37	102.15	79.17	92.26	103.16	97.03	101.39	79.05	99.29	94.54	40
Nigeria	104.39	89.44	84.33	100.31	91.15	93.76	95.05	96.29	87.21	93.55	41
Rwanda	96.78	105.56	112.83	104.46	105.43	96.48	86.08	95.88	94.37	99.76	18
Senegal	97.88	109.92	101.82	100.14	105.98	100.66	107.03	90.13	104.74	102.03	13
Sierra Leone	97.95	97.92	88.62	94.81	104.11	<b>87.95</b>	98.12	87.27	94.58	94.59	39
South Africa	92.14	<b>126.98</b>	106.97	92.89	102.10	97.31	100.70	116.22	107.82	104.79	9
Sudan	112.55	85.05	98.90	102.91	85.10	103.42	94.63	88.54	<b>84.94</b>	95.12	38
Swaziland	91.86	94.68	108.64	106.68	102.74	94.17	103.34	107.51	107.57	101.91	14
Tanzania	96.20	115.17	102.13	96.05	104.91	101.62	100.38	97.77	108.38	102.51	12
Togo	102.45	92.54	101.72	92.53	100.98	99.38	98.80	100.25	103.65	99.14	23
Tunisia	99.11	107.98	<b>122.95</b>	<b>120.32</b>	109.44	114.80	100.71	<b>118.48</b>	<b>112.11</b>	111.77	<b>1</b>
Uganda	97.03	105.08	95.58	94.07	85.37	99.76	98.91	100.20	97.38	97.04	31
Zambia	97.79	103.79	99.35	97.90	98.66	94.97	99.70	98.79	98.39	98.82	24
Zimbabwe	97.51	97.54	107.56	93.44	90.53	97.72	<b>85.12</b>	105.77	86.06	95.69	37

**Table 4: Chronological GASI ranking**

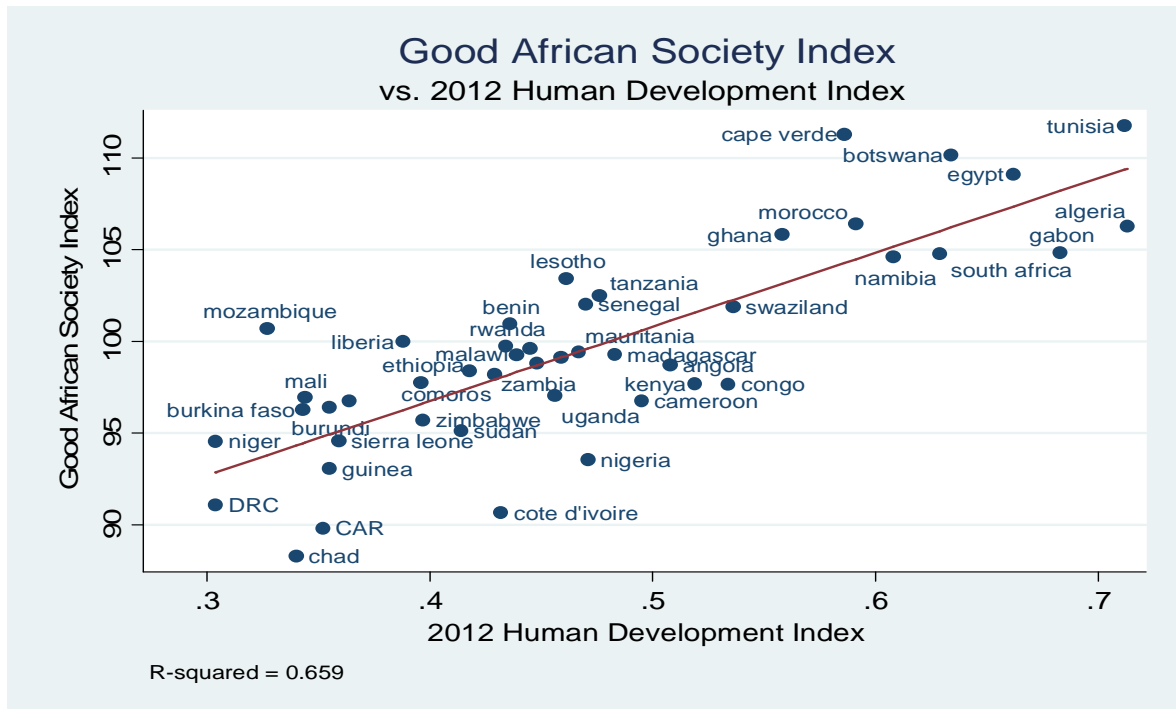
Rank	Country	Rank	Country	Rank	Country	Rank	Country
1	Tunisia	13	Senegal	25	Angola	37	Zimbabwe
2	Cape Verde	14	Swaziland	26	Malawi	38	Sudan
3	Botswana	15	Benin	27	Comoros	39	Sierra Leone
4	Egypt	16	Mozambique	28	Ethiopia	40	Niger
5	Morocco	17	Liberia	29	Kenya	41	Nigeria
6	Algeria	18	Rwanda	30	Congo	42	Guinea
7	Ghana	19	Djibouti	31	Uganda	43	Democratic Republic of Congo
8	Gabon	20	Mauritania	32	Mali	44	Cote d'Ivoire
9	South Africa	21	Madagascar	33	Guinea-Bissau	45	Central African Republic
10	Namibia	22	Gambia	34	Cameroon	46	Chad
11	Lesotho	23	Togo	35	Burundi		
12	Tanzania	24	Zambia	36	Burkina Faso		

**Table 5: Correlation coefficients**

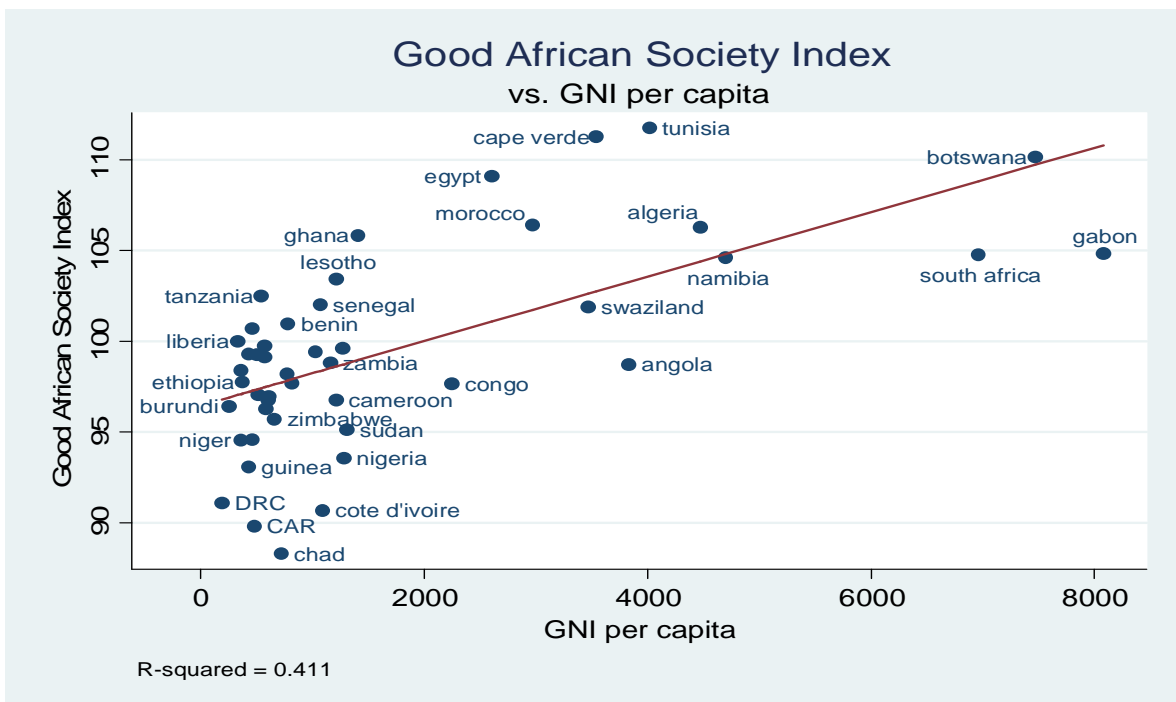
	GASI	GNI per capita	HDI
GASI	1.000		
GNI per capita	0.641***	1.000	
HDI	0.812***	0.851***	1.000

Note:  $p < 0.001$  \*\*\*





**Figure 1: Relationship between GASI and 2012 HDI**



**Figure 2: Relationship between GASI and GNI per capita**