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## Indices of social development and their application to Africa

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WIDER Working Paper 2014/132

## **Indices of social development and their application to Africa**

Arjan de Haan<sup>1</sup> and Roberto Foa<sup>2</sup>

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**Abstract:** This paper, using a new set of social development indices, explores the measurement of social development across Africa, and how this relates to broader development patterns and measurement. Development practitioners worldwide increasingly recognize the importance of informal institutions, such as trust, associations and inclusion, and their impact on well-being, poverty, growth or aid effectiveness. However, there has been little empirical analysis that tests these relationships, largely because of data limitations. The Indices of Social Development, hosted by the International Institute of Social Studies is a large and innovative database of social development indicators to overcome such data constraints. They are based on over 200 measures from 25 data sources for the years 1990 to 2010, aggregated into six composite indices: civic activism, inter-personal safety and trust, inter-group cohesion, clubs and associations, gender equality, and inclusion of minorities. This paper presents how the database can be used to compare the Africa region to global patterns, analyse divergence across the continent, and explore the implications for our understanding of inclusive growth in Africa.

**Keywords:** measurement, social development, well-being, indicators

**JEL classification:** E01, I32

Figures and tables appear at the end of the document.

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## 1 Introduction

Development practitioners worldwide increasingly recognize the importance of informal institutions—norms of co-operation, non-discrimination, or community oversight in the management of investment activities—in affecting development outcomes such as poverty alleviation, well-being, and the delivery of public goods. These questions have arisen as the debates on poverty and growth have broadened beyond earlier uni-dimensional measures, inequality has returned to discussions on growth and poverty, and have been underlined in recent conceptualizations of ‘inclusive growth’, which focuses on the links between growth and various dimensions of equity (de Haan and Thorat 2013).

However, there has been little cross-country empirical analysis to test the relationship between informal institutions, such as trust, associations, inclusion, and development outcomes, comparable to the substantial econometric literature on formal institutions (or governance) and growth (Knack and Keefer 1997; Mauro 1995; Rodrik et al. 2004). This is largely due to data limitations: few reliable, globally representative data sources exist that can provide a basis for cross-country comparison of social norms and practice, social trust, and community engagement.

The International Institute of Social Studies (ISS) now hosts a large database of social development indicators compiled from a wide range of sources in a first attempt to overcome such data constraints.<sup>1</sup> The Indices of Social Development are based on over 200 measures from 25 reputable data sources for the years 1990 to 2010, and these measures are aggregated into six composite indices: civic activism, inter-personal safety and trust, inter-group cohesion, clubs and associations, gender equality, and inclusion of minorities. Not all data sources provide observations for indicators in each country, but through a method of aggregation called matching percentiles, the data sources produce comprehensive estimates of social behaviour and norms of interaction across a broad range of societies, and increasingly with possibilities to track changes over time. The data have now been used to describe global trends (Huang 2011),<sup>2</sup> and links with aid effectiveness (Foa 2012).

This paper presents this new database, highlighting the differences, similarities, and complementarities with other measures of well-being, including those around income poverty, multidimensional poverty, and human development (discussed in sections 2 and 3). Against emerging analyses that chart those linkages at the global level, this paper explores whether Africa as a region diverges from global patterns, divergence across the continent, and the implications of these for our understanding of inclusive growth in Africa. We believe this is particularly important for Africa, where data on various aspects of development have been limited, and contested, while the development literature and practice tend to make strong claims on how aspects of social development and informal institutions, and growth relate. The paper concludes with a discussion on the need for further investments in social development data, both in Africa and at the global level.

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<sup>1</sup> See [www.indsocdev.org](http://www.indsocdev.org). The first author of this paper directed the project at ISS that made these data publicly available; the second author was designer and initiator of the project at the Social Development Department of the World Bank.

<sup>2</sup> See Huang (2011) for an analysis of the causal relations between ISDs and with GDP.

## 2 Evolving measures of well-being

Global level comparisons of wealth and well-being have existed for a number of decades.<sup>3</sup> Gross domestic product (GDP) data have been produced for at least 60 years, and steadily refined through improvements in aggregation methodology and estimates of purchasing-power parity. Internationally-comparable income/consumption poverty data have become available since the late 1970s. They continue to be heavily debated on international comparability and—like GDP—its uni-dimensionality, but certainly investments in household surveys in Africa during the 1990s rapidly increased insight into levels of well-being in most countries on the continent.

Critique of poverty analysis contributed to the development of alternative or complementary measures of well-being and deprivation, highlighted in the Millennium Development Goals (MDG) framework.<sup>4</sup> The UNDP's Human Development Index (HDI) is composed of (non-weighted) measures of health, education, and income, following examples of Physical Quality of Life Index, and a Basic Needs Approach. The HDI has undergone little change, but has been enriched with other measures, including those on inequality. Stimulated by the MDG emphasis, also much effort went into measuring human development indicators of health and education in the poorest countries, including in Africa. The arsenal of multidimensional measures in the international development debate has been enriched by the work of the Oxford Poverty and Human Development Initiative (Alkire and Santos 2010),<sup>5</sup> and with analysis of happiness, promoted in particular through the Bhutan Gross Happiness Index.<sup>6</sup>

Alongside the broadening of the measures of well-being, debates on inequalities and inclusiveness have come and gone in waves.<sup>7</sup> Inequality was brought back on the agenda in the late 1990s, after a relative absence since the classic development theories. Debates on inclusiveness gained strength, including in the emerging economies of Brazil, China and India (de Haan and Thorat 2013), and again gained force after the global financial crisis of 2007-08, the political crises in the Middle East and North Africa, and as part of the discussions on a 'post-2015' agenda.

Different sets of international measures developed over the last two decades relate to institutions, following the change in emphasis in analysis promoted, in particular, by Douglass North (1990). Starting in 1996, the Worldwide Governance Indicators project has brought together measures of governance for 200 countries, along the dimensions of voice and accountability, political stability, government effectiveness, quality of regulation, rule of law, and corruption; data reflect subjective assessments of survey respondents and experts.<sup>8</sup> Other projects in this category include the

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<sup>3</sup>The following builds on van Staveren et al. (2013).

<sup>4</sup>Ravallion (2010) expresses concern about what he labels mashup indices, composite indicators for which the design has been insufficiently argued or explained (GDP and poverty indicators, according to him, are also composites, under-built by evolving theory and practice). The four questions that he poses are relevant for any discussion: conceptual clarity regarding what is being measured, trade-offs embedded in any (weights in) index, the need for robustness tests (of rankings), and to have a critical perspective on policy relevance.

<sup>5</sup> This covers over 100 developing countries, and three-quarters of the world's population, focusing on multidimensional poverty (ten indicators) as derived from household surveys. These measures have been commonly used in international comparisons (rankings), and are commonly correlated with levels of GDP.

<sup>6</sup>An excellent description of the Gross Happiness Index and its history and politics in Bhutan can be found in Kent Schroeder's PhD thesis (2014) 'The Politics of Gross Happiness'.

<sup>7</sup>Recent progress on inequality measurement includes a focus on inequality of opportunity (e.g., Brunori et al. 2013).

<sup>8</sup>[www.govindicators.org](http://www.govindicators.org).

Corruption Perceptions Index<sup>9</sup> and the Ibrahim Index of African Governance.<sup>10</sup> As human development measures, governance measures are often correlated with GDP measures, though perhaps more often with the questions of governance as a precondition or causal factor of development.<sup>11</sup> The recent work by Acemoglu and others is giving stronger voice to the importance of governance: ‘while economic institutions are critical for determining whether a country is poor or prosperous, it is politics and political institutions that determine what economic institutions a country has’ (Acemoglu and Robinson 2013: 43).

### 3 Social development

Since the 1990s there has been growing emphasis on ‘social development’ in the international development literature,<sup>12</sup> and—as with concerns on inequality—this receives perennial impetus at times of social crisis (as during the Arab Spring, or Asia financial crisis).<sup>13</sup> In its narrowest sense, social development has focused on the need to avoid the *unintended consequences* of development projects. This has been most notable in the form of social safeguards (regarding displacement, minorities) which has been an important strand of work in the World Bank, often under pressure of civil society. Such a *residual* interpretation of the importance of social development, focusing on side effects rather than constituent parts, has been represented more broadly in the international development debate, for example, in definitions of social policy, and of social fund programming.

Further, organizations like UK’s Department for International Development (DFID) have focused on ‘mainstreaming’ social development, often building on and containing efforts to mainstream *gender*. This implies the need to assess and strengthen social development as part of, and instrumental in, broad development efforts, manifested, for example, in the practice of social assessments as part of project preparation.<sup>14</sup>

Social development has emphasized a different take on development *outcomes* (extending the debates on ‘human development’) in stressing, for example, the importance of empowerment, social cohesion, participation, equity (gender in particular), etc. as intrinsic values. There has been significant increase in the funding and programming in areas of community-based development, which in most cases have remained localized, thus not allowing for measures at macro-levels.

Scholars and practitioners in the social development discipline have traditionally felt strong—and justified—concern about measurements and indicators. In fact, much of the critique of the measurement of poverty emanated from the social development discipline—inhabited by anthropologists mostly, with a fair amount of aversion to quantitative analysis (at least compared to the quantitative-minded political scientists)—which focused on and built a body of knowledge

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<sup>9</sup> [www.transparencia.pt/imprensa/files/2010/10/CPI2010\\_methodology\\_brief.pdf](http://www.transparencia.pt/imprensa/files/2010/10/CPI2010_methodology_brief.pdf).

<sup>10</sup> [www.moibrahimfoundation.org/interact/](http://www.moibrahimfoundation.org/interact/). The Doing Business Project and the Global Entrepreneurship Monitor may be relevant in this context as they (may) provide business views on governance issues.

<sup>11</sup> See [www.africaplus.wordpress.com/2013/07/03/governance-and-economic-growth-in-africa-rethinking-the-conventional-paradigm/](http://www.africaplus.wordpress.com/2013/07/03/governance-and-economic-growth-in-africa-rethinking-the-conventional-paradigm/) for a critique.

<sup>12</sup> For a description of its evolution within the World Bank, see Davis (2004) and Bebbington et al. (2006) with respect to the notion of social capital. The World Bank (1995) has published its Social Indicator of Development while UNRISD is considering to develop its database.

<sup>13</sup> For example, the World Bank’s emphasis on community development in Indonesia was intensified after the financial crisis.

<sup>14</sup> See, for example, a discussion and material on mainstreaming in transport investments at [www.worldbank.org/M5RZXHZON0](http://www.worldbank.org/M5RZXHZON0).

around participatory poverty assessments. The integration of participatory poverty assessments within the broader field of poverty analysis has helped to narrow the gap between disciplines.

Two areas of research and practice helped to move the social development field into a direction of more (quantitative) measurement of what social development is and how it contributes to development more widely. First, gender equality has been the subject of measurement for a fair amount of time now, and analysis has shown that correlations can be established, for example, between gender equity and productivity, and between gender equity and MDGs.<sup>15</sup> A range of gender measures now exist, including the Gender-related Development Index, the Gender Empowerment Measure (both by UNDP), the WEF's Gender Gap Index, etc. van Staveren (2011) compares five measures of gender equality, showing a degree of overlap but country rankings vary significantly depending on the measure used (which she relates to different aspects of human development and capabilities).

Second, the notion of social capital helped to move the social discipline most forcefully into the debates on quantitative assessments. Narayan and Pritchett's (1997) work on social capital in Tanzania suggests that the density of people's networks have a direct and causal impact on poverty. The concept of social capital experienced a rapid rise within the development debate,<sup>16</sup> and became widely criticized,<sup>17</sup> at a time when social development was rapidly becoming more important within the World Bank (2000) and elsewhere (illustrated, for example, by the importance given to participatory poverty assessment in the 2000/1 *World Development Report*).<sup>18</sup>

The publication by Easterly et al. (2006) was perhaps the first in the international development literature that analysed *social cohesion* at global levels, using sources such as the World Values Survey.<sup>19</sup> They find that social cohesion is important, demonstrating an influence on countries' institutional quality, which in turn influences economic growth.

While social development practitioners have, in general, put great emphasis on inequalities, in particular the emphasis on community development—and to some extent on participation—has tended to focus on the different dimensions of well-being, rather than its distribution. For the ISD (Indices of Social Development) database, two aspects of social development have been central: the 'soft' dimensions of development, often invisible and relatively difficult to measure, such as social capital, discrimination and exclusion; and the institutions of societies through which development is enhanced, both formal (created by states and other entities such as laws, regulations, rules) and informal social norms that structure behaviour and interaction (norms, attitudes, beliefs, rules of thumb).

The ISD, as with all measures and indicators, will continue to be contested. Indices and comparisons across countries, particularly of complex phenomena like norms and beliefs, will always be problematic. Yet we believe that the measurement of social development, as captured in

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<sup>15</sup> Blackden and Bhanu (1999); see Abu-Ghaida and Klasen (2004) on MDGs.

<sup>16</sup> Woolcock and Narayan (2000); Narayan and Cassidy (2001).

<sup>17</sup> The use of the terminology 'capital' and ability to define this as individual characteristic were probably amongst the reasons this found currency in the debate, while a notion of social exclusion, for example, did not obtain such popularity.

<sup>18</sup> In 1997, Knack and Keefer (1997) were amongst the first to show the impact of trust and economic growth. This interest within development studies built on work in OECD countries, notably by Coleman (1990) and Putnam (1993).

<sup>19</sup> Inglehart and Welzel (2005) describe how values have been changing globally; Norris (1998) focuses on citizen attitudes to political institutions; see [www.worldvaluessurvey.org/index.html](http://www.worldvaluessurvey.org/index.html).

the ISD, is an important contribution to development debates, including, as we describe next, in Africa where much of the writings have suggested important links between social development factors and broader development trends.

#### 4 Why are indices of social development relevant for Africa?

The measurement of various aspects of development in Africa has progressed significantly over the last three decades, notwithstanding significant empirical limitations which are perhaps more acute in Africa than in other developing regions, and contestation.<sup>20</sup> As elsewhere, the knowledge on measurement of economic growth and human development,<sup>21</sup> is further advanced than that of social development as understood in this paper, though the Afrobarometer in particular is making major advances in this area. Yet there is much writing that suggests that social and sociopolitical conditions limit growth and development more broadly; because of these claims on how aspects of social development and growth relate, we believe that further inputs into measurement are important particularly in Africa.

Conflict has been described as a reason for, and the consequence of, the lack of broader development,<sup>22</sup> and the economic growth spurt of the 2000s has been partly ascribed to the decline in conflict across the continent. The conflicts, of various origins, are often defined as inter-ethnic (as in Rwanda), linguistic (Nigeria) or racial (South Africa). For example, Alesina and La Ferrara (2004) argue that higher levels of ethnic, religious, and linguistic fractionalization in postcolonial Africa may have led to greater difficulty in achieving political consensus and led to systematic problems of governance and public goods delivery. These social categories overlap with access to economic and political opportunities, are historically determined and can be politically reinforced.<sup>23</sup> Moreover, in recent publications, like the African Development Bank's fragile states report (2014: 13), there appears to be more emphasis that 'tribal and ethnic divisions are being replaced—or added to—by class divisions'.

Kinship has been considered important for economic activity, including in the informal sector that dominates in most African countries. Unlike 'human capital', and despite strong evidence on the role of networks in most forms of business, kinship and its associated obligations and potential exclusion have not been considered to be necessarily good for expansion of economic activity (or institutional quality). For example, Grimm et al. (2011) highlight how the redistributive pressure inherent in family and kinship networks can lead to adverse incentive effects for small entrepreneurs.<sup>24</sup>

Further, it has been common to ascribe poor development to a lack of development of formal and accountable institutions, informal institutions as anti-developmental and pre-modern, with an

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<sup>20</sup> Jerven (2014), in a special issue of the *Canadian Journal of Development Studies* discusses a range of issues with respect to measuring development in Africa, building on Devarajan's (2013) warning about the continent's 'statistical tragedy'.

<sup>21</sup> See, for example, the recent report on economic and social conditions by UNECA and the African Union (2013), where social development is defined as indicators of poverty, inequality, education, health, including gender disaggregated.

<sup>22</sup> Easterly and Levine (1997); Bates (2001); Collier and Hoeffler (2004).

<sup>23</sup> See Kanbur et al. (2009) for an overview, emphasizing that ethnic identity (and thus categorization and measurement) need to be understood in broad historical and sociopolitical development.

<sup>24</sup> Nunn and Wantchekon (2013) focus on levels of trust across Africa, using the Afrobarometer, and suggest that the slave trade that ended over a century ago still has an impact on the extent of mistrust among members of different ethnic groups.



assumed dualism between formal and informal institutions (or sectors, as in the case of labour market analysis). Research like that by the African Politics and Power Programme (Booth 2012) challenges assumptions of dualism, and highlights the dominance of ‘hybrid’ systems.<sup>25</sup> The literature on governance, which appears to have had a big impact in Africa in particular, has had a strong emphasis on the need to put in place (formal) systems of governance first. Instead, research, including that on rapidly growing economies, has contradicted the ‘governance-first’ principles, and highlighted instead the interaction between the way institutions evolve historically and development more generally (Khan 2012).

Moreover, while there is an assumption of the static nature of Africa’s institutions, it is likely that these have undergone significant changes, including as a result of the dramatic changes in the external environment over the last half century. Independence brought intensive efforts towards modernization. Structural adjustment brought these to a halt, and a period of stagnation and dismantling of state-led economic institutions was followed—in many countries, and in diverse forms—by a period of economic growth, opening up, governance reforms, and significant increases in the levels of education, for example. Finally, demographic transitions, urbanization and migration are rapidly changing social structures.<sup>26</sup>

While there has been much emphasis on ethnic (inter-group) conflict, questions of inter-personal inequalities have received relatively little attention, partly perhaps because of assumptions that growth needs to be enhanced before distribution can be seen as a concern, partly because of an assumption that income inequalities in Africa are not very large or significant—which inequality data across Africa show not to be the case in many countries (Anderson and McKay 2004; Nel 2003; World Bank 2012). Gender inequalities have received some attention in the context of Africa.<sup>27</sup>

While the ‘softer’ dimensions of development seem to receive increasing attention as countries become wealthier, they appear equally important for poorer countries. In fact, most development practitioners tend to emphasize the importance of informal institutions in such contexts (and hence limitations of formal governance indicators, in a context where data in general are relatively poor). There are often strong claims about how growth and social development interrelate, and about the compatibility of traditional norms with modern economic development. It thus seems pertinent to explore these in more depth in low-income contexts, and we believe the ISD can make a contribution to this knowledge in cross-country analysis.

## 5 Indices of Social Development

The Indices of Social Development (ISD) combine over 200 indicators from 25 sources to develop aggregate measures or composite indices of social development. The ISD are an instrument to show that social development is something that we can define and measure—with all the challenges this entails—and therefore demonstrably advance. At present, the database presents insight into a range of social development issues in about 200 countries. Data coverage varies

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<sup>25</sup> Booth (2012: 21) also quotes Douglass North who argues that sustained political reform follows economic transformation.

<sup>26</sup> Durkheim (1893) examines how industrialization changed the nature of solidarity; see the review in Norton and de Haan (2012), highlighting how much of the classics in social science emerged during periods of drastic social transformation.

<sup>27</sup> See, in particular, recent work by Akyeampong and Fofack (2013) showing a positive relationship between gender equality in education and labour force participation and economic growth.

greatly depending on indicator and data source, though the typical indicator covers 50-100 countries.

For Africa, data for 2010 can be generated for 47 countries on at least two of the indices (in that year, 21 countries have data on all six dimensions). The ISD, of course, draw upon the Afrobarometer surveys,<sup>28</sup> an important source on attitudes on social, political and economic data for the region which, for example, allows cross-country comparisons of the relationship between corruption and poverty.<sup>29</sup> The fifth round of the Afrobarometer is administered in 35 countries. The ISD also draw upon the most recent waves of the World Values surveys (2005-07 and 2010-13) which, out of a total of over 100 countries surveyed, also draw upon an expanded sample of countries from sub-Saharan Africa (SSA), allowing comparison of social institutions of African countries in a broader cross-country framework.

An iterative process of consultation over an extended period of time, and technical tests including factor analyses, have led to the categorization of six indices of social development:

- Civic activism, referring to the strength of civil society, measured by levels of civic activism and access to information;
- Clubs and associations, referring to relations of trust and cohesion within local communities;
- Inter-personal safety and trust, referring to norms of nonviolence between persons in society;
- Inter-group cohesion, the relations of trust and cohesion between defined ethnic, religious, or linguistic identity groups;
- Inclusion of minorities, which measures levels of discrimination against vulnerable groups (indigenous peoples, migrants, refugees, lower caste; this index was most recently added); and
- Gender equality, which measures norms of non-discrimination against women in work, household, educational and public institutions.

This allows comparisons of each of the dimensions of social development for each country (where sufficient data are available). This is illustrated for Ghana in Figure 1, which demonstrates, for example, high levels of clubs and associational activity, but low levels of safety and trust (which may look paradoxical, but as we see later the relationship between the two is not very strong).

These dimensions can, of course, also be described over time, with currently five data points available for ISD as a whole. For Ghana (see Figure 2), this suggests an increase in the value on inter-group cohesion, and decrease in value of clubs and associations (but also the limitations in terms of available data points; note that time periods are averages for several years of available data so it is not possible to link data to a specific year for a series of countries).

The data derive from a large variety of independent sources. The nature of the underlying indicators is varied, consisting of perceptions (e.g., of trust), recorded incidences (e.g., of crime), and expert opinions (e.g., crime advisories). The varied nature of data has consequences for the analysis, and further diagnostic tests are needed to examine its impact. The quality of the indices is, of course, dependent on the quality of the underlying indicators; while all databases have a good

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<sup>28</sup> Available at: [www.afrobarometer.org/](http://www.afrobarometer.org/).

<sup>29</sup> See [www.afrobarometer.org/publications/working-papers/item/133-corruption-institutional-discredit-and-exclusion-of-the-poor-a-poverty-trap](http://www.afrobarometer.org/publications/working-papers/item/133-corruption-institutional-discredit-and-exclusion-of-the-poor-a-poverty-trap).

reputation, this may vary. The tables generated include the standard error (shown in Appendix Table A1 at the end of this paper), as an easy means to assess the quality of data produced.

## 6 How the indices are aggregated: matching percentiles

For the aggregation, the ISD use a variant of the matching-percentiles method used by Lambsdorff (1999, 2006) in the aggregation of the Corruption Perceptions Index. In this approach, scores are assigned to countries based on ordinal rankings; the ranks of countries for variables included in the index are used to assign equivalent values to countries with equivalent ranks. In this section, we outline the exact stages used in progressing from a set of individual indicators to a final composite index score.

For the Indices of Social Development, three steps are taken in preparation for the indexing process itself. First, each component variable is standardized to have a mean zero and standard deviation one and oriented so that the more desirable outcomes receive a higher (positive) value and less desirable outcomes receive a lower (negative) value. Next, we take an observation-level (row) average of the variables for the five years around each of our anchor years for the indices: 1990, 1995, 2000, and 2005. So, for example, the 1995 value will be a row (country) average of the 1993, 1994, 1995, 1996, and 1997 values. Finally, in an effort to overcome issues of correlated error, for example, in instances where we have multiple variables from the same source covering the same type of item—we take a row average of the error-correlated variables to create a series of ‘sub-indices’ used as the input variables in the matching percentiles process.<sup>30</sup> This averaging also nets out a portion of any classical measurement error which may exist in these variables.

As with any indexing methodology, the basic premise is that for each of the six dimensions of social development, there exists some latent construct ( $L_i$ ) representing the true level of that construct in country  $i$ . Each of the  $k$  available indicators  $x_{ik}$  is a manifestation, on a different functional transformation  $h_k(\cdot)$  and with varying degrees of measurement error  $e_{ik}$ , of the level of  $L_i$  so that:

$$x_{ik} = h_k(L_i) + e_{ik} \quad (1)$$

and the latent variable can be recovered through some function  $g(\cdot)$ :

$$L_i = g_i(x_{ik}) + u_i \quad (2)$$

In other indexing applications, the functional form of  $h$  is usually assumed to be known (and usually assumed linear and isomorphic across  $k$ ). Here we recognize that we are unable to estimate the functional form of  $h_k$  and thus employ a nonparametric aggregation methodology, with no assumptions regarding the functional form of the relationship between  $L$  and  $x_k$ . We merely assume that the relative position of countries on  $x$  for variable  $k$  reflects a better or worse underlying condition with respect to  $L$ . The ranks of successive indicators in the index are then used to assign values to countries.

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<sup>30</sup> A note on data coverage: For sub-indices of the Local Community or Safety & Trust indices which use variables not available for the current round so that the entire sub-index is missing, we use data from the previous round for that sub-index. If the previous round is not available we leave the sub-index as missing. This does not occur much in our data, but where it does, it is almost always for the 2005 round (as data from 2006 and 2007 are often not yet available) and only ever for the Local Community and Safety & Trust indices.

The method uses a recursive process of matching observational ranks over pairs of variables: a master and an input variable. The initial master variable is a random variable  $\sim N(0.5, 0.15)$  and the input variables are the ‘sub-indices’ described earlier. Taking each of the input variables in turn, the algorithm first determines which observations appear in both the master and input variables. Observations for this conjoint set are then ranked separately for the master and the input variables. Having obtained master and input variable ranks for each observation, we next create a ‘match’ variable which rescales the input variable by assigning the cardinal value of the country in the master variable to the country with the same ordinal rank in the input variable. For example, if Albania, Burundi, Cameroon, and Denmark were to have master variable scores of 0.45, 0.61, 0.65, and 0.89, and input variable scores of 0.82, 0.94, 0.31, and 0.46, then they would receive ‘match’ scores of 0.65, 0.89, 0.45, and 0.61.

Each observation which has a value in the input variable will receive a matched value, matched against the master variable for each of the  $K$  input variables (sub-indices) used in creating the index. Once the match values are assigned for each of the input variables, the  $K$  match variables are averaged to create the index score for each country.<sup>31</sup>

As the indexing process is obviously influenced by the draw of the random normal master variable, the newly created index score is fed back through the indexing process as a new master variable. This process iterates recursively until the index reaches convergence. Our convergence parameter is  $10^{-4}$  for the sum of the squared differences between the master variable and resulting index within a particular iteration. As a further check, this convergence process is run with 1,000 Monte Carlo runs for each index. A country’s final score is its average score across the 1,000 runs. The reported standard error for each country is the average of the standard error across 1,000 runs where the standard error in each individual run is the standard error across the  $K$  matched variable scores in the final (converged) indexing iteration. Because the law of large numbers assures that the means of the index means over the 1,000 Monte Carlo runs is distributed asymptotically normal, assigning the initial master variable a normal distribution at the outset does not seem egregious.

A more colloquial illustration may help to explain how the database is constructed. Imagine that five experts have experience about the value of a certain indicator in a number of countries, and these countries are different but with an overlap. Matching percentiles produces an ordinal ranking of the values assigned by the first expert. This ranking is then compared with the ranking of the second expert, and as long as at least one of the countries overlap, one can compare the two rankings, and ‘merge’ them, with the countries that have the same rank receiving the same score. It then compares the rank of the third expert, and so on through all independent rankings available. If rankings of countries differ between experts, the value (ranking) is adjusted accordingly, in a form of averaging. The ‘matched score’ become the value for that index, provided, as mentioned above, that in this example, at least three experts had given a score for that country, and that the knowledge of the experts was independent.

Using the matching percentiles methodology for the Indices of Social Development has several advantages over the alternative methods described earlier. Among the most important of these is the ability to handle variables which have many missing values: the ability to use incompletely populated variables is tremendously important in developing a global index for a latent construct that is difficult to measure. Such an index benefits from being able to use as much good data as possible, given that data items for these constructs frequently do not often cover every country. Discarding a variable because it is incompletely populated would waste the useful information

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<sup>31</sup> The denominator of this mean for country  $i$  is the number of matched input variables for which country  $i$  has a non-missing value.

collected for countries which the variable does treat. By contrast, most other methods—regression principle components analysis, factor analysis—require completeness of information. Methods based on a regression framework, for example, require that any observation used in the estimation has data for the dependent variable and each of the regressors, and observations which are missing data in any one of these variables will be dropped. As the data used in indexing social development are likely not missing at random (much less missing completely at random), dropping observations with partially missing data is likely to bias estimates for the remaining countries—and obviously leads to fewer scored observations and consequently less robust indices.

## 7 What do we know about social development in Africa?

The following presents a first attempt to see whether there are any patterns in the ISDs for Africa, whether they may be related to GDP levels, and indeed whether the data could provide sufficient coverage to develop such analysis. Moreover, we describe how these simple correlations compare to what we know, from earlier analysis, of global patterns.

### 7.1 Civic activism

Civic activism refers to the strength of civil society, measured by levels of civic activism and access to information. It uses data on the extent of engagement in activities like signing petitions, demonstrations, the organization and effectiveness of civil society, access to media, levels of awareness and information of political issues. According to a substantial body of literature from within the behavioural political science tradition, formally participative institutions, such as regular elections, have to be combined with informal institutions of civic engagement in order to deliver positive governance outcomes such as the exposure of corruption or pressure for the delivery of public goods (Putnam 1993; Inglehart and Welzel 2005). Direct questions on these issues are fielded as part of the Afrobarometer and World Values surveys for a wide range of African countries.

The ISD data for Africa for 2010 suggest a positive association between civic activism and GDP per capita ( $r = 0.28$ );<sup>32</sup> see Figure 5. This is in line with the analysis of the global dataset by Huang (2011), who concludes that the causation runs from GDP to civic activism, and is also consistent with the modernization arguments of Inglehart and Welzel (2005) and Norris (1998), according to which rising rates of literacy, access to media, and use of ICT facilitate greater collective action on the part of citizens. Moreover, Huang (2011), showing that in OECD countries civic activism decreased over the last two decades while it increased in developing countries, ascribes this to changes in the form of civic activism, notably the increased use of internet sources in wealthy countries. Data for 1995-2010 (not reported here) suggest that in Africa, indeed, the indicator of civic activism has increased in accordance with a decade of strong economic growth.

In fact, relative to income per capita, countries in Africa have high levels of engagement in civic activities such as protests, petitions, and media activism, although due to economic under-performance, the level remains low in comparison to other countries and regions. This can be seen from Figure 4, which gives certain African countries and the global average.

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<sup>32</sup> GDP data are GDP per capita at PPP, from the World Bank (2012).

## 7.2 Clubs and associations

The index of clubs and associations describes the relations of trust and cohesion within local communities. Such local-level participation has been found to be essential for ensuring the monitoring and provision of local services, as well as a strong correlate of subjective well-being (Tsai 2007; Putnam 1993; Frey and Stutzer 2000). The strength of ties to neighbourhood and associational life is measured from data on membership of local voluntary groups, time spent socializing with relatives and in local clubs, attendance at community meetings, and participation in development associations. The World Value Survey (WVS) is a main source of data,<sup>33</sup> and the ISD use Afrobarometer data from 16 African countries.

Interestingly, the African data for 2010 suggest a negative correlation between GDP and clubs and associations ( $r = -0.38$ ); see Figure 7. This is consistent with a more general pattern (as described by Durkheim for France) across countries whereby early social modernization leads to a breakdown of traditional local social structures and solidarity and, indeed, trust, due to processes such as urbanization. However, the broader cross-country picture also shows high levels of local community engagement in high-income democracies such as Sweden and the United States, suggesting that new forms of neighbourhood association are capable of forming at higher levels of income. In large part because many individuals remain within ‘traditional’ ascriptive village communities, countries in Africa have high levels of engagement in local level associations relative to other developing countries. However, there is also significant variation within Africa, as Figure 6 shows. The general pattern of weakening local ties as countries enter middle-income status suggests that SSA may also be facing growing social problems associated with the weakening of rural communities, incoming crime, reduced subjective well-being, and social anomie.

## 7.3 Safety and trust

The index of inter-personal safety and trust intends to measure norms of nonviolence between persons in societies. This uses indicators of trustworthiness, such as reported levels of crime victimization, survey responses on feelings of safety and security, homicide data, and risk reports on the likelihood of physical attack, extortion, or robbery. Cross-country econometric studies have shown that safety and trust are predictive indicators of future economic growth (Knack and Keefer 1997).

The Indices of Social Development suggest that levels of inter-personal safety and trust are significantly lower in Africa than in other developing and developed countries; see Figure 8. Using Afrobarometer data, Nunn and Wantchekon (2013) show that this remains true even after controlling for income per capita. As Figure 9 indicates, the Africa ISD data suggest there is no correlation between GDP and safety and trust indicators.

Consistent with the argument that initial economic development leads to a rise in social anomie, a number of relatively developed countries within SSA, such as South Africa and Equatorial Guinea, have higher levels of reported crime and lower social trust. Indeed, in South Africa, levels have declined since 1995, as they have overall across African countries for which there are data.

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<sup>33</sup> In terms of trust levels, WVS data show that African countries rank between the high-trust of central European and low-trust of Latin American countries; Asian and high-income countries have highest levels of trust (Easterly et al. 2006).

Declining levels of social trust may also be symptomatic of the unbalanced and non-inclusive nature of Africa's recent economic growth.<sup>34</sup>

#### **7.4 Inter-group cohesion**

Relations of trust and cohesion between groups—whether ethnic, religious, or linguistic—are measured by the index of inter-group cohesion. This index is based on data on inter-group disparities, perceptions of discrimination, feelings of distrust against members of other groups, reported incidents of riots, terrorist acts, assassinations, kidnappings, civil disorder, terrorism, and violent riots and confrontations.

In large parts of Africa, levels of cohesion remain low, possibly because ethnic, religious, and linguistic fractionalization have made it more difficult to develop political consensus, governance and public goods delivery (Alesina and La Ferrara 2004), and/or possibly because of historical factors including, as mentioned above, the slave trade (Nunn and Wantchekon 2013). But as Figure 10 shows, the levels are also varied, requiring further analysis.

This index shows the strongest correlation with GDP per capita (see Figure 11;  $r = 0.37$ ). This suggests a pattern different from Huang's (2011) analysis of global data, where the cohesion data showed no correlations. It may be that cohesion is particularly important in Africa, and/or at lower levels of GDP, and civil wars and similar expressions of low cohesion are particularly important for economic growth dynamics (Bates 2001). This is likely an endogenous relationship: conflict limits opportunities for growth, and economic stagnation increases zero-sum conflict between ethnic groups.<sup>35</sup>

#### **7.5 Inclusion of minorities**

The index on inclusion of minorities has recently been added to the ISD project. It measures levels of discrimination against vulnerable groups such as indigenous peoples, migrants, refugees, or lower caste groups; and is thus potentially a large improvement on earlier indicators focusing on ethno- or linguistic fractionalization. It is based on direct measures of social institutions and their outcomes, as well as perception-based indicators and proxy measures to measure the access to jobs and educational attainment.

For 2010, there is a fairly good coverage for this index for Africa. This shows a positive correlation with GDP per capita (Figure 13;  $r = 0.26$ ). There also appears to be a fairly good correlation with the ISD inter-group cohesion measure, but with some outliers. In particular, it is worth noting that on the inclusion of minorities index, where African countries score low compared to the global average (Figure 12), African countries perform much worse than on the inter-group cohesion score. This suggests that even where overt conflict between groups is not visible, a latent discrimination nonetheless exists in everyday interaction and continues to pattern the nature of economic and social transactions.

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<sup>34</sup> Some cross-country evidence suggests that income inequality is strongly associated with low and even falling social trust (Rothstein and Uslaner 2005).

<sup>35</sup> Fearon and Laitin (2003) emphasize that ethnic diversity itself does not lead to insurgency; Collier and Hoeffler (2004).

## 7.6 Gender equality

Aspects of gender equality have been relatively well measured and described, including the possible association with economic growth, with equality in education in particular (and to some extent access to finance and production inputs) considered instrumental for promoting growth. As described above, there is also a fair amount of literature and measurement on Africa. Huang (2011) describes how gender in the ISDs has fairly complete coverage, relatively little dispersion, but a slightly curious pattern during the 1990s.

The ISD also show fairly good coverage of gender indicators in Africa. And this shows a positive correlation between gender equality and GDP ( $r = 0.24$ ; see Figure 15). This is in line with Huang's (2011) finding using the global dataset; Huang, moreover, establishes that the data suggest a causal relation from gender equality to growth.

Levels of gender equality are low in Africa compared to other regions (see Figure 14), yet higher than would be predicted based on GDP per capita. In a number of African countries, this outperformance is quite large: in Rwanda, for example, the level of gender equality is not only among the highest in Africa but also above the global mean. The extent to which women in SSA are more empowered than would be expected based on the level of economic development is among the more positive conclusions of an analysis of the continent's social development in comparative perspective.

## 8 Conclusion: Does social development matter for inclusive growth in Africa?

This paper suggests some important points about social development, and some potentially good news on the question of inclusive growth. But these points are merely suggestive, and further work should focus on multivariate analysis with appropriate control variables. Of course in all cases of correlation, even if these are established, causation could run in both directions;<sup>36</sup> to address this for Africa may be more challenging, but further work is definitely warranted to explore this.

Our basic description for Africa and comparisons with more detailed analysis using the global ISD data suggest a positive correlation between GDP per capita and civic activism, inter-group cohesion, inclusion of minorities, and gender. We find a negative correlation with the indicator of clubs and associations, and no association with safety and trust.

At a broad level, this appears to be in line with what has been found for the global dataset: Huang (2011) notes the most consistent and positive relations between GDP and civic activism, inter-group cohesion, and gender equity (the indicator on minorities had not been included in the dataset at that time), and a negative association between clubs and GDP. The raw correlations thus suggest that Africa is no different from the rest of the world in terms of associations between growth and social development.

In terms of our second set of ISDs, focusing around inclusiveness, the data suggest that there are no clear trade-offs: there are strong indications that enhancing women's access does not compromise economic growth, and countries with higher GDPs also have higher scores on both inter- and intra-group cohesion.

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<sup>36</sup> Huang (2011) applies the Granger method to establish causality, using the global dataset, which shows that clubs exert a negative impact on growth, gender a positive impact, that GDP influences safety, and there is no causal correlation between GDP and civic activism and cohesion.



The picture on the ISDs that focus on institutions suggests a more mixed set of relationships. As with gender and groups exclusion, countries with higher GDPs also have higher scores on civic activism, and the trend in Africa appears positive. However, we see no positive relationships between GDP and clubs and associations; this may be due to the indicator, or a sign of the impact of structural transformation of African societies, with old forms of association disappearing (possibly giving way no new ones).

Finally, we observe no correlation between GDP and safety and trust. This may be partly related to outliers of rich and unsafe countries, partly perhaps to the lack of inclusiveness of Africa's growth pattern.

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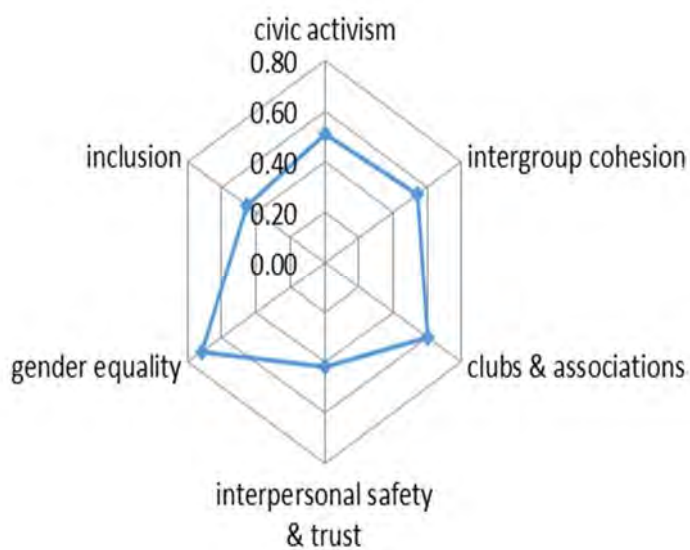
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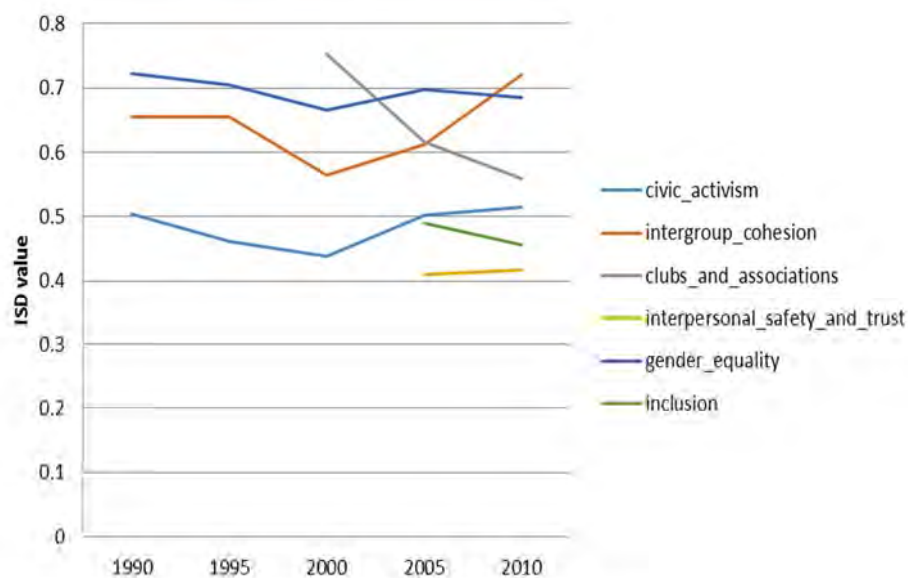
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Figure 1: Illustration of the dimensions of social development, Ghana



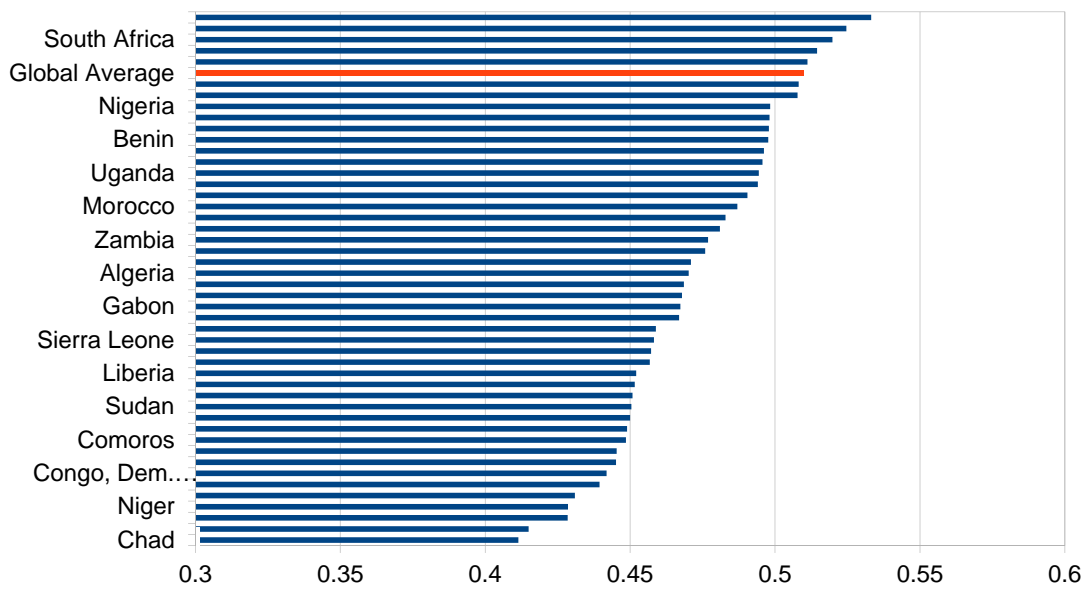
Source: Authors' calculations, based on Indices of Social Development.

Figure 2: ISD trends, Ghana, 1990-2010



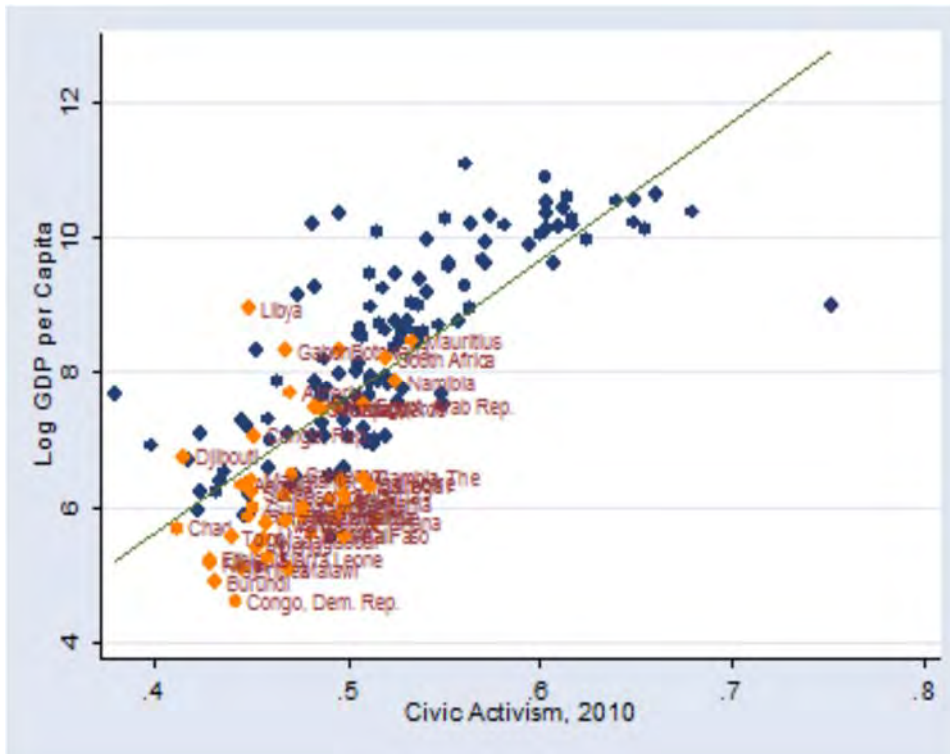
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Figure 3: Civic activism, African countries and global average, 2010



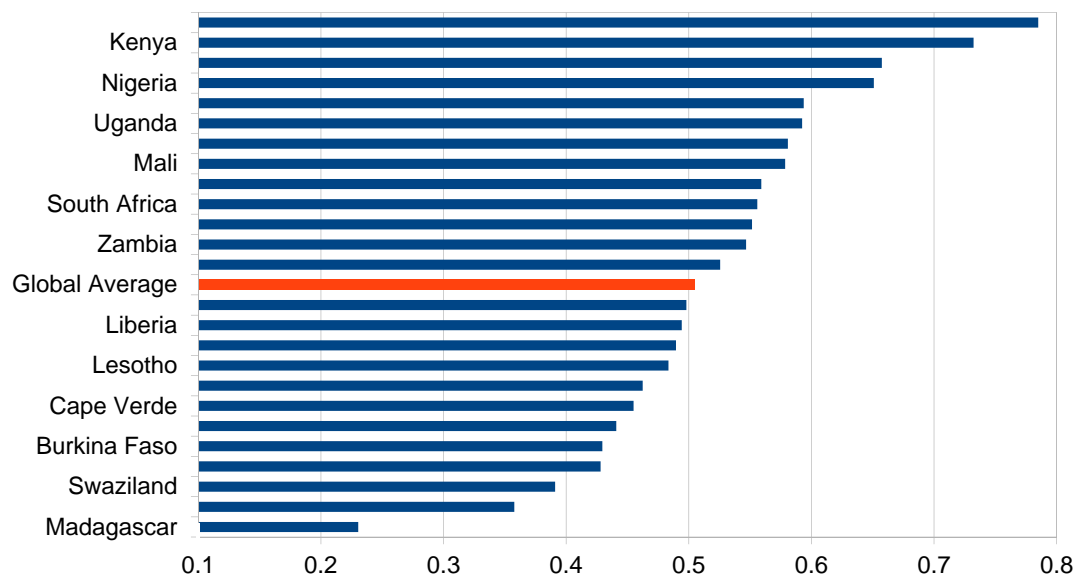
Source: Authors' calculations, based on Indices of Social Development.

Figure 4: Correlation: civic activism and GDP



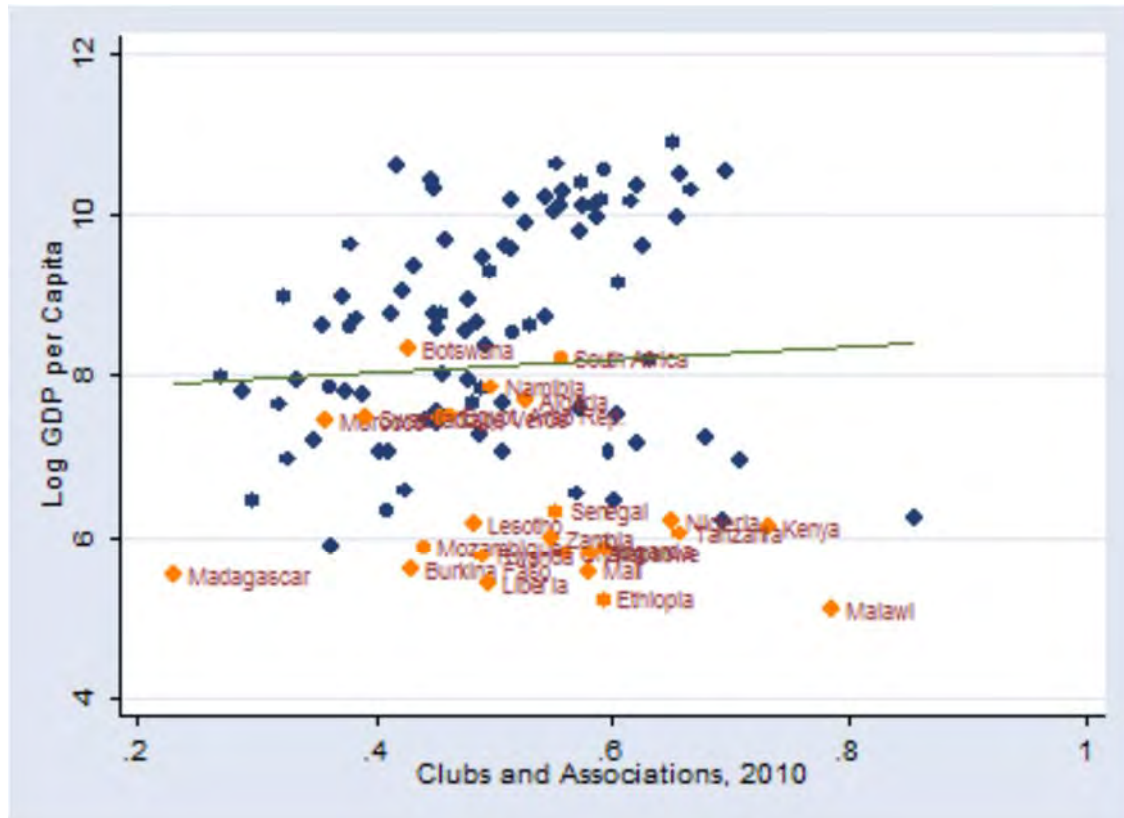
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Figure 5: Clubs and associations: African countries and global average, 2010



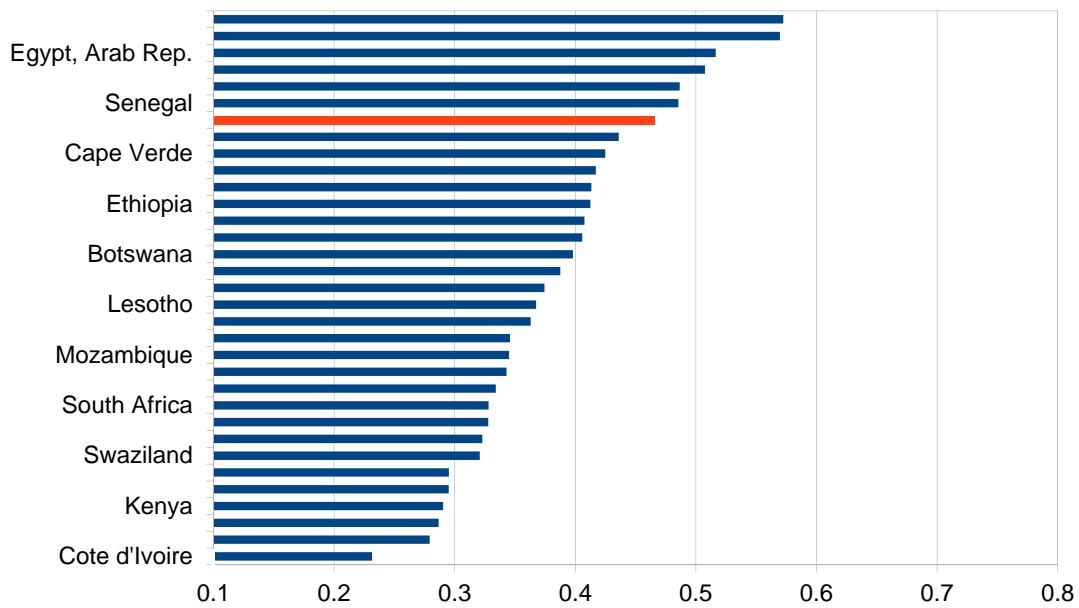
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Figure 6: Correlation: clubs and associations and GDP



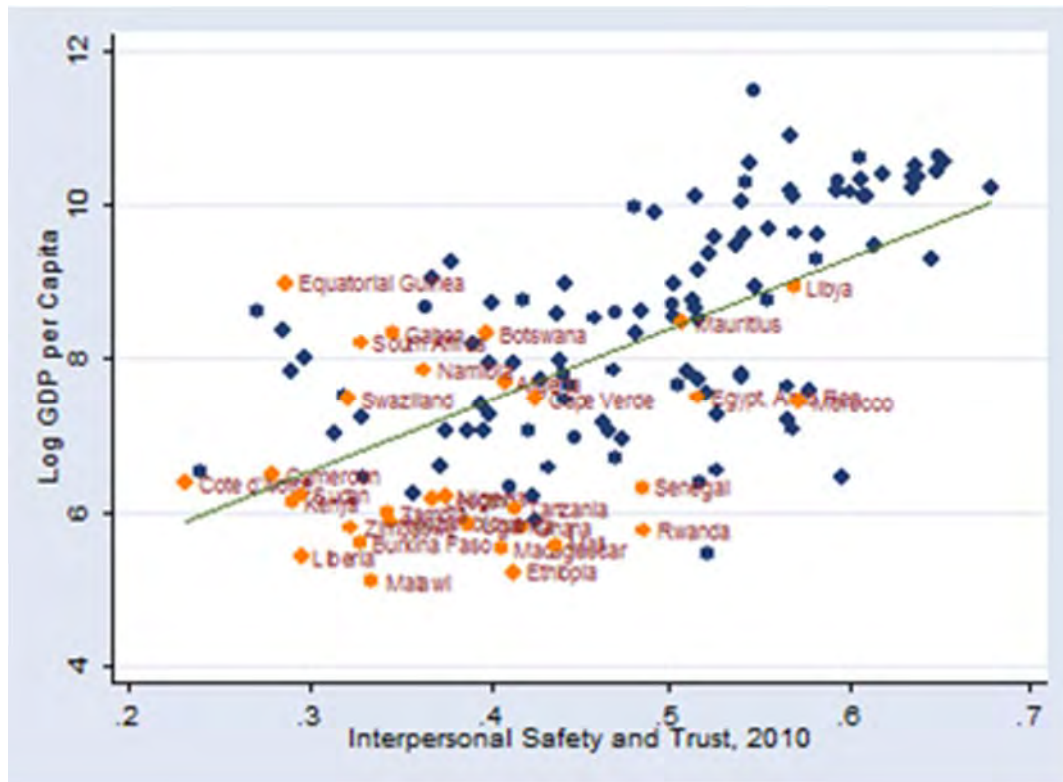
Source: Authors' calculations, based on Indices of Social Development.

Figure 7: Safety and trust, African countries and global average, 2010



Source: Authors' calculations, based on Indices of Social Development.

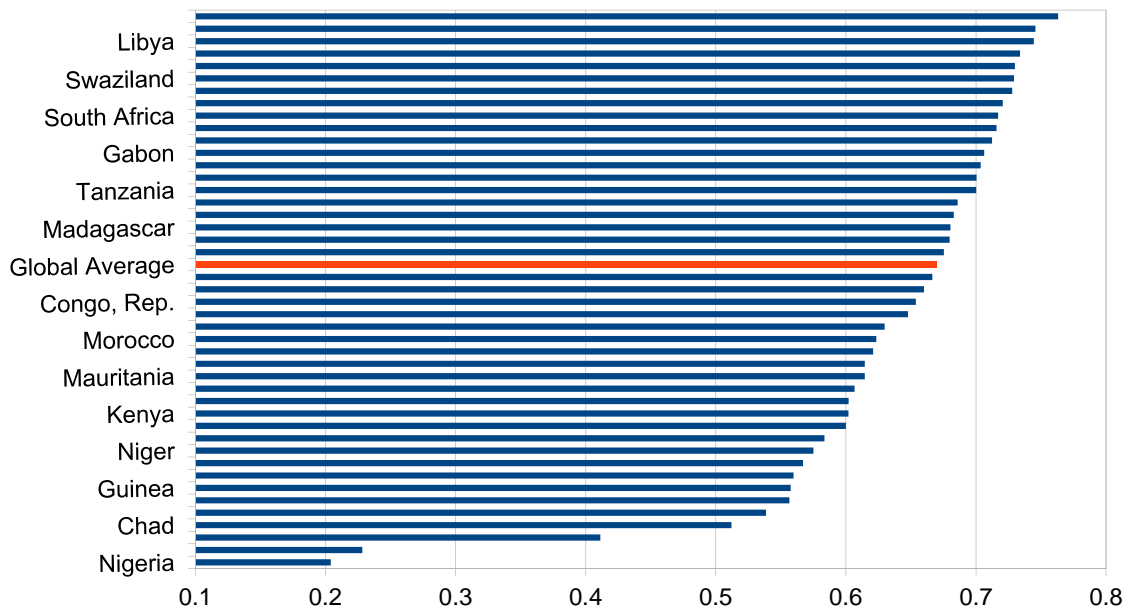
Figure 8: Correlation: safety and trust and GDP



Source: Authors' calculations, based on Indices of Social Development.

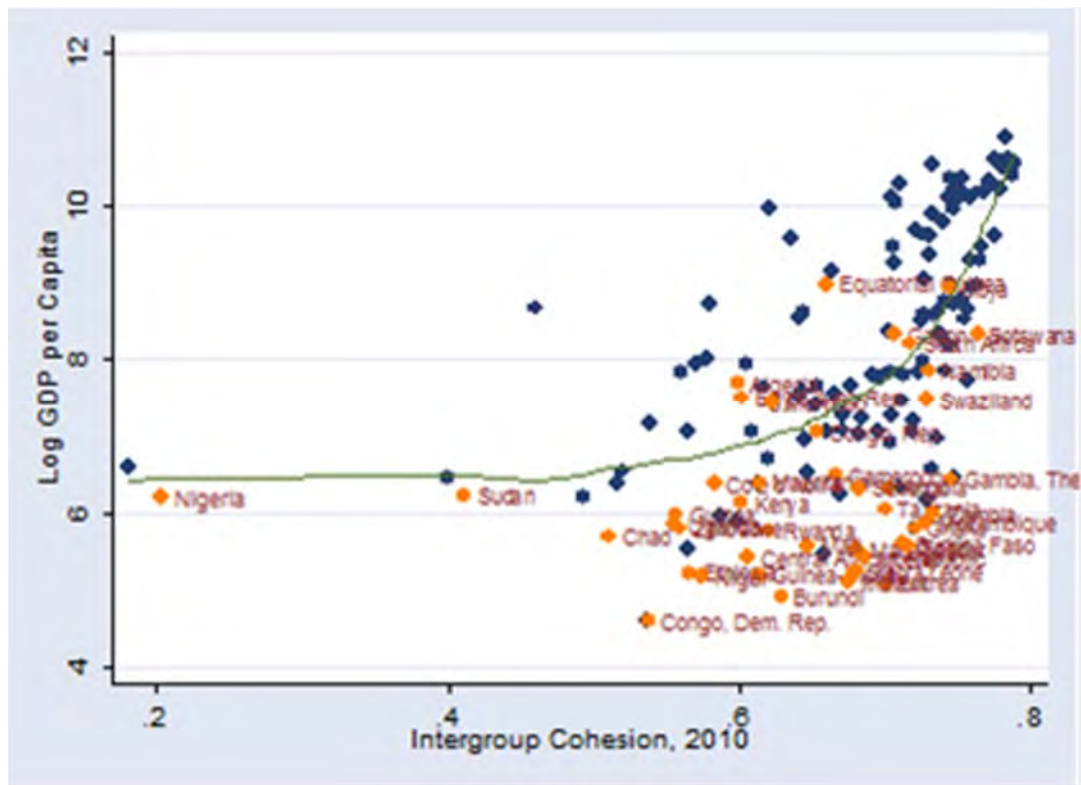


Figure 9: Intergroup cohesion, African countries and global average, 2010



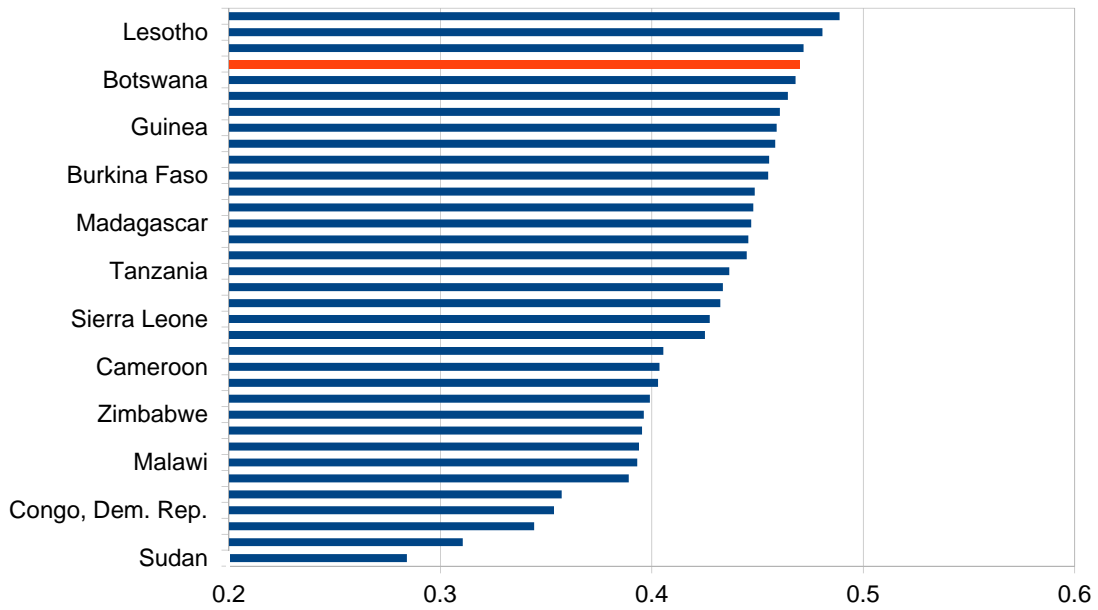
Source: Authors' calculations, based on Indices of Social Development.

Figure 10: Correlation: inter-group cohesion and GDP



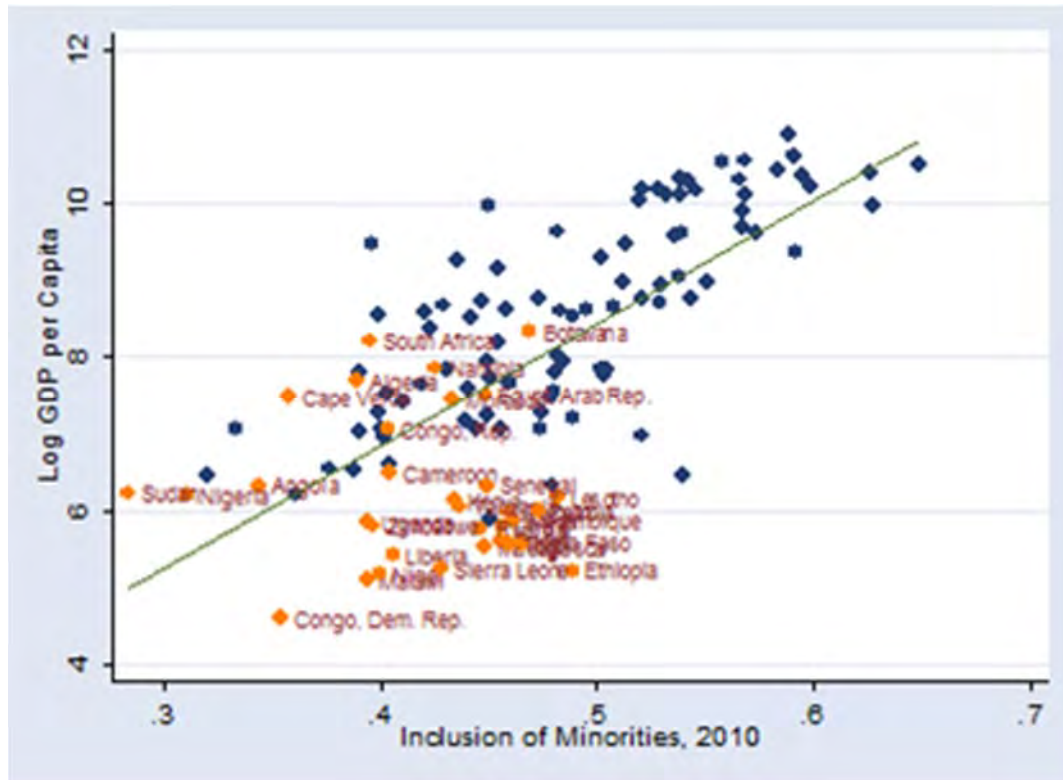
Source: Authors' calculations, based on Indices of Social Development.

Figure 11: Inclusion of minorities, African countries and global average, 2010



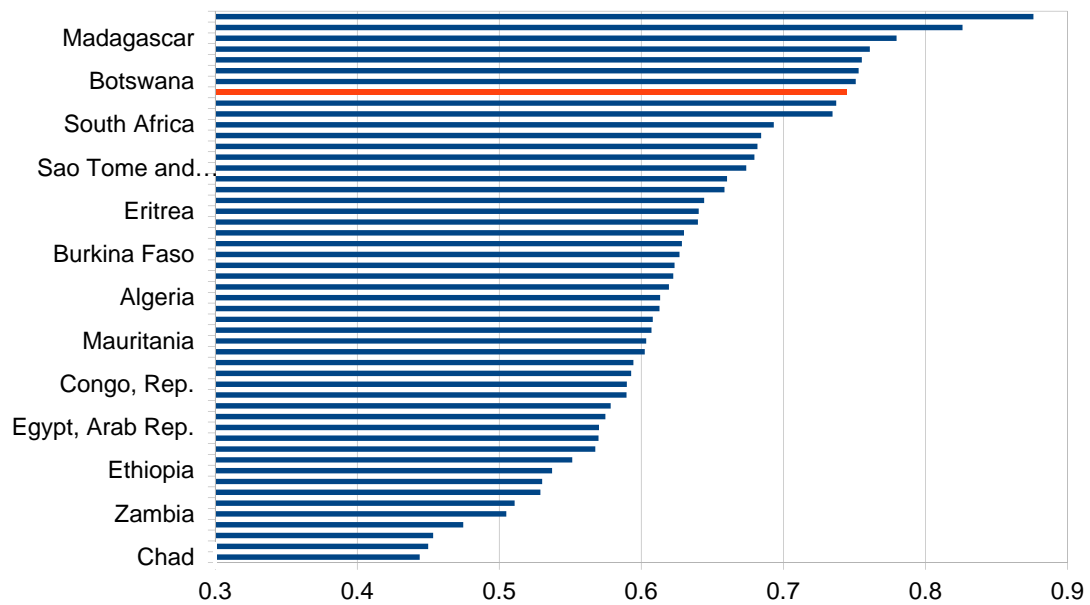
Source: Authors' calculations, based on Indices of Social Development.

Figure 12: Correlation: inclusion of minorities and GDP



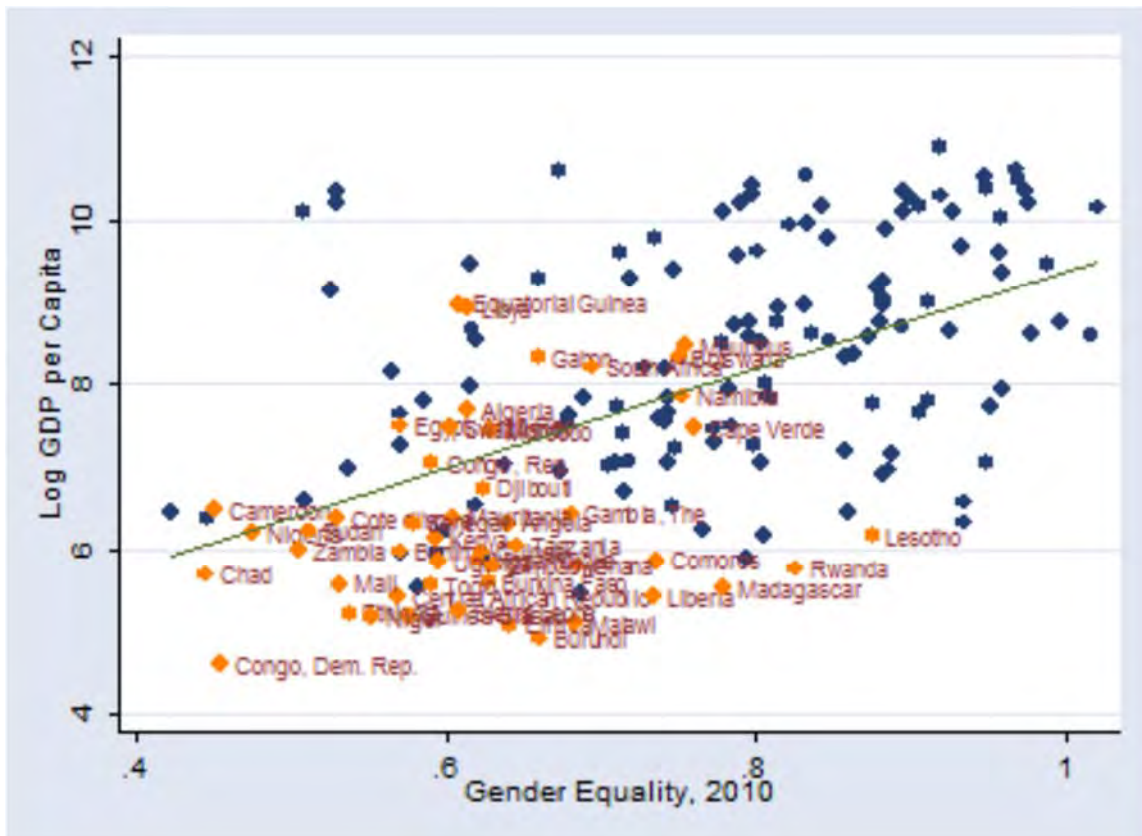
Source: Authors' calculations, based on Indices of Social Development.

Figure 13: Gender equality, African countries and global average, 2010



Source: Authors' calculations, based on Indices of Social Development.

Figure 14: Correlation: gender equality and GDP



Source: Authors' calculations, based on Indices of Social Development.

Appendix Table A1: Overview ISD data Africa 2010

ISD values for each country and year, with standard error [s.e.]; empty cells imply data not available

	Civic activism	s.e.	Inter-group cohesion	s.e.	Clubs & associations	s.e.	Inter- personal safety & trust	s.e.	Inclusion	s.e.	Gender equality	s.e.
Algeria	0.468	0.019	0.489	0.003	0.526				0.389	0.012	0.660	0.006
Angola	0.445	0.023	0.517	0.007					0.344	0.013	0.697	0.021
Benin	0.493	0.003									0.669	0.021
Botswana	0.490	0.014	0.571	0.007	0.469	0.023	0.396	0.060	0.468	0.004	0.766	0.037
Burkina Faso	0.480	0.030	0.544	0.004	0.538	0.193	0.323	0.082	0.455	0.026	0.682	0.025
Burundi	0.432	0.020	0.424	0.019							0.727	0.035
Cameroon	0.467	0.018	0.515	0.004			0.274	0.038	0.404	0.013	0.596	0.016
Central African Rep.		0.469	0.008								0.652	0.028
Chad	0.413	0.000	0.431	0.018							0.621	0.025
Congo, Dem. Rep.	0.442	0.016	0.425	0.005					0.354	0.031	0.618	0.015
Congo, Rep.	0.450	0.004	0.490	0.002					0.403	0.007	0.649	0.021
Cote d'Ivoire	0.492	0.004	0.431	0.006			0.157	0.052			0.624	0.005
Djibouti	0.416	0.015	0.533	0.005							0.688	0.017
Egypt, Arab Rep.	0.504	0.025	0.473	0.002	0.464	0.009	0.536	0.102	0.448	0.019	0.654	0.012
Equatorial Guinea		0.516	0.008			0.296	0.060				0.672	0.014
Eritrea	0.440	0.060	0.521	0.005							0.691	0.015
Ethiopia	0.427	0.027	0.392	0.010	0.672		0.408	0.031	0.489	0.020	0.665	0.028
Gabon	0.464	0.006	0.547	0.004			0.353	0.027			0.709	0.019
Gambia, The	0.507	0.035	0.564	0.003							0.706	0.016
Ghana	0.511	0.021	0.542	0.004	0.603	0.068	0.415	0.048	0.456	0.012	0.718	0.027
Guinea	0.447	0.017	0.423	0.004					0.459	0.028	0.694	0.024
Guinea-Bissau			0.478	0.007							0.657	0.012
Kenya	0.492	0.031	0.463	0.005	0.618		0.273	0.076	0.434	0.013	0.657	0.029
Liberia	0.447	0.011	0.520	0.001	0.504		0.255	0.068	0.405	0.009	0.747	0.021

Table continues

	Civic activism	s.e.	Inter-group cohesion	s.e.	Clubs & associations	s.e.	Inter- personal safety & trust	s.e.	Inclusion	s.e.	Gender equality	s.e.
Libya	0.446	0.010	0.585	0.005			0.572	0.083			0.678	0.014
Madagascar	0.452	0.012	0.519	0.004	0.227		0.386	0.059	0.447	0.016	0.762	0.023
Malawi	0.465	0.026	0.510	0.008	0.794		0.328	0.031	0.393	0.010	0.729	0.029
Mali	0.495	0.022	0.490	0.007	0.616	0.025	0.406	0.063	0.464	0.013	0.633	0.012
Mauritania	0.446	0.017	0.469	0.009							0.679	0.007
Mauritius	0.510	0.015					0.505	0.058			0.766	0.017
Morocco	0.484	0.015	0.491	0.003	0.344		0.560	0.097	0.432	0.012	0.685	0.016
Mozambique	0.473	0.020	0.560	0.005	0.450	0.023	0.322	0.044	0.461	0.012	0.689	0.037
Namibia	0.518	0.038	0.547	0.005	0.517	0.014	0.358	0.066	0.425	0.021	0.769	0.028
Niger	0.426	0.006	0.507	0.004					0.399	0.010	0.635	0.019
Nigeria	0.491	0.021	0.281	0.009	0.654	0.065	0.362	0.112	0.311	0.020	0.604	0.006
Rwanda	0.444	0.008	0.482	0.002	0.594		0.488	0.057	0.446	0.027	0.786	0.033
Senegal	0.504	0.023	0.509	0.006	0.573		0.475	0.077	0.449	0.012	0.657	0.014
Sierra Leone	0.454	0.000	0.518	0.003					0.427	0.016	0.684	0.037
Somalia			0.234	0.023					0.445	0.026		
South Africa	0.514	0.032	0.535	0.004	0.549	0.101	0.321	0.029	0.395	0.010	0.761	0.020
Sudan	0.449	0.016	0.340	0.019			0.292	0.061	0.284	0.022	0.621	0.005
Swaziland	0.475	0.022	0.553	0.004	0.392		0.319	0.049			0.702	0.034
Tanzania	0.499	0.043	0.518	0.004	0.659	0.106	0.408	0.068	0.437	0.019	0.709	0.032
Togo	0.439	0.026	0.533	0.004					0.458	0.022	0.661	0.013
Tunisia	0.490	0.016	0.559	0.003	0.263		0.435	0.083			0.679	0.013
Uganda	0.493	0.027	0.423	0.006	0.591	0.063	0.379	0.057	0.394	0.016	0.676	0.026
Zambia	0.470	0.019	0.547	0.004	0.583	0.114	0.338	0.041	0.472	0.010	0.641	0.018
Zimbabwe	0.461	0.025	0.448	0.014	0.580	0.123	0.314	0.058	0.396	0.035	0.723	0.027

Source: www.indsocdev.org, August 2013.