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## The contribution of income, social capital, and institutions to human well-being in Africa

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**The Contribution of Income, *Social Capital*, and Institutions  
to Human Well-Being in Africa**

**Abstract**

Using cross-sectional time series data from a large group of African countries, we examine the effects of income, institutions and social capital—with emphasis on the latter—on literacy and life expectancy. The empirical results confirm that income has a positive contribution. We also show that an improvement in institutions has positive influence on literacy but does not seem to affect life expectancy. Moreover, we find that the interaction between good institutions and high social capital produces a positive contribution to human well-being. This result suggests that social capital and institutions are complements, and underscores the important role of institutions.

## **1. Introduction**

For many years most African countries have ranked very low in terms of human development. The concept of human development summarizes a small number of indicators in the widely publicized human development index (HDI) produced by the United Nations Development Programme (UNDP). On the other hand, human well-being (HWB) includes a wider array of components ranging from nutrition and calorie intake to freedom to attain certain achievements. Thus, HWB includes—but extends beyond—economic growth and human development. Most African nations tend to score very low on the HWB front as well. Furthermore, many African countries have experienced conflicts. Such conflicts have had significant impact on the type of institutions that emerged (Aron, 2003), and on social and human capital.

Studying the determinants of HWB in the proper sense and at the macro level is a very important endeavor. Unfortunately, it is at best an extremely complicated task. Thus, most scholars focus on some aspects of HWB. In this paper, we attempt to assess the effects of income, institutions and social capital—with emphasis on the role of social capital—on human well-being in Africa. We use two indicators of human well-being; a measure of access to knowledge represented by adult literacy; and a measure of health represented by life expectancy. Following Sen's *Capability Approach* (Sen, 1990), we view human well-being in terms of the capabilities an individual achieves. Capabilities are considered ends while the means to these ends may, for example, include income, democracy, property rights, and social capital.

We believe that the main contribution of our work is the use of a set of regressors that are often used as *dependent* variables, as in the case of income; or ignored when focusing on human well-being, as in the case of institutions and social capital. We also hope to contribute to the literature on social capital by identifying a suitable indicator for social capital at the macro level.

The remainder of the paper is organized as follows. In the next section, we discuss institutions, social capital and their implications for economic development. Section 3 describes the variables and methodology employed. In section 4, we analyze the estimation results. We provide concluding comments in section 5.

## **2. Institutions, social capital, and economic development**

Institutions may be defined as the sets of formal and informal constraints imposed on social, economic and political activities (see Aron, 2003). North (1990 and 1991) provides an excellent discussion of institutions. The role of institutions had been ignored in the 1970s and 1980s but became very important in the early 1990s, as some countries that had liberalized and privatized began to experience severe economic problems. Nowadays, it is widely agreed that policy reforms and liberalization would quite likely fail if the country does not have the proper institutions in place.

Currently, there is an important body of literature on the role of institutions in economic development, including Kaufman *et al.* (1999), Acemoglu *et al.* (2001, and 2003), Rodrik (2002), Rodrik *et al.* (2002), and Dollar and Kraay (2003). In addition to their indirect effect—i.e., through their effect on income—institutions are also shown to have a direct effect

on human well-being (Baliamoune, 2004). Moreover, some empirical studies have shown that institutions can be crucial to the success of reforms (see, for example, Addison and Baliamoune, 2003; and Dollar and Kraay, 2003). It is important to note that the relationship between institutions and indicators of HWB, for example literacy or health measures, is not always unambiguous. Dasgupta and Weale (1992) report that per-capita income and life expectancy are positively correlated with improvements in political and civil liberty but improvements in literacy have a negative association with political and civil liberties. Also, Jungeilges and Kirchgässner (2002) find a negative relationship between suicide rates and civil liberty.

In general, the literature on social capital divides into two distinct strands. One studying the social factors that influence the creation and development of social capital, for example, the work by Fukuyama (1995 and 2001), Easterly and Levine (1997), and Miguel and Gugerty (2002). The other strand of the literature focuses on the association between social capital and a host on economic, financial and institutional variables. This line of research includes studies by Putnam (1993), Knack and Keefer (1995, 1997), Woolcock (1998), Temple (1998), Temple and Johnson (1998), Knack (1999), Dasgupta (2000) and Guiso *et al.* (2001).

Putnam (1993) defines social capital as “those features of social organization, such as networks of individuals or households, and the associated norms and values that create externalities for the community as a whole.” Coleman (1987, 1988 and 1990) is generally credited by introducing and formulating the concept of social capital.<sup>1</sup> Coleman (1990)

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<sup>1</sup> It is important to note the similarity between the concept of social capital and the theory of social interactions which was formally outlined by Becker (1974).

provides a definition that emphasizes the function of social capital and describes it as “some aspect of social structure that enables the achievement of certain ends that would not be attainable in its absence”. Viewed in this light, social capital becomes akin to Sen’s ‘functionings’, while the term ends is similar to ‘capabilities’. Indeed some scholars (for example, Temple and Johnson, 1998) stress the concept of ‘social capability’. It is in this sense that our research perceives social capital and its effect on well-being. We view social capital as a means that would enable a capability; such as being healthy or being educated. While one may argue that part of being healthy and educated ensures getting a job, for example, and hence they could be viewed as functionings; we follow Sen (1990) and Balamoune (2003), and posit that for the major part being healthy and literate constitutes an end or a capability in its own right.

The literature on social capital stresses networks or associational activity (Putnam, 1993) and trust (Fukuyama, 1995; and Knack and Keefer 1997) as major indicators of social capital. Putnam (1993) shows that associational activity is correlated with economic performance. Barr (1998) argues that social capital in the form of networks may “help to reduce the uncertainties faced by entrepreneurs in relation to the variability of their incomes”. On the other hand, Knack and Keefer (1997) show that there is no correlation between membership in formal groups, and economic performance and trust. In addition, they find that there is significant association between trust and civic norms, and income. Knack and Keefer also find that trust and civic norms are stronger in countries with formal institutions that effectively protect contracts and property rights. This suggests the presence of complementarities between institutions and social capital. We subscribe to Knack and

Keefer's position and use trust as a measure of social capital. However, in contrast to the assumption in Knack and Keefer (1997), we believe that the trust data contained in the World Values Survey do not satisfactorily convey the state of trust at the macro level (country level).<sup>2</sup>

An alternate way of looking at this is to consider trust as only an example of attitudes which are at best regarded as 'byproducts of informal and formal interactions' (Rose, 1997). We believe an indicator that would reflect the level of trust, or rather mistrust, at the macro level and hence measure the lack of social capital is the level of corruption in the country. If people must give bribe to get public services, for example, then that could be a good indication of lack of trust, cooperation and community ties (see Rose, 1997).

In theory, the contribution of social capital to economic development could be assessed by considering the role of social cohesion that results from networks of trust and reciprocity in poverty alleviation for example. It is reasonable to think of social capital as being particularly important in countries where the monetized economy is small and in societies that produce at the subsistence level, such as the case of many parts of Africa.

Social capital such as that produced by indigenous NGOs and grassroot organizations can be essential to intersectoral cooperation among government agencies, NGOs, and international donors (see Brown and Ashman, 1996). In addition, social capital can be an important factor in coping with economic shocks. For example, Carter and Maluccio (2003)

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<sup>2</sup> The World Values Survey is the primary source of data on trust in a large group of countries mostly from Europe. The survey covers very few African countries. In fact, Knack and Keefer (1997) include only two African countries (Nigeria and South Africa) in their analysis because there were no data on other African countries.



document that in South Africa, households in communities with greater social capital are more able ‘to weather economic shocks’.

Some studies show that causality may run from economic growth to social capital and, more importantly, the effect could be negative. This result is supported by empirical facts observed in some developing countries, for example Indonesia (see Cribb and Brown, 1995; and Miguel *et al.* 2002). The underlying rationale is that high labor mobility, the absence of specific institutional factors, may lead to reduction in social capital in some regions.

Miguel *et al.* (2002) show that, in Indonesia local industrialization caused social capital to increase. Their findings seem to refute the hypothesis that social capital causes growth. This clearly underscores the need to examine the direction of causality, particularly when dealing with time series data from a specific country. Indeed, Sobel (2002) stresses the confusion that often surrounds the causes and effects of social capital.

Social capital may affect output directly by reducing cost and increasing efficiency, and indirectly through its effect on human capital (Coleman 1988) and access to resources, for example access to credit (see Fafchamps and Minten, 1999 and 2000; Fukuyama, 2001, and Fafchamps, 2002). Temple (1998) shows that low social capital reduces investment and slows economic growth. He also claims that ‘countries with relatively low social capital are more likely to have bad policy outcomes.’ The influence of social capital on education has been highlighted in several studies (see for example, Braatz and Putnam, 1996 and Francis *et al.*, 1998). Temple (1998) finds a significant positive association between social capital and

schooling. Similarly, the effects of social capital on health have been documented in the literature (for example, Drèze and Sen, 1995).

Social capital in developing countries has gained importance only recently. Because there are many indicators of social capital, defining a standardized measure is at best very complicated. On the other hand, a standardized measure may not be useful or necessary because social capital tends to differ depending on the unit over which it is measured, the type of society (urban versus rural, religious versus secular, and so on) and the level of human development. Social capital is multidimensional, and thus it may be more useful to try to focus on specific dimensions.

We use a macro view of social capital. In general, this view stresses the institutional relationships and structures including the rule of law, the judicial system, civil liberties and political freedom.

It is important to bear in mind that when researchers try to draw macroeconomic conclusions based on empirical results that use micro or household data they often run into the fallacy of composition problem. The effects at the micro level may be different from those at the macro level. For example, Borjas (1992) shows that ethnicity (a frequently used measure of social capital) slows the inter-group human capital convergence. If this causes inequality in a country to increase while social capital within the group has positive effects on group members' welfare, then this type of social capital surely has negative externalities and could be bad for the country (at the macro level). Interestingly, Knack and Keefer (1997) show that levels of inequality are a good predictor of trust and cooperation, in the sense that

countries with more equal incomes have higher social capital, as measured by the extent of trust and civic norms.

### **3. Methodology and variable description**

We examine the contribution of income, social capital and institutions to human well-being by using the following model

$$HWB = f(INCOME, INSTITUTIONS, SOCIAL\_CAPITAL) \quad (1)$$

We use literacy and life expectancy as alternate measures of human well-being. As discussed earlier, health and knowledge (or education) are examples of capabilities. Income represents an important aspect of command over resources and is a type of functioning. It also serves as a means to achieve a capability that would help to make functionings happen (for example, being free of ignorance or disease). We use income on the right hand side (regressor) because it is a means—not an end—to achieving human well-being. We use of the logarithm transformation of the PPP value of GDP per capita in order to reflect diminishing returns as income rises. Data on income, life expectancy and literacy ratios are from the World Bank World Development Indicators CD ROM (2003).

We use political rights and civil liberties as indicators of institutional quality. Data on civil liberties and political rights are obtained from Freedom in the World Tables (2002) produced by *Freedom House* and are measured on a one-to-seven scale, with 7 indicating the lowest degree of freedom. Based on our earlier discussion of trust at the macro level, we use the Corruption Perceptions Index produced by Transparency International as an indicator of

social capital since 1993. This index is measured on a zero-to-ten scale, with countries perceived as perfectly corruption-free scoring 10. Table 1 displays descriptive statistics for the variables used in the estimation. The list of countries included in this study is shown in Appendix A.

Ritzen *et al.* (2000) argue that “a country’s social cohesion is essential for generating the trust to implement reforms”. They use the term ‘social cohesion’ instead of social capital and define it as “a state of affairs in which a group of people (delineated by a geographical region, like a country) demonstrates an aptitude for collaboration that produces a climate for change.” (Ritzen *et al.* 2000, p. 6). They further add that “what some people would define as social capital—i.e., the norms, networks and other related forms of social connection—will be an important basis for this aptitude”. Ritzen *et al.* (2000) claim that social capital applies more to norms and networks at the community and household level. Thus, it is viewed as a micro concept.

We agree with Ritzen *et al.* in that social cohesion may be viewed as a more appropriate term. However, an alternative way of looking at the issue is to distinguish between social capital at the micro level (for e.g., norms and networks) and social capital at the macro level. Aggregating the networks in a country may not be an appropriate approach to measuring social capital at the macro level (fallacy of composition) because of possible social exclusion and distrust of non-members. We view social capital at the macro level—particularly in ethnically-diverse countries such as most African nations— as an environment where people can trust people they do not know. Thus, something like low (or no) corruption would be an appropriate indicator of such trust.

We employ unbalanced panel-data<sup>3</sup> models and conduct both fixed and random effects estimations, and test the adequacy of the estimations using Hausman specification tests. The equations for the fixed-effects<sup>4</sup> and the random-effects estimators are

$$HWB = X_{it}'\beta + \alpha_i + \varepsilon_{it} \quad (2)$$

$$HWB = X_{it}'\beta + \alpha + u_i + \varepsilon_{it} \quad (3)$$

respectively.

Where  $\alpha_i$  ( $i=1, \dots, n$ ) in equation (2) are the fixed-effects to be estimated and  $X_{it}$  includes the set of regressors; income, institutions and social capital. Equation (3) is used for the random-effects estimation. This estimator considers  $u_i$  as a country-specific random element. The estimation is performed using STATA.

#### 4. Empirical results

Table 2 shows the correlation among the variables. As expected, literacy, income and life expectancy are strongly and positively correlated. The corruption index is positively correlated with improvements in institutions, and with literacy and income. The association between institutions, and literacy and income, although weaker, is statistically significant and has the expected negative coefficient (recall that higher index implies worse institutions) implying an improvement in institutions is associated with higher income and literacy.

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<sup>3</sup> Data on income, literacy, civil liberties and political freedom are from 1975 to 2001. Data on life expectancy are irregular and are for the years 1977, 1980, 1982, 1987, 1990, 1992, 1997, 1998 and 2001. Data on the perceived corruption index are from 1995 to 2001, with only South Africa having data for every year of this period.

<sup>4</sup> STATA performs the estimation using an intercept in addition to the country-specific (constant) terms.

The estimation results are reported in Tables 3 and 4. When we use literacy as the relevant indicator of HWB (Table 3), Hausman specification test results indicate that the random-effects estimator is appropriate.<sup>5</sup> However, when the indicator of HWB is life expectancy (Table 4), in general, Hausman test results indicate that we must reject the null hypothesis that the difference in the beta coefficients is not systematic; i.e., that the random effect-model is valid. Consequently, when the dependent variable is life expectancy, we focus on the estimates from the fixed-effects equations.

The empirical results indicate that, as anticipated, income has a positive effect on literacy and life expectancy in most equations. Improvements in political rights and civil liberties have a positive association with literacy. On the other hand, social capital (low corruption) seems to have a negative effect on literacy but has a positive association with life expectancy (at the 5-percent significance level). We also estimate the model using an interactive term to capture the interaction between institutions and social capital. We obtain a statistically significant and positive coefficient on the interactive term, implying that improved institutions enable social capital to be more effective. Our results are consistent with the conclusions in Knack and Keefer (1997) who report a positive link between social capital and institutions. Furthermore, the estimation results related to the relationship between social capital and literacy are in accordance with the findings in Temple (1998).

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<sup>5</sup> The random-effects estimator is more efficient than the fixed-effects estimator under the null hypothesis. The Hausman test examines whether the two sets of betas differ significantly. If they differ significantly, that would be a sign that the random-effects estimates are inconsistent. Since our results indicate that they do not differ significantly, the random-effects estimates are presumably consistent.

## **5. Conclusion**

In this paper, we examine the links between social capital, institutions and income on the one hand, and two indicators of human well-being on the other, with emphasis on the role of social capital. We use cross-sectional time series data from a large group of African countries and show that income, as anticipated, has a positive contribution to human well-being. Our results also indicate that improvements in institutions contribute to higher literacy rates but do not seem to affect life expectancy. Using an interactive term linking institutions and social capital, we find the interaction between good institutions and high social capital to have a positive association with human well-being, suggesting that social capital (represented by low corruption) and institutions are complements.

The first main contribution of our research is the use of a set of regressors that are often used as dependent variables, as in the case of income; or omitted when focusing on human well-being, as in the case of institutions and social capital. A second contribution to the literature on social capital is the identification and use of corruption as an indicator of social capital at the macro level. Furthermore, given the large body of literature on the causality from literacy to income, our results indicate that causality may very well run from income to literacy or, at least hint to the presence of bidirectional causality.

An important policy implication of our findings is the role played by institutions in enhancing the effectiveness of social capital. Fukuyama (2000) examines the relationship between social capital and civil society and argues that social capital is also a “by product of religion, tradition, shared historical experience and other types of cultural norms.” This suggests that policy has little to do with the creation of social capital, which makes the role of

policy in improving institutions (given the link between institutions and social capital) even more important.

We believe a limitation to this type of relationship testing could be the possible presence of endogeneity. We used lagged values of the regressors in order to minimize the effect of possible endogeneity and the results (not shown) are fairly similar to those reported in Tables 3 and 4. Perhaps a more effective approach would be to conduct Granger-causality tests or use a vector autoregressive technique (VAR) for specific countries. However, the lack of long time-series data on social capital prevents us from performing such estimations.



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## Appendix A

### List of Countries

Algeria	Gabon	Niger
Angola	Gambia, The	Nigeria
Benin	Ghana	Senegal
Botswana	Guinea	Sierra Leone
Burkina Faso	Guinea-Bissau	South Africa
Burundi	Kenya	Sudan
Cameroon	Lesotho	Swaziland
Central African Rep.	Madagascar	Tanzania
Chad	Malawi	Togo
Congo, Dem. Rep.	Mali	Tunisia
Congo, Rep.	Mauritania	Uganda
Cote d'Ivoire	Mauritius	Zambia
Egypt, Arab Rep.	Morocco	Zimbabwe
Eritrea	Mozambique	
Ethiopia	Namibia	

Table 1. Descriptive statistics

Variable		Mean	Std. Dev.	Min	Max	Observations
Literacy	Overall	47.09	20.41	6.70	89.34	N = 1053
	Between		18.90	10.85	80.0	n = 39
	Within		8.25	25.26	66.93	T = 27
Life expectancy	Overall	50.52	7.89	33.4	72.5	N = 389
	Between		7.09	35.68	69.04	n = 43
	Within		3.39	33.50	57.61	T-bar = 9.05
GDP (PPP)	Overall	1679.61	1755.44	224.8	11290	N = 1087
	Between		1557.51	21.98	7185.26	n = 43
	Within		795.67	-1977.92	6718.78	T-bar = 25.28
Political rights	Overall	5.25	1.64	1	7	N = 1129
	Between		1.21			n = 43
	Within		1.17			T-bar = 26.26
Civil liberties	Overall	5.03	1.30	2	7	N = 1129
	Between		0.92			n = 43
	Within		0.94			T-bar = 26.26
Corruption index	Overall	3.42	1.37	.69	6.1	N = 86
	Between		1.28			n = 22
	Within		.32			T-bar = 3.91

Table 2. Correlation coefficients

Number of observations: 990

	Literacy	Income	Political rights	Civil liberties
Literacy	1.000			
Income	0.572	1.000		
Political rights	-0.294	-0.342	1.000	
Civil liberties	-0.271	-0.346	0.833	1.000

Number of observations: 334

	Literacy	Income	Political rights	Civil liberties	Life expectancy
Literacy	1.000				
Income	0.577	1.000			
Political rights	-0.306	-0.369	1.000		
Civil liberties	-0.267	-0.367	0.838	1.000	
Life expectancy	0.472	0.714	-0.259	-0.232	1.000

Number of observations: 85

	Literacy	Income	Political rights	Civil liberties	Corruption index
Literacy	1.000				
Income	0.404	1.000			
Political rights	-0.243	-0.464	1.000		
Civil liberties	-0.277	-0.438	0.918	1.000	
Corruption index	0.316	0.782	-0.636	-0.652	1.000

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