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Corruption and Education

Empirical evidence from cross-country micro-data

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Abstract

This study uses two micro-level datasets to perform an empirical assessment of the role of education on the decision to be corrupt. Bribe payments are used as proxy for corruption. The results show that increasing the level of schooling increases the propensity to bribe. A model of costs and benefits is assumed and regressions are ran to evaluate the effect of education on an intrinsic and an extrinsic cost of being corrupt, measured by justifiability of corruption and perception of corruption, respectively. The estimates show education increases one's intrinsic cost (decreases justifiability) and decreases one's extrinsic cost (increases perception).

Keywords:

Bribery, corruption, education, moral cost

1. Introduction

Corruption, here defined as an illegal payment to a public agent to obtain a benefit that may or may not be deserved in the absence of payoffs (Rose-Ackerman 2009), is a serious economic problem in the world. The losses due to corrupt practices, such as bribery, theft and tax evasion, are estimated by the World Bank to be equivalent to $1,3 trillion annually, or the combined size of the economies of Switzerland, South Africa and Belgium, according with the outgoing chairman of the Global Organization of Parliamentarians Against Corruption (Yamsuan 2013). Evidence as been found that it causes lower investment and economic growth (Mauro 1995), less government spending on education (Mauro 1997) and fewer efficiency on the allocation of resources (Krueger 1974).

Education, on the other hand, is a major economic goal for the world. Widely considered to bear mostly benefits, pecuniary and non-pecuniary, at the individual level (earnings) and aggregate level (public good), education is Millennium Development Goal number 2. Public funds to support educational efforts have steadily increased all over the world and over the centuries, due to the belief that education can be "the Great Equalizer". Political thinkers, such as Rousseau and Jefferson, pioneered this philosophical notion in the XVIII century, which emphasized how any person should be permitted to rise to the position in society that corresponded to his inborn capacity (Fägerlind 1975). On the topic of corruption, economists have found proof at the macro-level of a negative correlation between education and corruption (Ades and Di Tella 1999; Glaeser and Saks 2005). However, the jury is still out on its effect at the individual level, since the empirical investigation is very scarce.

So far, empirical research on the determinants of corruption has focused on explaining one type of indicator: *aggregate*-level *perceived* corruption. Indeed, most corruption indicators (e.g. Transparency International, World Governance Indicators, Business International, International Country Risk Guide, among others) are built from the opinions of "experts" such as firm managers, expatriates and country analysts, and compounded for the country. Only recently have the corruption experiences of citizens and firms been gathered systematically and analysed quantitatively.

This study focuses on one main question: what is the role of education in the decision to be corrupt? To answer this, the direct experiences with bribery of over 40 000 individuals from 20 African countries were explored, along with the responses of another 40 000 from 87 countries. An analysis based on the costs of bribing was developed, following Ryvkin and Serra (2012). The main question was then broken down

into three: the examination of the impact of schooling on the intrinsic cost of bribery, on the extrinsic cost of bribery, and the examination of these in the decision to bribe.

The results suggest that increasing an individual's schooling level increases his propensity to bribe. The effect seems to come from the decrease of the extrinsic cost overriding an increase in the intrinsic cost, though other channels may be at work too, such as an increase in one's benefits, namely monetary benefits. Overall, the findings suggest a kind of micro-macro paradox similar to the one found in aid effectiveness, since the evidence at the micro-level does not match the findings at the macro-level.

The contribution of the study is twofold. Besides providing a cross-national micro-level analysis of several determinants of corruption, with particular emphasis on education, it provides an outlook on how corruption varies across services. Health service bribes were found to be the least predictable by education, while bribes to the police and permit offices are highly correlated with one's education. This difference could occur due to the monopoly power of officials, imperfect recognition by respondents of their own bribery behaviour, or if a type of corruption other than bribery is more relevant.

In what follows, section 2 provides an overview of what the literature has established concerning education and corruption. Section 3 frames our theoretical model. Section 4 presents the data, while section 5 describes the estimation method. Section 6 displays and interprets the results. Section 7 offers further comments and concludes.

2. Literature Review

Economists have come to develop a great body of literature on the economics of corruption: what causes it, its consequences and measurement. This literature witnessed intense growth in the 1990s, when economists turned their closer attention to this matter

as the links with the economic performance of countries, namely the recently transformed socialist economies, were becoming noticeable. Until then, it had been subject matter mostly for sociologists, political scientists and historians (Abed and Gupta 2002). Nowadays, continued interest on the topic and technological improvements in data gathering and treatment make way for more empirical literature, to which this study contributes.

The bulk of empirical literature on the determinants of corruption is devoted to the analysis of aggregate level data, or macro-level data. This consists on explaining country-level corruption perception indices, such as those from Transparency International, Business International or the International Country Risk Guide, using a set of macro regressors, such as average population schooling and measures of institutions. For instance, at this level academics have found corruption to be lower in countries with long exposure to democracy, a Protestant tradition or a history of British rule (Treisman 2000) or where there is higher representation of women in parliament, in senior positions of government bureaucracy or in the share of labor force (Dollar et al. 2001 and Swamy et al. 2011). With what regards education and corruption, the findings point to a negative correlation. In 1999, Ades and Di Tella found average years of total schooling in the population over 25 years of age had a negative effect on corruption at the 10-percent level. More recently, in 2005, Glaeser and Saks estimated that U.S.A. states with higher initial levels of income and education (share of the adult population with 4 or more years of college completed) had lower growth in corruption rates (federal corruption convictions). Moreover, Glaeser and Saks believe the correlation they established between economic development and good political outcomes is due to education improving political institutions.

Despite most theoretical models on corruption having been built upon a microeconomic framework, only recently have empirical studies at the micro-level caught up with them. But there are clear advantages of using micro data. For instance, the ability to develop profound analysis of the incentives to engage in corruption, which can be the basis for better anti-corruption policies, or the disentanglement of certain effects from country-specific institutional factors due to within country variation. Most investigation turned, so far, to the explanation of corruption among firm managers and civil servants. The present study, however, seeks to explain the behaviour of regular citizens. With what concerns education and bribes, more educated citizens have been found to both be the target of more bride demand, presumably because more educated individuals may have more contact with the government (Mocan 2008), and the suppliers of more bribe payments, perhaps due to higher opportunity costs for the educated (Guerrero and Rodríguez-Oreggia 2008).

A separate recent strand of literature has been trying to explain the determinants of the justifiability of corruption. These studies have either shown a decrease in the perceived reasonableness of someone accepting a bribe if the individual is schooled beyond age 16 (Swamy et al 2001) or no correlation at all (Gatti et al. 2003).

Lastly, another strand of literature deals with the quality and determinants of perceived corruption measures (as opposed to experienced corruption measures). Here, education was estimated to be a significant predictor of perceived corruption. In fact, conditional on the actual level of corruption, those with a greater level of schooling are more likely to report higher perception of corruption – and at a high magnitude too: one additional year of schooling means an individual is 5 to 7 percentage points more likely to report perception of corruption (Olken 2009). Donchev and Ujhelyi (2013) are cur-

rently studying the same topic and found so far that one additional level of education (primary, secondary or higher) adds around 1 point of perceived corruption in a 12-point scale.

3. Conceptual framework – A model of bribery

Following Ryvkin and Serra (2012), take a society where private citizens and public officials have the option of engaging in corrupt deals. Suppose these deals involve the payment of a bribe by the citizen in exchange for the provision of an illegal service, for instance the facilitation of a permit or annulment of a fine. In order to decide the amount b the service is worth, the citizen and the official will place sealed bids (b_c and b_o) in a traditional double auction with one seller (the official) and one buyer (the citizen). If they can meet in a range of bribe values, simultaneously not too low for the official and not too high for the citizen, negotiation will take place. This negotiation will depend on the relative bargaining power k of each party, such that the final bribe b will be an average of both bids weighted by k: $b = kb_c + (1-k)b_o$, with $0 \leq k \leq 1$.

Most importantly, bids depend on the independent private valuation the individual makes regarding its own costs and benefits. Benefits are assumed to be the monetary advantage the individual gets from the service (y). Costs on the other hand are comprised of two elements: an intrinsic moral cost that the individual may suffer from its corrupt actions and an extrinsic cost equal to the anticipated cost from formal or informal punishments. The latter involves a crucial assumption: the probability of punishment is subject to strategic complementarities, i.e., the fewer people there are acting corruptly, the higher is the likelihood of being caught and sanctioned. Three main reasons support this argument: the costs of searching for a corrupt partner are higher, the

probability of being audited and detected is higher and the probability of being fined once detected is also higher, since that situation may be more difficult to solve with a bribe. In other words, extrinsic costs are determined endogenously by the total proportion of corrupt deals. Formally, total cost of corruption for agent *i* is then defined as: $c_i(x) = a_i + r\,(1 - x)$, where a_i is the moral intrinsic cost, *x* is the proportion of corrupt citizen-official pairs ($0 < x < 1$), and $r\,(1 - x)$ is the expected monetary cost of the sanctions. Note that corruption is costly for any individual, unless he is intrinsically corrupt ($a_i = 0$) and there are no honest citizens and officials ($x = 1$). It follows that the citizen's private valuation v_c will be $v_c = y - a_c - r\,(1 - x)$.

Since the purpose of this study is to investigate the role of education in determining the decision to engage in corruption, we will focus on the private citizen's valuation, rather than on the official's. We refer the reader to Ryvkin and Serra for more details. With this simple yet powerful framework in place, we turn to the empirical estimation.

4. Data

4.1 Afrobarometer Surveys

To model the propensity to bribe and the extrinsic cost of bribing we used the Afrobarometer Surveys. The Afrobarometer surveys are extensive cross-country surveys that gather information on political, social and economic affairs in sub-Saharan Africa. We use repeated cross-section questionnaires of 20 countries[1] from the 2004, 2005 and 2008 merged rounds of questionnaires, totalling 77 411 observations. The surveys' respondents form a representative sample of the adult population in each country.

[1] Benin, Botswana, Burkina Faso, Cape Verde, Ghana, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mozambique, Namibia, Nigeria, Senegal, South Africa, Tanzania, Uganda, Zambia, Zimbabwe.

The measure of corruption experience is based on the responses to the question: "*In the past year, how often (if ever) have you had to pay a bribe, give a gift, or do a favour to government officials in order to: Get a document or a permit/Get a child into school/Get a household service (like piped water, electricity, or phone)*[2]*/ Cross a border (like a customs or immigration post)/Avoid a problem with the police (like passing a checkpoint or avoiding a fine or arrest)/Get medicine or medical attention/Anything else?"* The responses are 0=Never, 1=Once or Twice, 2=A Few Times, 3=Often, and include Don't Know, Refused to Answer, and Missing.

For all rounds, the following question is also available for five of the seven categories mentioned above: "*How many of the following people do you think are involved in corruption, or haven't you heard enough about them to say: Government officials/Teachers and school administrators/Border officials (e.g., customs and immigration)/Police/Health workers?*" Answers can be 0=None, 1=Some of them, 2=Most of them, 3=All of them, Don't Know, Refused to Answer, Missing. This question is here taken as the measure for the extrinsic cost of bribing, since, as explained in section 3, the (perceived) level of corruption in society (corrupt pairs) helps determine the decision to engage in or abstain from corruption.

Finally, the Afrobarometer surveys include individual characteristics of the respondents such as age, gender, employment status, living conditions, occupation, and religion, which will be used in the regressions below. Responses "don't know", "refused to answer", "did not experience this in past year" and missing values were omitted from

[2] This variable aggregates two similar yet slightly different questions: "Get a household service (like piped water, electricity, or phone)" (asked in round 2 and 3) and "Get water or sanitation services" (asked in round 4).

all estimations. The occupation and religion variables were recoded to have a smaller number of categories (see appendix 3).

4.2 World Values Surveys

To find a measure that reflects the intrinsic cost of bribing we turned to the World Values Surveys (WVS). These were compiled by the World Values Survey Association, a non-profit organization based in Sweden, composed of a worldwide network of social scientists. The purpose of their work is to collect information on the values and attitudes of people across the globe. An effort was made to have nationally representative samples in each country. We will make use of 5 waves of aggregated data covering the period from 1981 to 2007 and 87 countries[3] from all continents. Besides hundreds of other topics, the surveys ask respondents about their religion and morale, namely on how justified they think certain social behaviours are. Our question of interest is on the justifiability of bribery and reads: "*Please tell me for each of the following statements whether you think it can always be justified, never be justified, or something in between, using this card: Someone accepting a bribe in the course of their duties*". It presents a scale from 1 (never justifiable) to 10 (always justifiable), as well as Don´t know, No

[3] Albania, Algeria, Andorra, Azerbaijan, Argentina, Australia, Bangladesh, Armenia Bosnia and Herzegovina, Brazil, Bulgaria, Belarus, Canada, Chile, China, Taiwan, Colombia, Croatia, Cyprus, Czech Republic, Dominican Republic, El Salvador, Ethiopia, Estonia, Finland, France, Georgia, Germany, Ghana, Guatemala, Hong Kong, Hungary, India, Indonesia, Iran, Iraq, Israel, Italy, Japan, Jordan, South Korea, Kyrgyzstan, Latvia, Lithuania, Malaysia, Mali, Mexico, Moldova, Morocco, Netherlands, New Zealand, Nigeria, Norway, Pakistan, Peru, Philippines, Poland, Puerto Rico, Romania, Russian Federation, Rwanda, Saudi Arabia, Singapore, Slovakia, Vietnam, Slovenia, South Africa, Zimbabwe, Spain, Sweden, Switzerland, Thailand, Trinidad and Tobago, Turkey, Uganda, Ukraine, Macedonia, Egypt, Great Britain, Tanzania, United States, Burkina Faso, Uruguay, Venezuela, Serbia and Montenegro, Zambia, and Serbia.

answer, Not applicable, Not asked in survey and Missing/Unknown. This question is a proxy for the individual's intrinsic cost of bribing.

Lastly, the WVS surveys include the same individual characteristics as the Afrobarometer surveys (age, gender, employment status, living conditions, occupation, religion), which will be used to explain corruption justifiability below. Responses "don't know", "not asked in survey", "not applicable", "no answer" and "missing" were not considered for estimations. Employment status, occupation and religion were re-coded to have a fewer number of categories (see appendix 3).

4.3 Other data

Information on the origin of legal systems draws from La Porta et al.'s (1999) dataset for "The Quality of Government". Data on the level of democracy for each country varies by year and ranges from -10 (strongly autocratic) to +10 (strongly democratic). It comes from "Polity IV: Regime Authority Characteristics and Transitions Datasets", a database put together by researchers from the Centre for Systematic Peace on the basis of an assessment of each country's elections on the grounds of competitiveness, openness and level of participation. Data on GDP per capita at PPP 2005 constant prices was gathered from Penn World Tables. Moreover, information on exports as a percentage of GDP comes from the World Bank Development Indicators. Last but not least, in one model specification, an index was used to control for country-level corruption – the Control of Corruption Indicator from the Worldwide Governance Indicators (WGI) Project. This indicator is meant to quantitatively measure the level to which public powers are used for personal profit, both at a micro level (petty corruption) and macro level (grand corruption and "capture" of the state by elites and lobbies). It is built upon the

opinions of citizens, companies and experts from private, public and NGO sectors over the quality of governance, and compiled from a great number of sources, including surveys of households and firms (such as the Afrobarometer surveys), NGOs, commercial business information providers, and public sector organizations. We refer the reader to Kauffman (2011) for more details.

5. Estimation strategy

The discussion in Section 3 suggests there are at least three possible channels of influence regarding a person's decision to engage in bribery. The first channel is through the perception of surrounding corruption. The more people are engaged in it, the lower are the briber's costs of searching and expected cost of sanctions, and so the lower is the extrinsic cost and greater the propensity to perform bribery. A second channel of influence regards the individual's moral cost from acting corruptly. The more tolerable to bribery, the lower his intrinsic moral cost and again the greater the propensity to undergo bribery. Lastly, an influence on the choice to bribe or not is certainly the benefits coming from such decision.

One can think that education affects all three channels. Indeed, it is possible that it changes an individual's perception of corruption. It can also change the desirability of corruption, if more educated people are more aware of their rights and their role as citizens or have higher earning capacity. Lastly, education can influence someone's decision to engage in bribery by changing his benefits, specifically the monetary rewards.

Thus, the estimation strategy consists on the following: the main question of interest is in defining the role of an individual's education in his decision to engage or abstain from bribery. In order to model that, and in light of our theoretical model, we will

first evaluate the role of education in determining the perception of corruption (extrinsic cost). Then, the same will be done for the inner desirability of corruption (intrinsic cost). Finally, we will observe the impact of education on the decision to pay a bribe. Overall, three estimations must occur:

$$COR_{ij} = f(X_{ij}, C_j)$$

$$PER_{ij} = f(X_{ij}, C_j)$$

$$JUST_{ij} = f(X_{ij}, C_j)$$

Where COR_{ij} is corruption experience of the ith individual in country *j*, PER_{ij} depicts perception of corruption, $JUST_{ij}$ represents inner desirability or justifiability of corruption for the individual, X_{ij} outlines the personal characteristics of the individual and C_j represents characteristics of country *j*. Measures for X_{ij} and C_j, are proposed below, following the suggestions of the literature.

5.1. Individual explanatory variables

The propensity to pay a bribe is assumed to depend on the respondent's: education level, age, gender, employment status, present living conditions or income, occupational sector (primary, secondary, tertiary or inactive) and religion. Young, educated, employed individuals may be better at recognizing opportunities for corruption. More educated persons might also have better knowledge about corruption, since they may be more aware of the actions of government and hence be better equipped to analyse the degree of corruption. Males, on the other hand, are expected to engage more frequently in bribing, since in most countries and particularly in developing economies they display higher labour participation rates and because they have a greater tolerance for illegal activity (Swamy et al. 2001). Lastly, persons working in a given economic sector

may be more at hazard of being confronted with a bribery situation, while those who profess certain religions may have a belief system more (or less) compatible with bribery.

The outcomes on perception of corruption and justifiability of corruption are explained with the same set of demographic characteristics.

5.2. Country explanatory variables

Besides individual-specific factors, it is likely that peoples' thoughts regarding bribery are affected by macroeconomic circumstances. For these macro-level determinants of corruption, we turn to two extensive studies on the topic. Treisman (2000) compiles a good overview of many current theories on the determinants of corruption. Among other aspects, Treisman points out that corruption is expected to be lower, for instance, in countries with a particular preoccupation for the procedural aspects of the law and property rights, a trademark value of the British legal system. Hence, dummy variables were added for British, French, Socialist, German and Scandinavian legal system origins. Moreover, rich, democratic countries are expected to have lower levels of corruption. Therefore, the level of democracy and a measure of economic development (GDP per capita) is added to the model. Ades and Di Tella (1999) advocate that in countries endowed with sizeable amounts of natural resources there is greater opportunity for rent-seeking behaviour by corrupt officials who allocate the rights to such resources. Therefore, the model controls for exports as a percentage of GDP. All outcomes are explained with the help of these country characteristics.

6. Results

There are two samples for this exercise. Tables 1 and 2 in appendix 1 provide the definitions and descriptive statistics for all variables, as well as their sources. The highest mean frequency of bribes occurs in the medical sector, to obtain medicines or medical attention (0.28 from 0 to 3), while the lowest mean frequencies are payments to cross a border (0.14) and for 'anything else' (0.04). The mean responses regarding "perception of corruption" indicate the groups most perceived to be involved in corruption are: police (mean 1.62 in a scale from 0 to 3), border officials (1.59), government officials (1.4), health workers (1.04) and school workers (0.93). Lastly, the average respondent of the WVS felt corruption is not justifiable (mean 1.77 in a scale from 1=never justifiable to 10=always justifiable). The mean level of schooling is 3.1 in a scale from 0 to 9 in the Afrobarometer surveys and 4,4 in the WVS in a scale from 1 to 8.

Tables 3, 4 and 5 assess the direct role of education on bribe propensity. Tables 6 and 7 examine the extrinsic cost. Finally, table 8 presents the specifications for the intrinsic cost. Though all dependent variables are ordinal categorical, Ordinary Least Squares estimation was chosen for simplicity. However, Probit and Ordered Probit models are also estimated for robustness. As it turns out, the estimation method does not change the majority of coefficient signs or their statistical significance, including for education.

A. Bribery and education

Table 3 explains the great decision: to bribe or not to bribe – and if so, how frequently. The dependent variable is payment of bribes as described in section 4. Again, the first column presents the benchmark model, while the second omits the occupation

dummies and the third omits the country dummies. The final two columns present estimates of the first specification using Probit and Ordered Probit models. In order to check the robustness of the previous results, table 4 reproduces the first model of table 3 for other types of bribery, namely regarding schools, household services, borders, the police, health workers and a broad category named "anything else". The interpretation of the latter category is not straightforward, but it is possible that some respondents might have felt more at ease not naming exactly where their corruption experience occurred. Table 5 complements table 4 by displaying regressions that include, where possible, the extrinsic cost as a predictor variable, in order to assess the influence coming directly from this channel on the decision to be corrupt.

The results reported in table 3 show that individuals with some level of education, as opposed to none, are more likely to have paid bribes for documents or permits. This result is robust across estimation methods. The magnitude of the effect seems to be greater the higher the level of education. According to the Probit results, individuals with the highest level of education (post-graduates) are about 14.5 percentage points more likely to have paid a bribe, while individuals with the lowest level of education (informal schooling) are only 4.4 percentage points more likely of the same. Removing the occupation dummies and country dummies did not improve the goodness of fit of the model and it did not change the sign of any coefficient. As for other significant regressors, being a female is estimated to decrease the likelihood of having paid a bribe, as does living in better conditions. Being employed, working on the secondary or tertiary sectors, or living in a democracy all increase significantly the chance of paying bribes. Having a British originated legal system has opposing effects.

The results from table 4 confirm the above findings, while showing how they vary across different sectors. The pattern of positive significant education coefficients increasing in magnitude with the level of education of the individual, seen above in corruption regarding documents, is also observed in illicit payments to policemen, border officials, household service providers and school workers. However, many coefficients lose significance once the extrinsic cost (perception of corruption) is added as a regressor in table 5. This might be an indication of the strength of this channel, as will be discussed in the following section. In the medical sector, though, education coefficients are either not significant or significant and negative, contrary to our general finding. Particularly, having informal schooling as opposed to no schooling seems to decrease the frequency of bribe payments to a health worker by 1 to 1.25 percent. Other types of corruption (the last column specification) are not well explained by our regressors, apart from religion and some macroeconomic indicators, possibly due to this being a mixed category. As for the explanatory variables, age and GDP per capita continue to have an insignificant effect on corrupt behaviour. Being a woman significantly reduces the frequency of bribes (between -0.25 percent and -2 percent), as do better living conditions. The remaining macro indicators (legal system, democracy and exports) have conflicting coefficients signs. Finally, a one unit increase in the perception of corruption, i.e. a decrease in the extrinsic cost, has a highly significant positive influence on bribe frequency, between 1.25 percent to 4.5 percent (table 8).

B. Extrinsic cost (perception of corruption)

In table 6 the dependent variable is perception of corruption as defined in section 4, i.e., the amount of corruption each individual thinks or knows there is in the country. In

particular, the question chosen was the perception of corruption among government officials, to proxy for corruption in the obtainment of documents or permits. The same set of regressors as before was used. However, a control of "real" (as opposed to perceived) corruption was added in column 2, named *nation corruption*. This was done to assess the respondent's perceptions of corruption, holding his probable experience constant. It was represented by a country-level corruption index called the Worldwide Governance Indicator Control of Corruption Indicator (see section 4.3). Controlling for the nation's corruption level did not increase the goodness of fit of the model nor changed any coefficient on individual characteristics, in OLS, Probit or Ordered Probit, so it was not added in the model of table 7. Column 3 estimates the first specification without controlling for occupation with the purpose of using more observations (an extra 22 884), since the fourth round of surveys did not include this question. Column 4 tests once more the benchmark model without country dummies. Finally, the last two columns estimate the same model by Probit and Ordered Probit. As before, a binary variable was computed by merging categories from the dependent variable (*Perception_gov01*). To check the robustness of the previous findings, measures of different types of corruption experience are presented. Table 7 presents the first column from table 6 which explains corruption perceptions about government officials, and perceptions regarding teachers and school administrators, border officials, police officials and health workers (the survey does not include data for household service providers and 'anything else').

The results reported in the first column of table 6 indicate that having an education increases the perception of corruption among government officials for individuals with some secondary schooling or above. This effect increases as the level of education in-

creases. Probit marginal effects point to an increase in the probability of perceiving corruption as high as 14.12 percentage points for respondents with university degrees. As regards the other individual characteristics, age displays a small negative effect, women report less corruption, being employed or inactive (unemployed, housewife, student, retired, disabled, never had a job) has no statistical effect, but if one has a job then working in the secondary or tertiary sectors increases the feeling of corruption. Additionally, better living conditions decrease perception. As for macro indicators, GDP per capita has a null effect, a higher share of exports increases the respondents' perception of corruption and stronger democracies decrease it. The country-level corruption index (WGI) is in line with the respondents opinions, since a 1-unit index increase (an improvement in the control of corruption) is associated with a 0.33 decrease in perceived corruption, in a scale from 0 to 3 (or -8.25 percent).

This picture hardly changes in table 7 for other types of bribery. Corrupt behaviour involving teachers and school administrators, border officials and police is more perceived if the person as some secondary school education or higher. The magnitude of change in the answer peaks for university students or graduates. Yet, perceived bribery in the health sector is not significantly explained by education, apart from a positive effect for people with post-secondary qualifications or some university education. The previous analysis for age, gender, employment status, living conditions and occupation holds. Exports and level of democracy present conflicting signs.

C. Intrinsic cost (justifiability of corruption)

Last but not least, table 8 presents the dependent variable *justifiability of corruption* as defined in section 4. This question dealt with the respondent's opinion about some-

one accepting a bribe. In our theoretical framework, each player's intrinsic cost is randomly assigned by nature, which moves first in the game. However, we will assume a full set of individual and country regressors to explain it. The first specification includes year dummy variables to account for macroeconomic shocks that may have affected all variables, and country dummies to control for unobserved characteristics that may vary between countries. Country-clustered standard errors are computed assuming the fact that some variables vary at the country-level, despite the unit of observation being each individual. The first column depicts the coefficients and clustered standard errors of a model with our benchmark specification. The second column displays the same model but not controlling for country-specific effects. Lastly, the third and fourth columns test the benchmark model with Probit and Ordered Probit estimation, where marginal effects and clustered standard errors are presented. Naturally, to use the Probit method the dependent categorical variable was collapsed into a binary variable (*justifiable01*).

The results reported in table 8 demonstrate that having at least a complete elementary education contributes to decreasing a person's justifiability of corruption, i.e. increasing the moral intrinsic cost. The effect is significant at a 1 percent and 5 percent significance levels, across estimation methods, and it is higher for the highest levels of education, secondary school and university, reaching a probability of finding corruption 'never justifiable' as high as 6.6 percentage points, for people with some university training. Age tends to decrease the desirability of corruption, as does being a female, a housewife (as opposed to being employed full-time) and having medium income (but not high). On the other hand, unemployment seems to increase the legitimacy of bribery to the individual's eyes. As for country characteristics, GDP per capita has no effect, an increase in exports decreases justifiability, living in a country with a Socialist (in

comparison to a British or Scandinavian) legal system is estimated to increase one's justifiability of bribery, while a Germanic legal system does the opposite. The results of the impact of personal characteristics without controlling for country specific effects are very similar to those reported in the benchmark regression.

7. Interpretation of findings and concluding remarks

This study uses two microlevel datasets to examine the impact of education on one's propensity to be corrupt, which is defined as having offered a bribe, a gift or a favour to government officials, in order to obtain a document or a permit, a child into school, a household service (such as water, electricity or telephone), medicines or medical attention, to cross a border, or to avoid a problem with the police. In order to perform this assessment, the theoretical framework of Ryvkin and Serra (2012) was used which pointed to two questions: how does one's decision to bribe depend on an intrinsic and an extrinsic cost? The proxy for the former was the respondent's justifiability of corruption, while the latter was measured using people's perceptions of corruption about government workers, teachers, border officials, policemen and health workers. The datasets used feature surveys of 257 597 respondents from 87 countries and 77 411 respondents from 20 African countries.

Our framework theory suggests that lower costs of bribing should increase bribery and indeed such an argument is supported by the results. Firstly, our estimates point to an increase in schooling having a mixed effect, simultaneously increasing the intrinsic cost and decreasing the extrinsic cost. However, the estimates also indicate that more education leads to more bribery. Furthermore, though education may be channelling benefits or other types of costs, we observe that including the extrinsic cost in our

regression decreases the significance of education as a predictor for bribery across sectors. This indicates us that the direct channel of effects of education was weakened. Thus, it seems one's intrinsic cost is overshadowed by the extrinsic cost. Overall, the findings suggest a sort of micro-macro paradox, similar to the one found in aid effectiveness. Briefly, this paradox consists on the finding that aid-effectiveness is high at the project level, but low at the macro level (Mosley 1986). In our case, at the macro-level there is evidence of negative correlation between education and corruption, but at the individual-level we find the opposite. At this point, a caveat must be made, since the bulk of findings was derived from a dataset containing data for developing countries. It is possible that the estimated effects of education differ in developed countries, as Mocan (2008) observed.

Finally, the cross-sector variation of outcomes provides one further insight. The estimates show that education is not a good predictor of the likelihood of bribing health workers (if anything it has a negative impact) and to some extent school workers. One way to explain this would be to think of the discretionary power of the officials in each sector. Permits, border passes and police tickets are all supplied exclusively by the Government. There is no private sector provision of these goods. Household services such as water and electricity are also in most countries provided by publicly owned companies. Health services and schools, on the other hand, usually have private sector counterparts. So it is possible that more educated individuals steer away from corruption (corrupt medical centres in this case) where they can. Another possibility is that respondents do not recognize bribery in health services or schools as such (and prefer to think of it in some other way) or perhaps there is a type of corruption other than bribery

at play[4].

Further research in this topic could investigate the missing link in this story: how education changes one's benefits from corruption. It could examine as well the presence of other types of costs. Further investigation could also gather micro-level data that enables direct comparison of the extrinsic and intrinsic costs, since for the purpose of this research these were drawn from two different datasets.

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[4] Here it would be useful to compare corruption in the form of bribes with other types of corruption. Data for Cape Verde and São Tomé and Príncipe from Pedro Vicente (2010) indicate the need for influence peddling to obtain medical attention is higher than the need for bribes (mean answers 4.92 and 3.51 respectively, in a scale from 1=no need to 7=necessary). The reverse is true for public schools (2.71 versus 3.11). Regarding the police the need to know someone is greater (4.78 vs. 3.93), while to get a permit or document the needs are basically equal (4.42 vs. 4.08).

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Appendix 1 – Regression outputs

Table 1
Descriptive statistics – Afrobarometer Survey

Variable name	Definition	Source	Observations	Mean (Standard Deviation)
Individual characteristics				
Bribe_document	In the past year, how often (if ever) have you had to pay a bribe, give a gift, or do a favour to government officials in order to: [0=Never, 1=Once or Twice, 2=A Few Times, 3=Often] Get a document or a permit?	A	63508	0,2672 (0,6723)
Bribe_school	Get a child into school?	A	42578	0,1513 (0,5177)
Bribe_household services	Get a household service (like piped water, electricity, or phone)?	A	61617	0,1763 (0,5784)
Bribe_border	Cross a border	A	21324	0,1438 (0,5437)
Bribe_police	Avoid a problem with the police (like passing a checkpoint or avoiding a fine or arrest)?	A	63015	0,2604 (0,7024)
Bribe_health	Get medicine or medical attention?	A	20549	0,2752 (0,688)
Bribe_any	Anything else?	A	22390	0,0359 (0,2595)
Perception_gov	How many of the following people do you think are involved in corruption, or haven't you heard enough about them to say: [0=None, 1=Some of them, 2=Most of them, 3=All of them] Government officials?	A	43491	1,4008 (0,8187)
Perception_school	Teachers and school administrators?	A	42305	0,9316 (0,8204)
Perception_border	Border officials (e.g., customs and immigration)?	A	18085	1,5909 (0,9097)
Perception_police	Police?	A	67430	1,621 (0,9085)
Perception_health	Health workers?	A	21639	1,0353 (0,8574)
Bribe_document01	Dummy variable (=1) if the respondent answered 1, 2 or 3 in *bribe_document*.	A	63508	0,1675 (0,3734)
Perception_gov01	Dummy variable (=1) if the respondent answered 1, 2 or 3 in *perception_gov*.	A	43491	0,8907 (0,312)
Education	What is the highest level of education you have completed? No formal schooling (value 0), Informal schooling (including Koranic schooling) (1), Some primary schooling (2), Primary school completed (3), Some secondary school/ High school (4), Secondary school completed/High school (5), Post-secondary qualifications other than university e.g. a diploma or degree from a technical/polytechnic/college (6), Some university (7), University completed (8), Post-graduate (9).	A	77203	3,1399 (2,0064)
Age	Years of age of the respondent	A	76155	36,4179 (14,6906)

Female	Dummy variable (=1) if the respondent is female.	A	77411	1,5 (0,5)
Employment	Do you have a job that pays a cash income? Is it full-time or part-time? And are you presently looking for a job (even if you are presently working)? Recoded: Unemployed (value 1), part-time employed (2), full-time employed (3).	A	77053	0,564 (0,8191)
Income	In general, how would you describe: Your own present living conditions? 1=Very bad to 5=Very good.	A	77068	2,6373 (1,1769)
Occupation	What is your main occupation? If unemployed, retired, or disabled, what was your last main occupation? Recoded: Primary sector (value 1), secondary sector (2), tertiary sector (3), inactive population (4).	A	48963	2,4417 (1,2448)
Religion	What is your religion, if any? Recoded question: None (value 0), Muslim (1), Christian – catholic (2), Christian – protestant (3), Christian – other (4), Dutch reformed church (5), Traditional (6), Hindu (7), agnostic (8), atheist (9), Jehovah's witness (10), other (11).	A	77020	2,6999 (1,9945)
Country characteristics				
British legal origin	Respondent country's legal system origin: British (otherwise French).	B	77411	1,7256 (0,4462)
GDPpc	PPP Converted GDP Per Capita (Chain Series) at 2005 constant prices.	C	77411	2291,673 (2531,137)
Exports	Exports of goods and services in percentage of GDP.	D	77411	32,1314 (10,6108)
Democracy	Combined Polity Score – ranges from +10 (strongly democratic) to -10 (strongly autocratic).	E	77411	4,655 (4,2515)
Nation corruption	Worldwide Governance Indicator – Control of Corruption. Ranges from approximately -2,5 (weak) to 2,5 (strong) performance.	F	77411	-0,3641 (0,605)
Country dummies	Country where the respondent took the survey (20 countries).	A	77411	11,6446 (5,5718)
Round	Year the respondent took the survey: 2004 (value 2), 2005 (3), 2008 (4).	A	77411	3,0441 (0,8185)

The descriptive statistics pertain to a maximum of 77 411 observations. A: Afrobarometer Round II, III and IV, 16- 18- and 20-country merged datasets. B: La Porta *et al.*, "The Quality of Government", Journal of Law, Economics and Organization, April 1999. C: Alan Heston, Robert Summers and Bettina Aten, Penn World Table Version 7.1, Center for International Comparisons of Production, Income and Prices at the University of Pennsylvania, July 2012. D: World Development Indicators, The World Bank. Accessed in 26/04/2013. E: Marshall, Monty G. and Keith Jaggers. 2011. Polity IV Project: Political Regime Characteristics and Transitions, 1800-2011. Version p4v2011 [Computer File]. College Park, MD: Center for International Development and Conflict Management, University of Maryland. F: Worldwide Governance Indicators. Accessed in 11/04/2013.

Table 2

Descriptive statistics – World Values Survey

Variable name	Definition	Source	Observations	Mean (Standard Deviation)
Individual characteristics				
Justifiable	Please tell me for each of the following statements whether you think it can always be justified, never be justified, or something in between, using this card: Someone accepting a bribe in the course of their duties (1= Never justifiable to 10=Always justifiable)	G	243824	1,7729 (1,7929)
Justifiable01	Dummy variable (=1) if the respondent's answer to *justifiable* is between 6 and 10 inclusive (=0 otherwise).	G	243824	0,0552 (0,2283)
Education	What is the highest educational level that you have attained? Inadequately completed elementary education (value 1), completed (compulsory) elementary education (2), incomplete secondary school: technical/vocational type/(compulsory) elementary education or basic vocational qualification (3), complete secondary school: technical/vocational type/secondary, intermediate vocational qualification (4), incomplete secondary: university-preparatory type/secondary, intermediate general qualification (5), complete secondary: university-preparatory type/full secondary, maturity level certificate (6), some university without degree/higher education - lower-level tertiary certificate (7), university with degree/higher education - upper-level tertiary certificate (8).	G	230283	4,4076 (2,3346)
Age	Years of age of the respondent	G	247978	40,3126 (15,9141)
Female	Dummy variable (=1) if the respondent is female.	G	252941	1,5155 (0,4998)
Employment	Are you employed now or not? If yes: About how many hours a week? If more than one job: only for the main job. Full time (value 1), part time (2), self-employed (3), retired (4), housewife (5), students (6), unemployed (7), other (8).	G	246625	3,3531 (2,1941)
Income	Here is a scale of incomes. We would like to know in what group your household is, counting all wages, salaries, pensions and other incomes that come in. Just give the letter of the group your household falls into, before taxes and other deductions. Low (value 1), medium (2), high (3).	G	52060	1,9364 (0,7889)
Occupation	In which profession/occupation do you or did you work? If more than one job, the main job? What is/was your job there? Recoded: Primary sector (value 1), secondary sector (2), tertiary sector (3), inactive population (4).	G	200507	2,547 (0,9879)
Religion	Do you belong to a religious denomination? In case you do, answer which one.	G	230759	2,5521 (2,2917)

	Recoded question: None (value 0), Muslim (1), Christian – catholic (2), Christian – protestant (3), Christian – other (4), Buddhist (5), Traditional (6), Hindu (7), agnostic (8), atheist (9), Jehovah's witness (10), other (11).			
Country characteristics				
Legal origin	Respondent country's legal system origin: British (value 1), French (2), Socialist (3), Germanic (4), or Scandinavian (5).	B	252597	2,218 (1,0062)
GDPpc	PPP Converted GDP Per Capita (Chain Series) at 2005 constant prices.	C	248914	11698,61 (11460,18)
Exports	Exports of goods and services in percentage of GDP.	D	239911	32,406 (23,9008)
Democracy	Combined Polity Score – ranges from +10 (strongly democratic) to -10 (strongly autocratic).	E	244092	4,9322 (5,6302)
Country dummies	Country where the respondent took the survey (87 countries).	G	257597	462,9702 (266,7871)
Year dummies	Year the respondent took the survey: 1981, 1982, 1984, 1989, 1990, 1991, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008.	G	257597	1999,414 (6,35)

The descriptive statistics pertain to a maximum of 257 597 observations. G: WORLD VALUES SURVEY 1981-2008 OFFICIAL AGGREGATE v.20090901, 2009. World Values Survey Association. Aggregate File Producer: ASEP/JDS, Madrid. B, C D, E: see table 1.

Table 3

Bribes paid: Document or permit

	(1) OLS	(2) OLS	(3) OLS	(4) Probit	(5) Ordered Probit
Informal schooling	0,053***	0,064***	0,066***	0,044***	-0,039***
	(0,020)	(0,023)	(0,023)	(0,011)	(0,010)
Some primary	0,072***	0,062***	0,043*	0,046***	-0,043***
	(0,013)	(0,015)	(0,022)	(0,007)	(0,008)
Primary	0,068***	0,073***	0,056**	0,050***	-0,045***
	(0,013)	(0,012)	(0,022)	(0,009)	(0,009)
Some secondary	0,099***	0,105***	0,086***	0,066***	-0,061***
	(0,015)	(0,012)	(0,020)	(0,009)	(0,009)
Secondary	0,133***	0,136***	0,150***	0,088***	-0,081***
	(0,023)	(0,022)	(0,027)	(0,011)	(0,011)
Technical	0,186***	0,217***	0,199***	0,110***	-0,101***
	(0,033)	(0,034)	(0,038)	(0,012)	(0,012)
Some university	0,216***	0,251***	0,236***	0,106***	-0,110***
	(0,049)	(0,044)	(0,057)	(0,020)	(0,019)
University	0,285***	0,305***	0,293***	0,142***	-0,138***
	(0,063)	(0,060)	(0,070)	(0,022)	(0,020)
Post-graduate	0,292***	0,267***	0,301***	0,145***	-0,141***
	(0,081)	(0,077)	(0,083)	(0,025)	(0,026)
Age	-0,001	-0,001*	-0,001*	-0,001**	0,001**
	(0,001)	(0,000)	(0,001)	(0,000)	(0,000)
Female	-0,078***	-0,083***	-0,077***	-0,042***	0,042***
	(0,015)	(0,014)	(0,016)	(0,006)	(0,006)
Part-time	0,038***	0,053***	0,059***	0,026***	-0,021***
	(0,014)	(0,011)	(0,019)	(0,008)	(0,007)
Full-time	0,021**	0,029***	0,038**	0,014**	-0,013**
	(0,009)	(0,010)	(0,018)	(0,006)	(0,005)
Fairly bad	-0,073***	-0,039***	-0,056**	-0,034***	0,036***
	(0,020)	(0,015)	(0,024)	(0,008)	(0,008)
Neither good nor bad	-0,111***	-0,079***	-0,074**	-0,047***	0,052***
	(0,027)	(0,020)	(0,032)	(0,009)	(0,010)
Fairly good	-0,098***	-0,063***	-0,048*	-0,046***	0,047***
	(0,024)	(0,016)	(0,028)	(0,008)	(0,009)
Very good	-0,074***	-0,050**	-0,033	-0,035***	0,034***
	(0,023)	(0,022)	(0,031)	(0,010)	(0,010)
Secondary sector	0,039**		0,037***	0,023***	-0,020***
	(0,017)		(0,013)	(0,008)	(0,008)
Tertiary sector	0,042***		0,035***	0,022***	-0,022***
	(0,009)		(0,009)	(0,005)	(0,005)
Inactive	-0,005		-0,004	-0,004	0,006
	(0,012)		(0,013)	(0,007)	(0,007)
British	-1,691***	0,192	0,011	0,212***	-0,219***
	(0,548)	(0,150)	(0,097)	(0,051)	(0,052)
GDP per capita	0,000**	-0,000	-0,000***	0,000	-0,000*

	(0,000)	(0,000)	(0,000)	(0,000)	(0,000)
Exports	0,002	0,006**	-0,000	-0,003	0,001
	(0,005)	(0,002)	(0,003)	(0,002)	(0,002)
Democracy	0,032***	0,035***	0,007	0,018***	-0,016***
	(0,006)	(0,011)	(0,010)	(0,003)	(0,003)
Constant	-0,109	0,056	0,277**	-1,455***	
	(0,127)	(0,087)	(0,111)	(0,311)	
Religion dummies	Yes	Yes	Yes	Yes	Yes
Round dummies	Yes	Yes	Yes	Yes	Yes
Country dummies	Yes	Yes	No	Yes	Yes
Adjusted R^2	0,068	0,065	0,039	0,100	0,072
Log-likelihood	-	-	-	-15 857,23	-22 091,18
Number of observations	40 311	61 590	40 311	40 311	40 311

Note: Standard errors, in parentheses, have been adjusted to account for clustering within countries. Marginal effects are reported for Probit and Ordered Probit models. *Significant at 10 percent; **significant at 5 percent; ***significant at 1 percent. The reference groups for the dummy variables are: no formal schooling, male, unemployed, very bad, primary sector, and French legal system. The coefficients on the variable *religion* are available upon request from the author.

Table 4

	Bribes paid						
	Document or permit	**School**	**Household services**	**Border**	**Police**	**Health**	**Anything else**
Informal schooling	0,053***	0,002	0,023	0,070*	0,062***	-0,038*	0,018**
	(0,020)	(0,014)	(0,020)	(0,036)	(0,012)	(0,022)	(0,008)
Some primary	0,072***	0,025***	0,048**	0,053**	0,020*	-0,020	0,002
	(0,013)	(0,007)	(0,020)	(0,026)	(0,010)	(0,017)	(0,007)
Primary	0,068***	0,026**	0,043**	0,054**	0,036***	-0,000	0,007*
	(0,013)	(0,013)	(0,019)	(0,022)	(0,012)	(0,013)	(0,004)
Some secondary	0,099***	0,025**	0,063***	0,059***	0,061***	-0,011	0,007
	(0,015)	(0,011)	(0,020)	(0,022)	(0,014)	(0,020)	(0,006)
Secondary	0,133***	0,027**	0,073***	0,097***	0,097***	-0,017	0,014**
	(0,023)	(0,012)	(0,021)	(0,031)	(0,029)	(0,024)	(0,007)
Technical	0,186***	0,055***	0,131***	0,117***	0,114***	-0,025	0,010
	(0,033)	(0,016)	(0,041)	(0,022)	(0,029)	(0,027)	(0,010)
Some university	0,216***	0,068***	0,171***	0,157***	0,193***	0,053	-0,003
	(0,049)	(0,025)	(0,053)	(0,045)	(0,042)	(0,040)	(0,010)
University	0,285***	0,083***	0,191***	0,169***	0,203***	-0,029	-0,003
	(0,063)	(0,032)	(0,060)	(0,041)	(0,073)	(0,040)	(0,011)
Post-graduate	0,292***	0,105*	0,227***	0,087	0,259***	0,110	0,065
	(0,081)	(0,055)	(0,074)	(0,068)	(0,037)	(0,089)	(0,051)
Age	-0,001	0,000	0,000	-0,000	-0,001*	-0,001***	-0,000***
	(0,001)	(0,000)	(0,000)	(0,000)	(0,001)	(0,000)	(0,000)
Female	-0,078***	-0,015**	-0,030***	-0,046***	-0,110***	-0,019	-0,009**
	(0,015)	(0,007)	(0,008)	(0,013)	(0,027)	(0,015)	(0,004)
Part-time	0,038***	0,045***	0,044***	0,014	0,044***	0,031*	0,009
	(0,014)	(0,012)	(0,015)	(0,020)	(0,012)	(0,017)	(0,007)
Full-time	0,021**	0,016**	0,026***	0,006	0,026*	-0,002	0,003
	(0,009)	(0,007)	(0,008)	(0,016)	(0,016)	(0,019)	(0,010)
Fairly bad	-0,073***	-0,037***	-0,033***	-0,015	-0,054**	-0,072***	-0,003
	(0,020)	(0,012)	(0,011)	(0,019)	(0,023)	(0,028)	(0,007)
Neither good nor bad	-0,111***	-0,057***	-0,068***	-0,018	-0,100***	-0,142***	-0,004
	(0,027)	(0,014)	(0,018)	(0,014)	(0,034)	(0,041)	(0,007)
Fairly good	-0,098***	-0,051***	-0,044***	-0,017	-0,092***	-0,144***	-0,011
	(0,024)	(0,019)	(0,014)	(0,019)	(0,035)	(0,036)	(0,007)
Very good	-0,074***	-0,012	0,002	-0,015	-0,068*	-0,063	-0,019***
	(0,023)	(0,013)	(0,026)	(0,025)	(0,038)	(0,055)	(0,007)
Secondary sector	0,039**	0,017	0,025	-0,001	0,049**	0,006	0,012
	(0,017)	(0,020)	(0,020)	(0,021)	(0,024)	(0,022)	(0,011)
Tertiary sector	0,042***	0,010	0,040***	0,036***	0,050***	-0,003	0,012

	(0,009)	(0,007)	(0,010)	(0,012)	(0,015)	(0,014)	(0,008)
Inactive	-0,005	0,001	0,019	-0,019	-0,007	-0,019	-0,001
	(0,012)	(0,011)	(0,012)	(0,012)	(0,016)	(0,026)	(0,005)
British	-1,691***	0,141***	0,094**	0,075***	0,349***	0,062***	0,032***
	(0,548)	(0,025)	(0,043)	(0,008)	(0,033)	(0,021)	(0,003)
GDP per capita	0,000**	0,000*	0,000	-0,000***	0,000**	0,000***	-0,000***
	(0,000)	(0,000)	(0,000)	(0,000)	(0,000)	(0,000)	(0,000)
Exports	0,002	0,001	0,005	0,001***	0,003	-0,007***	-0,001***
	(0,005)	(0,003)	(0,005)	(0,000)	(0,007)	(0,001)	(0,000)
Democracy	0,032***	0,018***	0,005	-0,006***	0,016**	-0,006***	0,001
	(0,006)	(0,004)	(0,007)	(0,001)	(0,008)	(0,001)	(0,001)
Constant	-0,109	-0,132	-0,194	0,110**	-0,275	0,496***	0,048***
	(0,127)	(0,102)	(0,160)	(0,046)	(0,194)	(0,049)	(0,017)
Religion dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Round dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0,068	0,058	0,066	0,031	0,088	0,077	0,010
Number of observations	40 311	40 642	38 842	20 285	40 229	19 857	21 095

Note: Standard errors, in parentheses, have been adjusted to account for clustering within countries. *Significant at 10 percent; **significant at 5 percent; ***significant at 1 percent. The reference groups for the dummy variables are: no formal schooling, male, unemployed, very bad, primary sector, and French legal system. The coefficients on the variable *religion* are available upon request from the author.

Table 5

	Bribes paid				
	Document or permit	**School**	**Border**	**Police**	**Health**
Perception_Gov	0,045***				
	(0,012)				
Perception_School		0,069***			
		(0,011)			
Perception_Border			0,057***		
			(0,013)		
Perception_Police				0,097***	
				(0,015)	
Perception_Health					0,175***
					(0,036)
Informal schooling	0,058*	-0,009	0,085*	0,053***	-0,051**
	(0,030)	(0,016)	(0,048)	(0,016)	(0,023)
Some primary	0,080***	0,016	0,059	0,011	-0,035**
	(0,016)	(0,010)	(0,036)	(0,014)	(0,017)
Primary	0,081***	0,014	0,043	0,024*	-0,027*
	(0,020)	(0,012)	(0,030)	(0,012)	(0,016)
Some secondary	0,106***	0,008	0,045	0,045***	-0,038*
	(0,018)	(0,012)	(0,031)	(0,017)	(0,022)
Secondary	0,157***	0,010	0,084***	0,075**	-0,044*
	(0,023)	(0,012)	(0,031)	(0,030)	(0,026)
Technical	0,160***	0,039***	0,104***	0,090***	-0,066**
	(0,029)	(0,015)	(0,026)	(0,032)	(0,032)
Some university	0,225***	0,044*	0,144***	0,173***	0,012
	(0,046)	(0,026)	(0,051)	(0,041)	(0,046)
University	0,249***	0,066**	0,139***	0,170**	-0,060
	(0,053)	(0,032)	(0,037)	(0,072)	(0,041)
Post-graduate	0,336***	0,090	0,060	0,234***	0,080
	(0,128)	(0,060)	(0,065)	(0,039)	(0,094)
Age	0,000	0,001	-0,000	-0,001	-0,001**
	(0,001)	(0,000)	(0,001)	(0,001)	(0,001)
Female	-0,067***	-0,016**	-0,042***	-0,109***	-0,011
	(0,017)	(0,008)	(0,014)	(0,026)	(0,014)
Part-time	0,057***	0,046***	0,013	0,048***	0,035*
	(0,017)	(0,013)	(0,025)	(0,013)	(0,018)
Full-time	0,036**	0,017**	-0,003	0,024	0,001
	(0,016)	(0,009)	(0,021)	(0,016)	(0,020)
Fairly bad	-0,043**	-0,037***	-0,011	-0,048**	-0,064**
	(0,021)	(0,012)	(0,023)	(0,023)	(0,026)
Neither good nor bad	-0,073***	-0,058***	-0,021	-0,095***	-0,127***
	(0,027)	(0,015)	(0,015)	(0,035)	(0,037)
Fairly good	-0,058**	-0,051***	-0,014	-0,075**	-0,122***
	(0,025)	(0,019)	(0,023)	(0,033)	(0,031)
Very good	-0,044*	-0,013	-0,003	-0,049	-0,029
	(0,024)	(0,009)	(0,031)	(0,040)	(0,054)

Secondary sector	0,065***	0,015	0,003	0,047*	-0,021
	(0,021)	(0,022)	(0,025)	(0,026)	(0,025)
Tertiary sector	0,056***	0,008	0,043***	0,046***	-0,024
	(0,012)	(0,009)	(0,014)	(0,014)	(0,015)
Inactive	-0,000	-0,000	-0,027**	-0,014	-0,028
	(0,016)	(0,013)	(0,013)	(0,018)	(0,029)
British	-0,194***	-0,630	0,078***	-2,083*	0,072***
	(0,010)	(0,416)	(0,009)	(1,196)	(0,022)
GDP per capita	-0,000**	0,000	-0,000***	0,000*	0,000*
	(0,000)	(0,000)	(0,000)	(0,000)	(0,000)
Exports	0,004***	0,001	0,001**	0,006	-0,005***
	(0,001)	(0,004)	(0,000)	(0,007)	(0,001)
Democracy	-0,032***	0,022***	-0,006***	0,019**	-0,009***
	(0,001)	(0,005)	(0,001)	(0,008)	(0,001)
Constant	0,199***	-0,205	0,072	-0,590***	0,283***
	(0,044)	(0,131)	(0,058)	(0,224)	(0,058)
Religion dummies	Yes	Yes	Yes	Yes	Yes
Round dummies	Yes	Yes	Yes	Yes	Yes
Country dummies	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0,070	0,067	0,037	0,096	0,118
Number of observations	19 291	35 022	16 105	35 614	17 164

Note: Standard errors, in parentheses, have been adjusted to account for clustering within countries. *Significant at 10 percent; **significant at 5 percent; ***significant at 1 percent. The reference groups for the dummy variables are: no formal schooling, male, unemployed, very bad, primary sector, and French legal system. The coefficients on the variable *religion* are available upon request from the author.

Table 6

Perceived corruption among government officials

	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) Probit	(6) Ordered Probit
Informal schooling	-0,033	-0,033	0,025	-0,030	0,009	0,007
	(0,039)	(0,039)	(0,022)	(0,031)	(0,014)	(0,010)
Some primary	0,016	0,016	0,026	-0,037	0,005	-0,004
	(0,028)	(0,028)	(0,024)	(0,035)	(0,010)	(0,007)
Primary	0,047	0,047	0,050	-0,054	0,024**	-0,012
	(0,037)	(0,037)	(0,031)	(0,050)	(0,012)	(0,009)
Some secondary	0,093***	0,093***	0,113***	0,031	0,045***	-0,025***
	(0,034)	(0,034)	(0,027)	(0,033)	(0,014)	(0,009)
Secondary	0,162***	0,162***	0,176***	0,138***	0,069***	-0,042***
	(0,040)	(0,040)	(0,032)	(0,035)	(0,019)	(0,011)
Technical	0,151***	0,151***	0,178***	0,117***	0,082***	-0,040***
	(0,045)	(0,045)	(0,039)	(0,043)	(0,024)	(0,012)
Some university	0,180**	0,180**	0,261***	0,193***	0,071**	-0,047**
	(0,089)	(0,089)	(0,051)	(0,066)	(0,033)	(0,023)
University	0,214***	0,214***	0,251***	0,219***	0,141***	-0,057***
	(0,042)	(0,042)	(0,036)	(0,055)	(0,025)	(0,011)
Post-graduate	0,306***	0,306***	0,284***	0,280***	0,109***	-0,078***
	(0,087)	(0,087)	(0,082)	(0,079)	(0,029)	(0,022)
Age	-0,001*	-0,001*	-0,001**	-0,002***	-0,000	0,000*
	(0,001)	(0,001)	(0,000)	(0,001)	(0,000)	(0,000)
Female	-0,039**	-0,039**	-0,033***	-0,038**	-0,008*	0,010**
	(0,017)	(0,017)	(0,011)	(0,018)	(0,004)	(0,004)
Part-time	-0,010	-0,010	0,005	-0,040	-0,005	0,003
	(0,020)	(0,020)	(0,014)	(0,031)	(0,009)	(0,005)
Full-time	0,018	0,018	0,016	-0,001	-0,002	-0,004
	(0,023)	(0,023)	(0,015)	(0,032)	(0,007)	(0,006)
Fairly bad	-0,119***	-0,119***	-0,097***	-0,126***	0,008	0,028***
	(0,029)	(0,029)	(0,016)	(0,025)	(0,009)	(0,007)
Neither good nor bad	-0,108***	-0,108***	-0,100***	-0,165***	0,015	0,025**
	(0,040)	(0,040)	(0,022)	(0,038)	(0,011)	(0,010)
Fairly good	-0,216***	-0,216***	-0,200***	-0,226***	-0,028***	0,053***
	(0,047)	(0,047)	(0,025)	(0,044)	(0,011)	(0,011)
Very good	-0,236***	-0,236***	-0,218***	-0,243***	-0,052***	0,059***
	(0,064)	(0,064)	(0,042)	(0,051)	(0,015)	(0,015)
Secondary sector	0,074**	0,074**		0,099***	0,043***	-0,020**
	(0,030)	(0,030)		(0,031)	(0,015)	(0,007)
Tertiary sector	0,044***	0,044***		0,050***	0,019***	-0,011***
	(0,016)	(0,016)		(0,017)	(0,006)	(0,004)
Inactive	0,013	0,013		-0,002	0,005	-0,003
	(0,027)	(0,027)		(0,034)	(0,010)	(0,007)
British	0,079***	0,271***	-1,280	0,106	-0,122***	0,154***
	(0,012)	(0,013)	(0,949)	(0,112)	(0,011)	(0,010)

GDP per capita	0,000***	0,000***	0,000	-0,000	0,001***	-0,001***
	(0,000)	(0,000)	(0,000)	(0,000)	(0,000)	(0,000)
Exports	0,013***	0,003***	0,006	0,002	0,022***	-0,015***
	(0,001)	(0,000)	(0,006)	(0,004)	(0,001)	(0,001)
Democracy	-0,053***	-0,029***	-0,025	-0,025***	-0,080***	0,061***
	(0,002)	(0,001)	(0,031)	(0,008)	(0,003)	(0,003)
Nation corruption		-0,333***				
		(0,024)				
Constant	0,908***	1,021***	1,425***	1,454***	-6,158***	
	(0,089)	(0,078)	(0,195)	(0,147)	(0,299)	
Religion dummies	Yes	Yes	Yes	Yes	Yes	Yes
Round dummies	Yes	Yes	Yes	Yes	Yes	Yes
Country dummies	Yes	Yes	Yes	No	Yes	Yes
Adjusted R^2	0,092	0,092	0,080	0,050	0,083	0,042
Log-likelihood					-6 257,840	-22 144,508
Number of observations	19 453	19 453	42 337	19 453	19 453	19 453

Note: Standard errors, in parentheses, have been adjusted to account for clustering within countries. Marginal effects are reported for Probit and Ordered Probit models. *Significant at 10 percent; **significant at 5 percent; ***significant at 1 percent. The reference groups for the dummy variables are: no formal schooling, male, unemployed, very bad, primary sector, and French legal system. The coefficients on the variable *religion* are available upon request from the author.

Table 7

	Perceived corruption				
	Government officials	**School**	**Border**	**Police**	**Health**
Informal schooling	-0,033	0,048**	-0,029	-0,027	-0,034
	(0,039)	(0,022)	(0,043)	(0,023)	(0,028)
Some primary	0,016	0,051***	0,087***	0,030*	-0,013
	(0,028)	(0,019)	(0,026)	(0,018)	(0,031)
Primary	0,047	0,044**	0,061	0,033	0,008
	(0,037)	(0,021)	(0,038)	(0,022)	(0,029)
Some secondary	0,093***	0,092***	0,137***	0,095***	0,031
	(0,034)	(0,022)	(0,040)	(0,034)	(0,033)
Secondary	0,162***	0,131***	0,191***	0,144***	0,064
	(0,040)	(0,042)	(0,041)	(0,037)	(0,044)
Technical	0,151***	0,144***	0,192***	0,152***	0,113***
	(0,045)	(0,037)	(0,049)	(0,052)	(0,032)
Some university	0,180**	0,228***	0,255***	0,181***	0,170***
	(0,089)	(0,059)	(0,089)	(0,062)	(0,056)
University	0,214***	0,156***	0,313***	0,195***	0,081
	(0,042)	(0,052)	(0,060)	(0,046)	(0,054)
Post-graduate	0,306***	0,187***	0,206***	0,225***	0,146*
	(0,087)	(0,054)	(0,080)	(0,064)	(0,079)
Age	-0,001*	-0,001***	0,000	-0,002***	-0,001
	(0,001)	(0,001)	(0,001)	(0,000)	(0,001)
Female	-0,039**	-0,018**	-0,043**	-0,051***	-0,015
	(0,017)	(0,008)	(0,018)	(0,010)	(0,012)
Part-time	-0,010	0,032	0,011	0,005	0,029
	(0,020)	(0,019)	(0,022)	(0,022)	(0,028)
Full-time	0,018	-0,007	0,043*	0,003	-0,002
	(0,023)	(0,020)	(0,026)	(0,025)	(0,026)
Fairly bad	-0,119***	-0,052***	-0,115***	-0,115***	-0,055**
	(0,029)	(0,019)	(0,024)	(0,028)	(0,025)
Neither good nor bad	-0,108***	-0,075***	-0,078**	-0,141***	-0,145***
	(0,040)	(0,027)	(0,039)	(0,038)	(0,037)
Fairly good	-0,216***	-0,068**	-0,209***	-0,208***	-0,158***
	(0,047)	(0,027)	(0,032)	(0,039)	(0,036)
Very good	-0,236***	-0,051*	-0,270***	-0,250***	-0,194***
	(0,064)	(0,027)	(0,057)	(0,040)	(0,040)
Secondary sector	0,074**	0,068***	0,102***	0,079***	0,090***
	(0,030)	(0,020)	(0,036)	(0,023)	(0,024)
Tertiary sector	0,044***	0,051***	0,061***	0,059***	0,083***
	(0,016)	(0,014)	(0,020)	(0,013)	(0,015)
Inactive	0,013	0,068***	0,041*	0,030*	0,045*
	(0,027)	(0,019)	(0,022)	(0,016)	(0,025)
British	0,079***	-1,866**	0,134***	-0,653***	0,046***
	(0,012)	(0,794)	(0,015)	(0,076)	(0,014)
GDP per capita	0,000***	0,000	-0,000***	0,000	0,000**
	(0,000)	(0,000)	(0,000)	(0,000)	(0,000)

Exports	0,013***	0,022***	-0,017***	0,002	-0,015***
	(0,001)	(0,007)	(0,001)	(0,010)	(0,000)
Democracy	-0,053***	-0,037***	0,023***	-0,046***	0,016***
	(0,002)	(0,013)	(0,004)	(0,015)	(0,002)
Constant	0,908***	0,601***	2,060***	2,144***	1,353***
	(0,089)	(0,171)	(0,104)	(0,395)	(0,058)
Religion dummies	Yes	Yes	Yes	Yes	Yes
Round dummies	Yes	Yes	Yes	Yes	Yes
Country dummies	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	0,092	0,079	0,100	0,118	0,050
Number of observations	19 453	40 638	17 199	41 666	20 957

Note: Standard errors, in parentheses, have been adjusted to account for clustering within countries. *Significant at 10 percent; **significant at 5 percent; ***significant at 1 percent. The reference groups for the dummy variables are: no formal schooling, male, unemployed, very bad, primary sector, and French legal system. The coefficients on the variable *religion* are available upon request from the author.

Table 8

	Justifiability of corruption			
	(1)	**(2)**	**(3)**	**(4)**
	OLS	**OLS**	**Probit**	**Ordered Probit**
Primary	-0,096***	-0,127***	-0,008**	0,029***
	(0,037)	(0,042)	(0,004)	(0,006)
Incomplete techincal	-0,074	-0,176**	-0,006	0,024**
	(0,051)	(0,075)	(0,005)	(0,010)
Technical	-0,210***	-0,229***	-0,020***	0,052***
	(0,060)	(0,068)	(0,005)	(0,010)
Incomplete secondary	-0,145**	-0,134	-0,016**	0,039***
	(0,072)	(0,095)	(0,006)	(0,013)
Secondary	-0,218***	-0,192**	-0,020***	0,055***
	(0,062)	(0,075)	(0,005)	(0,010)
Some university	-0,269***	-0,207**	-0,024***	0,066***
	(0,080)	(0,081)	(0,006)	(0,014)
University	-0,278***	-0,245**	-0,022**	0,058***
	(0,087)	(0,100)	(0,009)	(0,014)
Age	-0,007***	-0,007***	-0,000***	0,002***
	(0,001)	(0,001)	(0,000)	(0,000)
Female	-0,064***	-0,060***	-0,002	0,016***
	(0,017)	(0,019)	(0,002)	(0,004)
Part-time	0,095*	0,103*	0,004	-0,019*
	(0,050)	(0,057)	(0,004)	(0,010)
Self-employed	-0,042	0,006	0,001	0,010
	(0,045)	(0,055)	(0,004)	(0,010)
Retired	-0,024	-0,075	-0,011	-0,002
	(0,050)	(0,056)	(0,008)	(0,012)
Housewife	-0,133***	-0,175***	-0,015***	0,025***
	(0,041)	(0,054)	(0,005)	(0,008)
Students	-0,015	-0,058	-0,003	0,007
	(0,053)	(0,068)	(0,005)	(0,012)
Unemployed	0,123**	0,075	0,012***	-0,016
	(0,052)	(0,052)	(0,004)	(0,011)
Other	-0,125**	-0,364***	-0,013	0,040***
	(0,055)	(0,067)	(0,011)	(0,014)
Medium	-0,105**	-0,119***	-0,011***	0,019**
	(0,044)	(0,043)	(0,004)	(0,008)
High	-0,080	-0,070	-0,010	0,019
	(0,066)	(0,074)	(0,006)	(0,012)
Secondary sector	-0,017	-0,031	-0,001	0,005
	(0,041)	(0,046)	(0,004)	(0,008)
Tertiary sector	0,006	-0,039	0,000	-0,002
	(0,046)	(0,072)	(0,005)	(0,010)
Inactive	0,088*	0,100**	0,008*	-0,013
	(0,045)	(0,050)	(0,005)	(0,010)
French	-0,378***	0,068	0,015***	-0,139***
	(0,049)	(0,145)	(0,003)	(0,008)

Socialist	0,317***	0,078	0,042***	-0,180***
	(0,052)	(0,185)	(0,006)	(0,012)
Germanic	-0,473***	-0,035	-0,011*	0,069***
	(0,072)	(0,219)	(0,006)	(0,012)
GDP per capita	0,000	-0,000	-0,000***	0,000***
	(0,000)	(0,000)	(0,000)	(0,000)
Exports	-0,003***	0,005	-0,002***	0,011***
	(0,000)	(0,003)	(0,000)	(0,001)
Democracy	-0,019***	0,048***	0,005***	-0,025***
	(0,007)	(0,011)	(0,001)	(0,001)
Constant	2,376***	2,913***	-1,143***	
	(0,167)	(0,311)	(0,132)	
Religion dummies	Yes	Yes	Yes	Yes
Round dummies	Yes	Yes	Yes	Yes
Country dummies	Yes	No	Yes	Yes
Adjusted R^2	0,092	0,052	0,111	0,072
Log-likelihood	-72 556,77	-73 390,66	-6 364,13	-31 422,59
Number of observations	38 561	38 561	38 560	38 561

Note: Standard errors, in parentheses, have been adjusted to account for clustering within countries. Marginal effects are reported for Probit and Ordered Probit models. *Significant at 10 percent; **significant at 5 percent; ***significant at 1 percent. The reference groups for the dummy variables are: incomplete primary, male, full-time employed, low income, primary sector and British legal system. The coefficients on the variable *religion* are available upon request from the author.

Appendix 2 – Datasets collection description

World Values Survey

SUMMARY: The series is designed to enable a crossnational comparison of values and norms on a wide variety of topics and to monitor changes in values and attitudes across the globe. This data collection consists of responses from WORLD VALUES SURVEY, 1981-1983 (ICPSR 9309) and WORLD VALUES SURVEY, 1981-1984 AND 1990-1993 (ICPSR 6160), along with data gathered during 1995-1997. Over 60 surveys representing more than 50 countries participated in the 1995-1997 study. The 1995 questionnaire retained those items that gave the most significant results from the 1981 and 1990 surveys. New topics pertaining to technology, social relationships, and parent-child relationships were added. Broad topics covered were work, personal finances, the economy, politics, allocation of resources, contemporary social issues, technology and its impact on society, and traditional values. Respondents were asked whether the following acts were ever justifiable: suicide, cheating on taxes, lying, euthanasia, divorce, and abortion. Respondents were also asked about the groups and associations they belonged to, which ones they worked for voluntarily, the groups they would not want as neighbors, their general state of health, and whether they felt they had free choice and control over their lives. A wide range of items was included on the meaning and purpose of life, such as respondents' views on the value of scientific advances, the demarcation of good and evil, and religious behavior and beliefs. Respondents were also queried about their attitudes toward religion, morality, politics, sexual freedom, marriage, single parenting, child-rearing, and the importance of work, family, politics, and religion in their lives. Questions relating to work included what financial and social benefits were most important to them in a job, the pride they took in their work, if they were happy with their current position, and their views on owner/state/employee management of business. Questions pertaining to the stability of the world economy, solutions for poverty, and whether respondents were happy with their financial situation

were also asked. Respondents' opinions of various forms of political action, the most important aims for their countries, confidence in various civil and governmental institutions, and whether they would fight in a war for their country were also solicited. Demographic information includes family income, number of people residing in the home, size of locality, home ownership, region of residence, occupation of the head of household, and the respondent's age, sex,

occupation, education, religion, religiosity, political party and union membership, and left-right political self-placement.

UNIVERSE: Adults 18 and over in the mass publics of 60 societies representing more than 50 different countries around the world.

SAMPLING: Both national random and quota sampling were used. The populations of India, China, and Nigeria, as well as rural areas and the illiterate population, were undersampled.

NOTE: (1) In the data for 1981-1984 and 1990-1993, the wild codes were changed to undocumented codes. (2) The title of the series was changed by the principal investigators with the addition of the 1995-1997 data. (3) The codebook is provided as an Portable Document Format (PDF) file. The PDF file format was developed by Adobe Systems Incorporated and can be accessed using PDF reader software, such as the Adobe Acrobat Reader. Information on how to obtain a copy of the Acrobat Reader is provided through the ICPSR Website on the Internet.

EXTENT OF COLLECTION: 1 data file + machine-readable documentation (PDF) + SAS data definition statements + SPSS data definition statements

EXTENT OF PROCESSING: MDATA.PR/ DDEF.ICPSR/ REFORM.DATA/ REFORM.DOC/ UNDOCCHK.ICPSR

DATA FORMAT: Logical Record Length with SAS and SPSS data definition statements

File Structure: rectangular

Cases: 168,482

Variables: 251

Record Length: 352

Records Per Case: 1

Ronald Inglehart et al. *WORLD VALUES SURVEYS AND EUROPEAN VALUES SURVEYS, 1981-1984, 1990-1993, AND 1995-1997* (ICPSR 2790)

Afrobarometer

The Afrobarometer is a comparative series of public attitude surveys, covering up to 20 African countries in Round 4 (2008). Based on representative national samples, the surveys assess citizen attitudes to democracy, markets, and civil society, among other topics.

Together with National Partners in each country, the Afrobarometer is a joint enterprise of the Institute for Democracy in South Africa (Idasa), the Center for Democratic Development (CDDGhana), and the Institute for Empirical Research in Political Economy (IREEP), with additional technical support provided by Michigan State University (MSU) and the University of Cape Town (UCT). (…)

Approach to Data Collection

Although other research methods were used during the project design,1 the Afrobarometer relies on personal interviews to obtain information from individual Respondents. The same questionnaire, which contains identical or functionally equivalent items, is applied to every Respondent in each country. Because questions are standardized, responses can be compared across countries and over time. In the personal interview, the Interviewer goes to a randomly selected household and interviews a randomly selected individual from that household. The Interviewer asks this Respondent a series of questions in a face-to-face situation and in a language of the Respondent's choice. The Interviewer records the responses (i.e., the answers) provided by the Respondent. Advantages of this approach are that the survey response rate is usually high; the Respondents have the opportunity to clarify their answers; and, by aggregating responses, we are able to make inferences about public opinion. On this last point, it should be noted that Afrobarometer surveys are based on national probability samples. As a consequence, the aggregated results are

representative of larger groups. At the national level, Afrobarometer sample sizes are large enough to make inferences about all voting age citizens with an average margin of sampling error of no more than plus or minus 2.8 percent at a 95 percent confidence level (with a sample size of 1200).

By the same token, it should be noted that Afrobarometer results cannot be generalized to Sub-Saharan Africa as a whole. Because it is possible to conduct survey research on public opinion only in countries that have undergone a measure of political liberalization, the sample of countries does not include authoritarian regimes or countries embroiled in civil wars. In an effort to be more representative, however, we will now cover at least five francophone countries and two lusophone countries.

Afrobarometer *Round 4 Survey Manual*, compiled by the Afrobarometer Network, February 2007

Appendix 3 – Recoded variables

The following presents the recoding assumptions to form the variable *occupation* and *religion* in the Afrobarometer dataset and the World Values Survey dataset.

Afrobarometer occupation	New occupation category
Agent of NGO	Tertiary
Anything	Anything/other
Apprentice	Secondary
Armed Services/Police/ Security Personnel	Tertiary
Artisan/skilled manual worker formal sector	Secondary
Artisan/skilled manual worker informal sector	Secondary
Artisan/Skilled manual worker: not sure formal or informal	Secondary
Artisan/skilled, formal sector	Secondary
Artisan/skilled, informal sector	Secondary
Business person	Tertiary
Business person (own business, 10 or more)	Tertiary
Business person (own business, less than 10)	Tertiary
Business person (works for others)	Tertiary
Catering/cook/chef	Tertiary
Clergy/Imam/Pastor	Tertiary
Clergyman/priest/paster	Tertiary
Clerical Worker	Tertiary
Commercial farmer (mainly for sale)	Primary
Disabled	Inactive
Domestic worker/ maid	Tertiary
Domestic Worker/Maid/Char/Househelp	Tertiary
Don't know	Don't know
Driver	Tertiary
Eleveur/cattle breeder	Primary
Employee at NGO	Tertiary
Farm worker	Primary
Farmer (produces mainly for sale)	Primary
Farmer (produces only for home consumption)	Primary
Farmer (produces surplus for sale)	Primary
Fisherman	Primary
Government worker	Tertiary
Herdboy	Primary
Housewife/ work in household	Inactive
Local leader/chief/headman	Tertiary
Marine/sailor	Tertiary
Miner	Primary
Missing	Missing
Motor cyclist/okada man	Tertiary
Musician	Tertiary
Never had a job	Inactive
Other	Anything/other

Pastoralist	Tertiary
Pastoralist/herder/raise livestock	Primary
Peasant farmer (own consumption and sale)	Primary
Police/ Security/ Military	Tertiary
Politician	Tertiary
Priest	Tertiary
Professional worker	Tertiary
Professional Worker (e.g., lawyer, accountant, nurse, etc.)	Tertiary
Refused	Refused
Religious leader	Tertiary
Retail worker	Tertiary
Retired	Inactive
Sells home made beer	Tertiary
Skilled textile factory worker	Secondary
Student	Inactive
Subsistence farmer (own consumption only)	Primary
Supervisor/Foreman	Tertiary
Teacher	Tertiary
Trader/Hawker/Vendor	Tertiary
Traditional Healer	Tertiary
Unemployed	Inactive
Unskilled manual in the formal sector	Primary
Unskilled manual worker in the informal sector	Primary
Unskilled manual worker: not sure formal or informal	Primary
Unskilled manual, formal sector	Primary
Unskilled manual, informal sector	Primary
Unskilled textile factory worker	Primary
Youth corper/national service	Tertiary

World Values Survey occupation	**New occupation category**
Agricultural worker	Primary
Employer/manager of establishment w. less than 100 employed	Tertiary
Employer/manager of establishment w. less than 500 employed	Tertiary
Employer/manager of establishment with 10 or more employed	Tertiary
Employer/manager of establishment with 100 or more employed	Tertiary
Employer/manager of establishment with 500 or more employed	Tertiary
Employer/manager of establishment with less than 10 employed	Tertiary
Farmer: has own farm	Primary
Foreman and supervisor	Tertiary
Junior level non manual	Tertiary
Member of armed forces	Tertiary
Middle level non-manual office worker	Tertiary
Never had a job	Inactive
Non manual -office worker	Tertiary
Other	Anything/other
Professional worker	Tertiary
Semi-skilled manual worker	Secondary

Skilled manual	Secondary
Supervisory non manual -office worker	Tertiary
Unskilled manual	Primary

Afrobarometer religion	**New religion**
African Abraham	Other
African Independent Church	Christian - other
Agnostic (Do not know if there is a God)	Agnostic
AME	Christian - protestant
Anglican	Christian - other
Apostolic	Other
Apostolic Faith/New_United	Other
Assembly of God	Christian - other
Atheist (Do not believe in a God)	Atheist
Bahai	Other
Baptist	Christian - other
Brotherhood Olumba Olumba	Christian - other
Calviniste (FJKM)	Christian - protestant
Catholic	Christian - catholic
Christian (general)	Christian - other
Christian (general/other)	Christian - other
Christian only	Christian - other
Church of Christ	Christian - other
Confrarie de la Hamadiya (Hamalite)	Muslim
Confrarie de la Trabiya	Muslim
Confrarie de la Wahhabiya (Wahhabite)	Muslim
Confrarie des Laynes(brotherhood)	Muslim
Coptic	Other
Don't know	Don't know
Dutch Church	Dutch reformed church
Dutch Reform	Dutch reformed church
Dutch Reform/NG	Dutch reformed church
Dutch Reformed	Dutch reformed church
Dutch Reformed (e.g. NGK,NHK,GK,Mission,APK,URC)	Dutch reformed church
Evangelical	Christian - protestant
Hindu	Hindu
Igreja Jesus Cristo dos ultima dias	Christian - protestant
Igreja Universal so Reino de Deus	Christian - other
Independent	Other
IPCC	Christian - other
Islam	Muslim
Ismaeli	Other
Ismaili Muslim (Shi'a)	Muslim
Ithnashiri Muslim (Shi'a)	Muslim
Izala	Other

Jehovah's Witness	Jehovah's Witness
Jesosy Mamonjy	Other
Khodja Muslim (Shi'a)	Muslim
Last Church/Reform	Other
Lutheran	Christian - other
Memon Muslim (Shi'a)	Muslim
Mennonite	Christian - protestant
Methodist	Christian - protestant
Missing	Missing
Mormon	Christian - protestant
Mouridiya Brotherhood	Muslim
Muslim (general)	Muslim
Muslim (general/other)	Muslim
Muslim General	Muslim
Muslim khadre	Muslim
Muslim Layne	Muslim
Muslim Mouride	Muslim
Muslim only	Muslim
Muslim Tijane	Muslim
Muslim, Shiite	Muslim
Muslim, Sunni	Muslim
Neo traditional religion (Munigiki, Tent of Living God)	Traditional
None	None
Nova Apostolica	Christian - protestant
Orthodox	Christian - other
Other	Other
Other Christian (Moravian)	Christian - protestant
Other Churches	Other
Other Muslim	Muslim
Pentecostal	Christian - other
Presbyterian	Christian - protestant
Protestant	Christian - protestant
Protestant (Evangelical/Pentecostal)	Christian - protestant
Protestant (Mainstream)	Christian - protestant
protestant flm	Christian - protestant
Qadiriya Brotherhood	Muslim
Quaker	Christian - other
Quaker/Friends	Christian - other
Racionalism Cristo	Christian - other
Racionalismo Cristao/Christian Rationalism	Christian - other
Reformed Church in Zimbabwe	Dutch reformed church
Refused	Refused
Roman Catholic	Christian - catholic
Salvation Army	Christian - other
Seventh Day Adventist	Christian - protestant
Seventh Day Adventist/Mormon	Christian - protestant
Shia only	Muslim
Sidya	Other

St. John	Other
Sukuti	Other
Sunni Muslim	Muslim
Sunni only	Muslim
Tijaniya Brotherhood	Muslim
Traditional religion	Traditional
Traditional/ethnic religion	Traditional
UCCSA	Christian - protestant
Universal Church	Other
VGK	Christian - protestant
ZCC	Christian - other
Zion	Christian - other
Zionist Christian Church	Christian - other

World Values Survey religion	**New religion**
Missing	Missing
Not asked in survey	Missing
Not applicable	Missing
No answer	Missing
Don’t know	Missing
aglipayan	Christian - protestant
Al-hadis	Muslim
Alliance	Other
Ancestral worshipping	Other
Anglican	Christian - other
Armenian apostolic church	Christian - other
Assembly of god	Christian - other
Baha’i	Other
Baptist	Christian - other
Born again	Christian - other
brgy. sang birhen	Christian - other
Buddhist	Buddhist
C & s celestial	Christian - other
Cao dai	Other
Catholic: doesn¥t follow rules	Christian - catholic
Charismatic	Christian - other
Christian	Christian - other
Christian fellowship	Christian - other
Christian reform	Christian - protestant
Church of christ / church of christ / church of christ of latter-day saints	Christian - protestant
Confucianism	Other
Druse	Muslim
El shaddai	Christian - other
Essid	Other
Evangelical	Christian - protestant
Faith in god	Other

Filipinista	Christian - protestant
Free church/non denominational church	Christian - protestant
Greek catholic	Christian - catholic
Gregorian	Christian - other
Hindu	Hindu
Hoa hao	Buddhist
Hussite	Christian - other
Iglesia ni cristo (inc)	Christian - other
Independent african church (e.g. zcc, shembe, etc.)	Christian - other
Independent church	Other
Israelita nuevo pacto universal (frepap)	Christian - other
Jain	Other
Jehovah witnesses	Jehovah's Witness
Jesus is lord (jil)	Christian - other
Jesus miracle crusade	Christian - other
Jew	Other
Ka-a elica	Other
Lutheran	Christian - other
Mennonite	Christian - protestant
Methodists	Christian - protestant
Mita	Christian - other
Mormon	Christian - protestant
Muslim	Muslim
Native	Traditional
New testament christ/biblist	Christian - other
Orthodox	Christian - other
Other	Other
Other: brasil: espirit,candomblÈ,umbanda,esoterism,occultism	Other
Other: christian com	Other
Other: oriental	Other
Other: philippines (less 0.5%)	Other
Other: taiwan (taoism, protestant fundam., ancient cults)	Other
Paganism	Other
Pentecostal	Christian - other
Presbyterian	Christian - protestant
Protestant	Christian - protestant
Qadiani	Muslim
Roman catholic	Christian - catholic
Rosacruz	Other
Salvation army	Christian - other
Self lealisation fellowship	Other
Seven day adventist	Christian - protestant
Shenism (chinese religion)	Other
Shia	Muslim
Sikh	Other
Sisewiss	Other
Spiritista	Other
Spiritualists	Other

Sunni	Muslim
Tac	Other
Taoist	Other
The church of sweden	Christian - other
The worldwide church of god	Other
Theosofists	Other
Unitarian	Other
United	Other
United church of christ in the philippines (uccp)	Christian - other
Wicca	Other
Zionist	Christian - other
Zoroastrian	Other
Ratana	Other
Ringatu	Christian - other
New apostolic church	Christian - other
Yiguan dao	Other
Daolism	Other