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External contribution – Background paper

Socio-cultural factors affecting corruption and what to do

A study of psychological and other non-economic macro-variables affecting corruption

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1 The Problem and its Background

1.1 Background

The negative consequences of corruption are now well known. To recapitulate some of the problems, corruption has at least the following negative consequences:

1) Economic growth will be reduced because of lower incentive for both foreign and domestic entrepreneurs to invest. Costs for bribes are added to the project cost, and there is always an uncertainty whether officials are able to honour their part of the bargain. Transfers of officials, or shift of political power further make bribes a very uncertain investment;

2) The quality of infrastructure, such as roads, electricity, telephones, etc., as well as public services, is low because low quality materials as well as low quality of work are necessary to provide scope for skim-off. This tends to reduce growth, as all operations and communications are slower and more cumbersome than necessary even in a developing country;

3) Institutional weaknesses are frequently associated with corruption. For instance, in developing countries the law enforcement systems, the judiciary and the police, are poor and corrupt by themselves, which helps corruption;

4) Further, bureaucratic procedure has many flaws. Studying the management time spent at various levels of corruption, Kaufmann (2000) found that there is an almost rectilinear, monotonously rising function of management time spent by bureaucrats as a result of corruption. This is only one of the costs that corruption brings about. Also the cost of capital displays a similar function. The more bribery, the higher is the cost of capital. And finally, if the discretory power of bureaucrats is high, the country is high on the CPI. There is a large amount of often-capricious bureaucratic red tape, which makes corruption thrive. It can hardly be said that corruption alone creates these problems. Rather, corruption interacts with and reinforces the obstacles, and vice versa. Finally, even when the influence of various institutional weaknesses is controlled for, some regression analyses suggest that corruption per se can still be shown to reduce growth.

5) Human costs are high: a) Corruption kills, for example through doctors of either sex who do not operate or treat without a bribe. b) There is systematic corruption in hospitals: you may have to pay for a chamber pot; doctors treat only those who pay; doctors and other medical staff steal medicines to sell or

use in their private clinics; those in charge of dispensaries also steal medicines to resell to patients or to traders; injections may be given with coloured water, by cheating doctors, or the substances having been replaced by caretakers or nurses. c) Corruption also kills through relief that does not reach catastrophe victims or the poor. d) Trafficking is greatly facilitated by corruption;

6) Influx of money tends to increase corruption. Large cash payments of foreign aid, or major investments by foreign companies increase corruption.

Corruption seems to be increasing all over the world. Also less corrupt countries on the Transparency International's CPI list are hit by corporate scandals, cartels, small-scale manipulations among local politicians, and the whole scale in between. Tanzi (1998) gave a long list of reasons why this may just be increased attention from media. However, today it is clear that the frequency as well as the magnitude of corruption has indeed increased. This is the cause of media attention, not vice versa. Treaties against corruption have been adopted in the UN, in OECD, in the EU and the OAS (Organization of American States), and corruption courts and prosecutors are being established everywhere.

A fair portion, maybe half of all corruption research is qualitative. Whatever quantitative research there is, it is almost exclusively done by economists, predominantly employing variables of economy, and in some cases of governance and bureaucracy. Hence, wide areas are never subjected to quantitative research. The present paper is an attempt to somewhat improve on this situation.

1.2 Research questions and problems

One basal question is: When everywhere there are opportunities for corruption, why does not everyone submit to it? Why are some individuals more honest than others? Why are some countries relatively honest and others heavily corrupted? No quantitative research seems to have ever tackled these questions, let alone provided any answers. Results from economic research are lacking, and psychological research into corruption is basically non-existent.

There is no good explanation for *causes* of corruption. Mauro (1998) enumerates as causes trade restrictions, favouritist industrial policies, price controls, government controlled provisions of credit, multiple exchange rate practices, and foreign exchange allocation schemes. Leite and Weidmann (1999) concluded that the extent of corruption depends on natural resource abundance, government policies, and the concentration of bureaucratic power. However, these are not really *causes* but *conditions* that provide opportunities or facilitate corruption. They do not explain the variation in corruption, both among individuals and among countries, or whether also other components influence corruption, such as non-economic factors, may be involved.

Schloss (2000) states: "In the final analysis, corruption is as much a moral as a development issue" (p. 469). Quantitative studies of corruption have primarily involved variables of economy, governance or bureaucracy. So far, quantitative studies of causes and consequences regarding *people* have rarely been made, i.e. of psychological, social, or sociological variables. Further, mostly economic gain has been used as a criterion, for instance in all the principal-agent-type studies. Corrupt gain, however, may be political or corporate power, or various types of nepotism. Although there is a rather extensive literature on political corruption, few *quantitative* studies seem to have been performed. A large number of other types of corruption have been qualitatively described. Again, few have been quantitatively studied. Thus, empirical corruption research is somewhat reductionistic.

In order to try to explain the variation in corruption and honesty among different countries the present study has ventured to look at a wider range of variables than is usually done.

2 Method

2.1 Sample

The sample is biased rather than random, consisting of the 99 countries in the 1999 Transparency International CPI index, which have been chosen out of about 174 possible countries. The CPI indices are easily available on the Internet. The year 1999 was chosen because all other years 1995-2001 had fewer countries, and it is necessary to have as large a population as possible. As the index is "rolling", i. e. continued with relatively small changes from year to year, it matters statistically very little which year is selected. Representativity in some sense is a subordinate question in this study, as we aim at finding a model which is robust regardless of sample type or representativity.

2.2 Variables in the study

2.2.1 Selection of variables

Out of some 65 variables considered for inclusion in the study, 16 were finally selected, 15 numerical for multivariate treatment, and one categorical variable. The rest were discarded on grounds of either metric inconsistencies lack of logical validity, or lack of significant relationships to other important variables. Significant correlations and reasonable metric properties constitute the basis for advanced statistical model building. Examples of discarded variables are budget provisions, which were not always available, birth-, death- and fertility-rates, employment figures, as well as health and education figures. Economic variables, such as real GDP or Per Capita Income, unfortunately failed to qualify, much to our chagrin, mainly because of metric shortcomings. An example of an attempted but discarded variable was the ratio of educational expenditure to military expenditure as a measure of civilisation. However, this failed to show any relationship with any other variable.

The following variables were selected (acronyms used in statistical tables):

01. Corruption: the Transparency International CPI index 1999 for 99 countries (CPI). This is the dependent variable; the rest are the independent variables.
02. Polity IV, ratings of democracy in 950 past and present regimes, 1999 values. (POLNORM).
03. Democracy: a categorisation according to a combination of types and quality of governance. (DEMO). Correlation with DEMO = .797.
04. Real Gross Domestic Product: Freedom House 2000. (GDP).
05. Climate: average temperatures (CLIT), Encyclopaedia Britannica, 1999.
05. Literacy, Encyclopaedic Britannica, 1999. (LIST).
06. Life Expectancy: 1986 World Human Rights Guide (preferred over EB 1999 for perceived better validity). (LIFEX).
07. Political Rights according to Freedom House 2000. (POL).
08. Civil Liberties according to Freedom House 2000. (CIV).
09. Total Press Freedom according to Freedom House 2000. Total index was used. (TOTFR).
10. Infant Mortality according to Encyclopaedia Britannica, 1999. (IMR).
11. Household Size, Encyclopaedia Britannica, 1999. (HHS).
12. Population Increase. Encyclopaedia Britannica, 1999. (INCR).
13. Country Risks for Investors. (Int. Country Risk Guide, 1992. (CRCO).
14. Human Rights Risks according to World Human Rights Guide, 1996. (HRIS).
15. Human Development Index 2000 from the UNDP Human Development Report, 2002. (HDI).
16. Religion: majority religion per country according to World Christian Encyclopaedia (Barret, 1982), A new handbook of living religions (Hinnels, 1996), Atlas of the world's religions (Smart 1999), Encyclopaedia Britannica (1999), and Lexicon Universal Encyclopaedia (1989). (RELIG).

2.3 Description and rationale of dependent and independent variables

2.3.1 The dependent variable

The CPI results were converted to stanine (standard nine) scales, where 9 is the most honest value. This means that scores were normalised and the distribution was brought to some similarity with the normal distribution. This was done also with most dependent variables, except in cases of Polity IV and out Democracy categorisation where 5-step normalisation was employed, and Religion with a 6-grade categorisation.

2.3.2 Democracy and related variables

a) We developed a categorisation of Democracy. The 99 countries in the 1999 CPI index were coded for Democracy, utilising a categorisation into five categories, from relatively advanced democracies designated 5, to countries with virtually non-existent democracy designated 1. (DEMO). The distribution was good, i.e. symmetrical and similar to a normal distribution.

b) The Polity IV ratings are published by the University of Maryland and are available on the Internet. This is a set of direct ratings of democracy of 950 existing or previously existing regimes through 1999, in the version used. It is also as far as we know the only direct measurement of democracy published. Low democracy is rated 0, and high is rated 10, i. e. 11 steps. Because of the marked skewedness, the ratings were converted to a more symmetrical 5-step scale, with 5 as the highest level of democracy and 1 lowest. This was not wholly successful, the distribution was too skewed for a good result, but the normalisation improved the intercorrelations with other variables. The adjusted Polity IV variable is called POLNORM. This was included in most statistical analyses in order to have two sets of ratings to enable validation of one against the other. The correlation between POLNORM and DEMO is .797 or approximately 64% of the variance in common, i.e. they to a great extent measure the same thing. Because of better metrical qualities, DEMO was included in the path analysis.

c) Political Rights, Civil Liberty, Press and Broadcasting Freedom, Country Investment Risks, Human Rights Risks, and Human Development Index have been viewed as rather self-evident variables to incorporate, in part in their own rights, but also because one or another selection of these or similar variables have been used in various studies to estimate the degree of democracy in different countries. One of the issues in the present study is to see whether one or more of these variables in fact could constitute a fair assessment of the totality of democracy, another to examine the interrelations between these variables.

The Human Development Index (HDI) was of interest both as a possible indicator of democracy, a possible indicator of honesty, and an indicator of progress. It is a composite index measuring achievement as the average of a number of indicators in three basic dimensions of human development: a) a long and healthy life, b) knowledge and c) a decent standard of living. Each dimension consists of several subdivisions. Thus it is a heterogeneous measure. Metrically, this is not good for advanced statistical methods. Still, it was deemed important to incorporate HDI to try it out.

Those who construct this type of index might consider better to follow basic metric principles. Most indices had to be normalised as the result distributions were skewed or very uneven in their original shape. This is easily rectified through suitable instructions to the graders. These indices are used in many types of study, and one would wish that psychometric experts be consulted in future versions of them.

2.3.3 Population factors

The four variables Life Expectancy, Infant Mortality (IMR), Population Increase and Household size are all associated with poverty/affluence as a watershed between poor and rich countries, and hence between North and South. In the South, life expectancy is considerably lower, IMR is much higher, as is Population Increase, and Household Size is much larger. Thus, they also serve as a watershed between corrupt and less corrupt countries, as well as between countries in various climate zones. Further, they may be seen as

indicators of degree of development. Hence it was of importance to see whether there is a connection from these variables, primarily to corruption and democracy, but also to other variables. Also, the interrelationships between these four variables needed to be examined.

2.3.4 Climate

Climate seems to exert a powerful environmental pressure on human behaviour. Especially a cold climate puts heavy demands on adaptive skills. Skills that are needed to survive in a cold climate are foresight, planning, tenacity, ingenuity in devising tools and technologies for feeding, keeping warm, storing and preserving, among others. For instance, it was recently reported in Nature (Sept. 6, 2001) that humans lived around the Arctic Circle as long back as 39,000 years ago. They hunted for mammoths, manufactured stone tools, and had a high degree of social organisation to sustain their livelihood.

Most of the least corrupt countries also share a cool climatological situation. They are all high-technological and industrious countries. Ellsworth Huntington in several books tried to link climate with human behaviour. His theory was that life in cold and changeable climates has stimulated mental capacity and efficiency more than life in warmer regions. This theory has been criticised as ethnocentric generalisations based on limited data and ignoring contradictory evidence. The fact remains, however, that efficiency seems to be linked to climate, and it may be time to revive Huntington's notion, pending the outcome of the present study.

2.3.5 Coding and analysis of Religion

2.3.5.1 Coding of Religion

The quantitative dominance of the main religion was in most cases taken as the criterion for assigning a religious code, except in two cases where Protestant Ethos was used as criterion. In case of a religion occurring in only one or two countries, it was grouped together with nearly related religions. Thus, out of 9 religions, 6 categories were finally obtained. According to our hypothesis that Protestantism has the greatest influence on minimising corruption, Protestantism was coded 6; the religion closest to Protestantism, i.e. Catholicism, was coded 5, and so on, to traditional (animistic) religions coded 1.

2.3.5.2 Categorical treatment of Religion: Eta analyses against other variables

The useful Eta coefficient was employed for finding the association between the categorical variable of Religion and the other variables, all numerical. It is used when one variable has data on the nominal scale level, and another variable has numerical data. Eta does not assume a linear relationship between the two variables. When squared, Eta explains the proportion of the total variability in the dependent variable that can be accounted for by the independent variable. Thus, Eta gives more of an indication of causality than most other measures of association. If Eta is low, the independent variable cannot have great influence on the dependent variable, and vice versa. Religion is taken as the independent variable, except regarding Religion and Climate, where the latter is taken as independent.

2.3.5.3 Numerical treatment of Religion

All other variables being numerical, it would be profitable to be able to treat religion as a numerical variable. At the suggestion of Van de Geer (1993b, p. 3) numerical treatment of religion was tried. As the coding of Religion in essence constitutes an ordinal scale, the category numbers were taken as values. Hence, Religion, now called Relquant, was included in the multivariate analyses on a trial basis. This turned out surprisingly well. Relquant worked well in Pearson intercorrelations and also in factor analysis. However, it was excluded from the path analysis not to disrupt this rather sensitive modelling.

2.4 Statistical treatment

2.4.1 Initial analyses: intercorrelations and factor analysis

As a first descriptive step, all interrelationships were computed as traditional Pearson product moment coefficients. As several authors have pointed out, regression analysis is not capable of managing more complex interrelationships. For instance, Przeworski and Limongi (1993), looking for evidence of the impact of regime on growth, found that standard regressions failed to yield reliable results on complex issues. Hence, only product moment correlations and factor analysis were computed. These are not reported in the present context, however.

2.4.2 Final analysis: path analysis

As a way to further explore the relationships between the variables, a path analysis of regressions on both manifest and latent variables was performed with the help of the STREAMS 2.51.2 and the LISREL 8.30 softwares. Manifest variables are the actual measurements, while latent variables are second-order variables expressing the variation that a set of manifest variables has in common. LISREL stands for LInear Structural RELations (Jöreskog & Sörbom, 1993). STREAMS stands for Structural Equation Modeling Made Simple, which works together with LISREL and can import data from the SPSS (Statistical Package for the Social Sciences). STREAMS automatically opens the SPSS when a model is being run. The STREAMS facilitates the model building as the LISREL language is somewhat complicated. Path analysis has the advantage of being able to be presented graphically, which facilitates the overview and understanding of complex interrelationships. Path analysis also gives strong causal indications.

According to what Gustafsson and Stahl (1995, p. 7.3) suggest, our model was developed stepwise in an exploratory way, decrementally with regard to manifest variables, i. e. unsuitable variables were successively removed, and incrementally with regard to latent variables, i.e. new assumptions regarding latent variables were made, until a good fit was obtained. There are several criteria for a good fit built into the methodology, as shown in the Results section.

3. Results

3.1 Results of the Path Analysis

In the present paper, in the name of brevity and simplicity matrices of correlation, factor analysis etc. will be skipped and the results will be summarised and presented mainly in the form of the LISREL analysis in Figure 1. Some results of Religion will also be considered. The results for the various criteria turned out extremely well as shown below:

01. All paths on the whole have very strong coefficients;
02. All the t-values for the paths in the model are statistically significant;
03. Chi square in our model is roughly equal to the degrees of freedom, i. e. much below the rule-of-thumb maximum value of twice the number of degrees of freedom. Chi square = 21.86, df = 23; see below;
04. The p value for the Chi-square for goodness of fit in our model is .53, i. e. far from significance. This means that the initial matrix of covariance and the one in the model are not significantly different;
05. RMSEA is a goodness-of-fit measure that yields an estimate of the deviation between the model and the data. In our model the RMSEA is so low that it is not even reported by the software, i. e. a very good result;
06. As there is no RMSEA value to report, there is no measure of significance in our model. In other words, there is no deviation between the initial data and the model. Such good fulfilment of the criteria is not very common.

Consider Figure 1. Four latent variables, which we have called domains, emerged:

1. A General Domain
2. Democracy and Low Corruption (DLC) comprising 2 manifest variables
3. Population Factors comprising 6 manifest variables
4. Freedom Factors comprising 3 manifest variables.

The General Domain, designated G in the circle to the far left, can be seen as a powerful explanatory force constituted of all manifest variables and affecting all manifest variables and some domains. It can be said to express the variation that all latent and manifest variables have in common. Its strongest path is to the Democracy+Low Corruption domain (DLC). This in turn has the strongest path of all, .96 to the manifest variable of Democracy. DLC also has a strong link to CPI (.62)

The General Domain influences all the manifest Population variables with fairly strong pathways, i.e. Household Size (.80), IMR (.70), Literacy (.66), Climate (.47), and Population Increase (.46). G also affects all the Freedom variables with strong paths, Press Freedom (.78), Civil Liberty (.77) and Political Freedom (.67). G further influences CPI with a weak link of .25.

Thus, the Corruption Perception Index (CPI) is influenced from two sources, a weak link from the G Domain of .25 and a strong link from DLC (.62).

Looking at Population Factors, there are substantial links from this domain to all the manifest variables. There is a very strong link of .80 to Population Increase. There is a fairly strong link to Climate, .56 and another to Literacy (.54). The link to Household Size is .48 and to IMR .42.

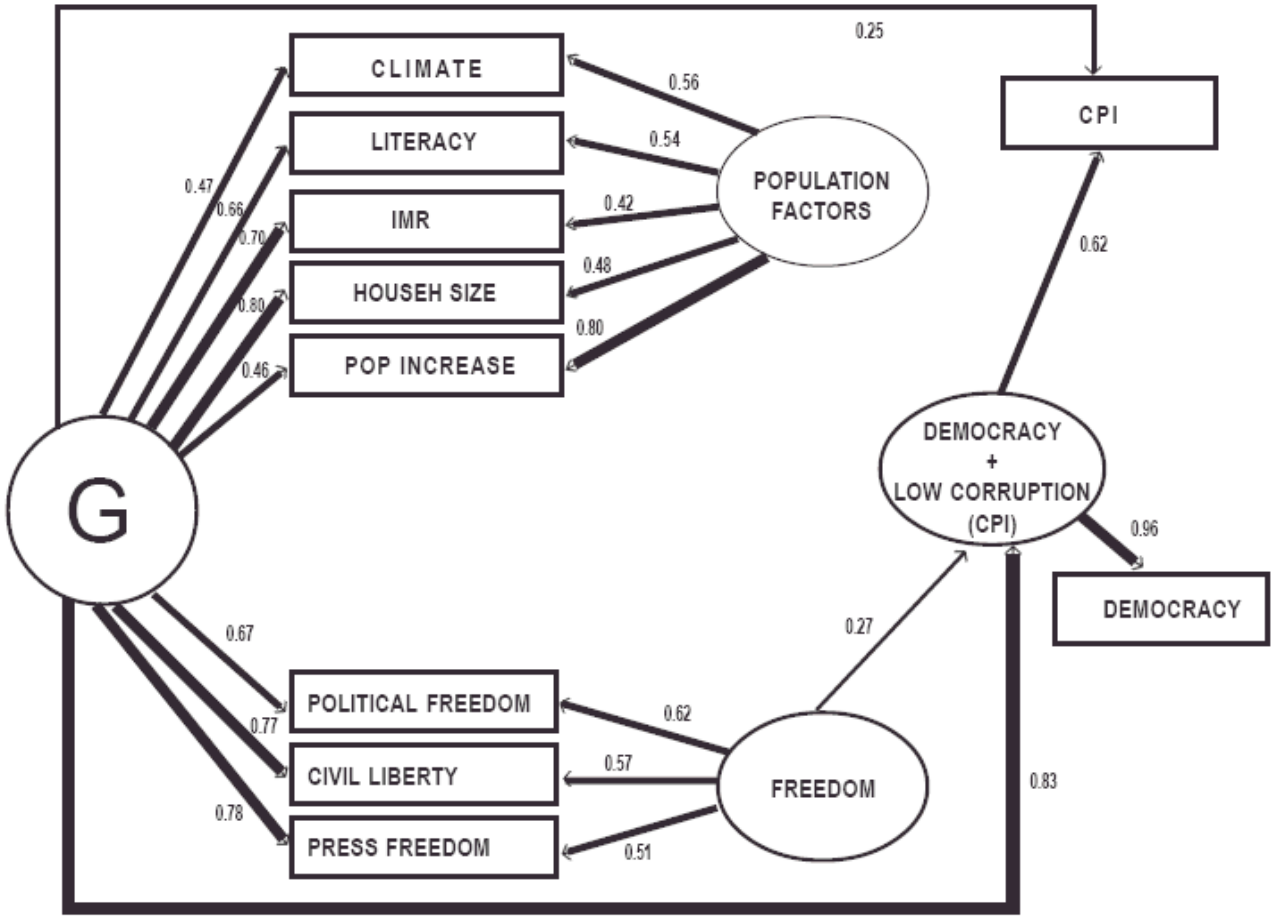
Finally, considering the Freedom Factors, there is a strong link to Political Freedom (.62), to Civil Liberty (.57). and to Press Freedom (.51).

Interpreting, it seems that Democracy is central for Low Corruption, but Low Corruption is also important for Democracy. The Freedom Domain has a weak link only to the LCD, suggesting that these variables cannot substitute a direct measurement of Democracy. However, the Freedom variables are strong and important in their own right.

It is very natural that Population Increase, Literacy, Household Size and IMR are strong components in the Population Factors domain. Climate belonging here may seem as a surprise, but is in fact logical. The poorest countries are all situated in warm climates, have a larger Population Increase, bigger Household Sizes, higher Infant Mortality Rate and lower Literacy. Thus, Climate, in accordance with out prediction, serves as a watershed between poor and rich countries. This is consistent with Huntington's ideas.

By and large, the result of the path analysis is consistent with the selection of variables as being adequate and valid.

FIGURE 1.
PATH ANALYSIS (LISREL) FOR 10 VARIABLES IN CORRUPTION STUDY



3.2 Results for Religion

Religion taken as a categorical variable has high Eta coefficients with all other variables, with a range from .55 to .78. The average Eta is .62, i.e. a substantial association with 38% of the variance in common for all the variables. The lowest coefficient is between Religion and Climate, Eta = .55.

Taken as a numerical variable, the range of Pearson coefficients is from .29 to .59, with an average of .51. The associations are generally a bit lower, which is natural considering that the metrical requirements for numerical analysis are higher. The common variance is 26%. Otherwise, the categorical and the numerical results corroborate one another.

In summary, religion can be used as a numerical variable if necessary, although the Eta coefficients seem more adequate.

4. Discussion

4.1 Further explanations of our data

As seen in Figure 1, except the G factor, three major latent variables or domains crystallised:

Democracy is completely and solely explained by the DLC domain (.96). The Freedom domain has a weak link (.27) to the DLC domain and thus affects democracy only indirectly and weakly. Variables from the Freedom domain have frequently been used as indicators of democracy, but as we see they cannot substitute a direct measurement of Democracy.

The DLC domain is strongly explained by the G domain (.83). As the G domain is extracted from all variables and constitutes a strong common explanatory influence, it can be said that there is an intricate web of many, initially unlikely factors affecting Democracy as well as corruption.

Activities to promote Democracy and counteract corruption are now flowering virtually everywhere in the world. This discussion will briefly comment on the results arrived at in the present study with occasional references to international activities. Each manifest and latent variable will be discussed. To some extent suggestions to counteract corruption will be given.

Given that Democracy and Low Corruption are closely integrated, strengthening Democracy in various ways would the perhaps most important approach to combating corruption. Volumes on what democracy is have been written, notably in the political sciences, with areas such as Political Theory and the History of Ideas. Obviously, the vast topic of what Democracy is can only be briefly touched upon within the framework of a short paper.

4.2 Discussing Democracy

A:1. Conceptualisation of Democracy.

Democracy in the present study turned out to be strongly integrated with the latent variables Low Corruption, which variable was very strongly related to a direct measure of Democracy.

Democracy is a peaceful way of decision-making and conflict solution, based on the will of the people in the case of nations, or of the members of any group. For our discussion, Democracy can be divided into Values, Principles, Procedure and Performance.

a) Values: Values affecting democracy are moral, ethical and religious. Religion will be discussed under that heading below. A vast amount of books and articles have been published on "Democra*cy* values". Searching the Internet provides a fair amount of sources. Note that searching for "Democra*tic* values" primarily produces so-called core values of the Democratic Party in the US. Some of these data, however, are also of interest.

Democratic values are not produced by Democracy, but are foundations on which Democracy rests. Research on Democracy frequently tends to investigate its impact on and association with Economy, especially economic growth. Numerous studies of democratic values and programmes to promote them exist, not least in former dictatorships.

For instance, data and programmes from Romania, Bulgaria and Malta can now be found. The European Value Study is one major programme, another is The World Value Survey at the University of Michigan (Ehrlich et al., 1999). This is an analysis of a long-time series of data on Democracy, Economy and Values. It uses i) a composite Value index based on survey questions from WVS, ii) a democracy index which is the sum of the Freedom House's Political and Civil Liberties index (which we also have included in the present study), and iii) real GNP per capita. The authors may face some difficulties. First, composite indices tend to

misbehave in complex analyses. Second, as our data strongly indicate, direct measurements of Democracy are superior to political and civil liberties indices, which are only indirectly related to out latent variables Democracy and Low Corruption. Third, the metric properties of real GNP made it not qualify to our study. In summary, research on values underlying Democracy is a complex matter, and much more research is needed.

Much research has been devoted to Democracy and growth. The UNDP Human Development Report, 2002, Chapter 2, reviewed the latest findings up till then. In a review of 16 studies, 3 found a positive association between democracy and growth, 3 found a negative association, whereas 10 studies were inconclusive. Interestingly, Przeworski and Limongi (1993) reviewing a large number of studies and conducting their own, found no differences between democracies and autocratic or bureaucratic dictatorships *when other factors, such as attrition and selectivity, were controlled for*. This might be the ultimate result in this controversy.

One of many reasons why results are unclear is that all studies involving democracy have used *indirect or partial* measures of democracy, or crude divisions into democracy/dictatorship which are metrically unsatisfactory.

b) The *principles* of Democracy are straightforward: Equal and secret vote; alternatives to vote on, such as a multiparty system; preferably an elected nomination committee. These constitute the core of democracy. Obviously, other subsidiary principles are extremely important, such as Humans Rights according to the Universal Declaration of Human Rights of the UN (1948), and Civil and Political Rights which were added in the International Covenant on Civil and Political Rights of 1976. Also other principles, sometimes codified in regular legislation are important, e.g. Property Rights and Press Freedom.

c) *Procedure*: The above principles should be employed in practice; i. e. Parliamentarism on the national and regional levels; similar principles should apply to organisations and associations of various kinds. However, there are many differences between countries. Also in the manner of conducting other associations there are cross-cultural differences.

d) *Performance*: There are huge variations even between recognised modern democracies. Every democracy has its flaws; there is no perfect democracy. Many countries with highly authoritarian regimes have formal democratic constitutions with the principles above codified, which however are not followed in actual practice.

A:2. Promoting democracy

The most effective routes to improved Democracy, I would argue, is education, information dissemination, and training, at many different levels. Suitable courses and ways of training should be given at all school stages: pre-school, elementary school, lower and higher secondary school and college levels. Some materials are available on the Internet. Seminars and workshops, preferably with problem-solving exercises should be held frequently in many different contexts. All this primarily applies to the developing countries, as most developed countries already have an organisational traditions with unions and many other types or associations, for instance for various hobby and spare time activities.

One would wish that every country would include systematic information and training in their national curriculae. However, experiences from so-called school democracy with class representatives, school councils and so on seem to indicate that as long as there is no or very little real power associated with the formal organisation, this is not taken seriously by the students who become used to the idea that associations often are meaningless.

It is very important that democracy training is made attractive and useful. It must be experienced as realistic, and preferably have immediate practical consequences. When I was co-ordinator for the SIDA supported Social Forestry Project in Orissa, India, we developed a methodology where real-life problems were solved in small groups and then discussed in the larger group, and finally compared with an ”ideal” solution. This

methodology became very popular at all levels, from senior officials to field workers. It is applicable in a wide variety of contexts.

4.3 Discussing the other obtained latent and manifest variables

B. Corruption.

Corruption as measured by the CPI is explained primarily by the latent domain Democracy and Low Corruption (DLC) via a strong path of .62, and by the G domain via a weak path of .25. Indirectly corruption is strongly affected by the G domain, as the latent domain Democracy and Low Corruption is explained by G via a very strong path of .83.

C. Freedom factors

Our results confirm what was said above, that Political Freedom, Civil Liberty and Press Freedom are extremely important variables. They form the strong Freedom Domain. This domain affects the DLC domain with a weak path of .27. It also affects the variables with relatively strong pathways, but the G domain affects them with very strong paths.

The relation between the Freedom variables and Democracy has been touched upon in other places in the present paper. As we have noted, these variables are of the utmost importance in any democracy, but they cannot replace a direct measurement of Democracy in quantitative studies, as is frequently done.

D. Population Factors

D:1. Religion

As it happens, the least corrupt countries are predominantly Protestant. Although Religion was not in the model, the correlations are so strong that we conclude that Religion, in interaction with Climate, and especially Literacy (see below), to a large degree explains the lower rate of corruption in the Protestant countries. The mechanism is as follows.

The Protestant ethos can be traced primarily to four major cultural-religious sources, out of which three are found in the Bible: 1) the Ten Commandments of the Mosaic Law in the Exodus Book in the Old Testament; 2) the Book of Proverbs (these two sources are found also in the Jewish Torah); 3) the parables of Jesus in the four gospels, as well as the Sermon on the Mount. 4) Martin Luther's most widespread writings, viz. the Small and Large Catechisms, and the Postil, a collection of sermons, explained, elaborated and propagated the rules in the biblical sources. The Small Catechism and the Postil were to be read in the home as well as in the schools.

All these sources deal with industriousness, thoroughness, economy and honesty. All of them try to teach people how to behave and how to improve their lot, in the honour of God. They provide a code of conduct of hard work, diligence, thoroughness, honesty, punctuality, accountability, quality, finish, meticulousness, follow-through and follow-up. These Lutheran and Protestant virtues are clear both from Luther's own writings (Luther, 1931), and from modern interpretations (Giddens, 1971).

These values now are in a process of erosion, however, as secularisation has spread and corruption is increasing. In Sweden, for instance, nepotism is rampant within the Government and in the executive bodies (Hedenbro, 2005).

D:2. Literacy and religion: the early and present recording of literacy

In Northern-European Protestant countries, a parish register was kept by the vicar, initially on a voluntary basis from the 16th century, but from the 17th century by law. In this were recorded family particulars such as when people were born and dead, their marital status, the general moral conduct, and who had moved in and out of the parish. Further, in this context most importantly, *the individual performance at the Church*

Examination (Christian Interrogation or House Interrogation), i.e. the skills in religious knowledge, functional literacy, and sometimes writing and arithmetic, was recorded in the Church Examination register.

The House Interrogation usually took place in the home, or occasionally in Church. It was the State's method to check that the law was complied with. If not all members of the household knew how to read, or knew the religious basics, the husband could be fined. He himself had the right to impose corporal punishment on all the members of the household, be it servants or family. This aggressive way of indoctrination was probably what it took to convert a previously Catholic population to Protestantism.

Because of this regularly recurring interrogation, the clergyman could identify bright-minded students, and sometimes help them to higher education. Schools were mostly informal, and teachers were unmarried or widowed women, or retired soldiers, who did not have the connections to promote students to higher study. Thus, the Christian interrogation tended to serve as an identifier of bright students, which most certainly helped in promoting science and entrepreneurship.

Because of the close integration between Religion and Literacy, and the efficient method of teaching and follow-up, there were villages in Sweden with a 100% literacy at the end of the 17th century (Johansson, 1981, 1992).

D:3). Climate

In interaction with Protestant values and literacy, a cool climate may help in promoting qualities of planning, follow-through and follow-up, sustainability in action and produce, and as a sequel a sense for quality and finish. These are usually not as well developed in warmer climates. Sloppiness in a cold climate, for instance not storing enough firewood, not minding warm and wind-protective clothing, or not making doors and windows tight, makes for various types of ailments, from frostbites and coldburns to pneumonia, arthritis, and other diseases, not to mention mismanaging heating so as to get asphyxia, or walking on unsafe ice on lakes and ponds, ad infinitum. Cold might produce these qualities in full only in interaction with other variables, as there are also developing cold countries. Incidentally, Huntington (1907, 1915, 1924) as mentioned above tried to link climate with human behaviour, the theory being that life in cold and changeable climates stimulates mental capacity and efficiency more than life in warmer regions. It has been criticised as ethnocentric generalisations based on limited data and ignoring contradictory evidence. This is true, viewing it with today's knowledge, conditions and perspective. Viewed in the perspective of his time and conditions, there is actually much validity in it. The fact remains that efficiency does seem to be linked to climate. The cool climate with harsh winters in the north-European countries, which happen also to be Protestant, may well have exerted a pressure towards planning, foresight, ingenuity and sustainability. These qualities are well developed in the West, but less so in LCD countries. As a by-product of the present study, we have found some quantified support for his theory.

D:4. Life Expectancy, (IMR), Population Increase and Household Size

The four variables Life Expectancy, Infant Mortality (IMR), Population Increase and Household size are all associated with poverty/affluence as a watershed between poor and rich countries, and hence between North and South. In the South, life expectancy is considerably lower, IMR is much higher, as is population increase, and household size is much larger. They are also a watershed between corrupt and less corrupt countries, and between countries in various climate zones. Further, they may be seen as indicators of degree of development.

Thus, these four variables, although being separate variables in their own right, express related conditions.

4.4 Examples of anticorruption measures

Given the results we have obtained, certain anticorruption measures may be suggested. The data and analyses show that a web of non-economic variables, associated in various intricate patterns, strongly affects corruption. This web also seems to reflect North-South differences and conditions over the globe.

1) Promotion of Democracy, Literacy, Education and Ethical training

As we have already emphasised, most important of all for promoting low corruption is Democracy. Also, Literacy, Education and Ethical training must be promoted.

2) Improved work culture

Work culture in most developing countries must be improved, starting with governments and parliaments. As long as the Parliamentary sessions last only a few months, much shorter than corresponding sessions in the parliaments of developed world, no efficient governance can be achieved. India is a good example. Although it is the world's largest democracy, parliamentary sessions lst only a few months, and Assembly sessions in the Indian States last only a few weeks. Yet, there is so much work to be done. The Parliament and the Assemblies could work 24 hours a day, 7 days a week, 52 weeks a year during decades before all the problems would be solved.

3) Improved law enforcement

A basic problem that is at the bottom of many other problems is the sorry state of the law enforcement apparatus, i.e. the legislation, the courts, and the police. This is true for developing countries as well as for the new countries formed after the downfall of the Soviet regime. Corruption is highly systematised. A set of problems which is roughly the same for most developing countries and is highly facilitated by corruption contains for instance: a) The lethargy of officials; b) The lack of attention to detail in virtually everyone; c) The traffic growing wild; d) Deforestation rocketing to the extent that there is soon no forest to cut, legally or illegally. (For instance, about 50 years ago, at the time for Independence, almost half of India was clad with dense forest; estimates vary between 43% and 47%. It is now down to around 10%. Indonesia and the Amazonas area are other terrifying examples); e) The health care is substandard; f) There is no general pension for all; g) There is no social security system; h) Pollution is rocketing; i) The educational systems leave much to be desired and do not reach all children.

All these problems would be easier to solve if there was little or no corruption.

4) Donor countries and agencies should prescribe much stricter conditions for providing assistance

What the developed countries could do is to make demands that these issues are addressed before lending any financial or technical assistance. The Centre, the states and various public and private companies should be made to sign contracts, over and above the contract for the specific assistance undertaking, of amending one component or the other in this hornet's nest of problems, before any loan, soft or otherwise, or any technical manpower and knowledge is transferred. Close monitoring an auditing should accompany every assistance undertaking.

I have seen huge amounts paid out on very poor verifications, and I understand that this is frequently the case. I find it shocking that this can happen. I also understand that things are moving in the right direction, but not fast enough. Demanding auditing from a major international auditing firm is not to interfere in a country's internal affairs. On the opposite, it is a duty to see to it that such countries adopt strict auditing. This is actually a help, and would certainly make corruption much more difficult.

5) Whistle-blowing as a means to combat corruption.

OECD now recommends Whistle-blowing as an effective means of combating corruption. OECD (2000b) argues that whistle-blowing is relevant to all organisations and individuals, not just a few who are corrupt or criminal. However, people are generally scared of blowing the whistle, and legislation to protect the whistle-

blowers is very necessary. It should be a punishable act to harass a whistle blower. Recent examples from Sweden underline that such legislation is necessary also in advanced countries.

6) International and national treatises and conventions

We have already emphasised the importance the importance of such agreements in Part 1, The Problem and its Background.

The activities suggested above are just a few examples; many more could be given. However, no more suggestions can be accommodated within a limited scope.

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