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How Much Do Perceptions of Corruption Really Tell Us?

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Abstract:

Regressions and tests performed on data from Transparency International Global Corruption Barometer 2004 survey show that personal or household experience of bribery is not a good predictor of perceptions held about corruption among the general population. In contrast, perceptions about the effects of corruption correlate consistently among themselves. However, no consistent relationship between opinions about general effects and the assessments of the extent with which corruption affects the institutions where presumably corruption is materialized is found. Countries are sharply divided between those above and below the US$ 10,000 GDP per capita line in the relationships between variables concerning corruption. Among richer countries, opinions about institutions explain very well opinions concerning certain effects of corruption, while among poorer countries the explanatory power of institutions for the effects of corruption falls. Furthermore, tests for dependence applied between the variables in the sets of respondents for each of 60 countries also show that, for most of them, it is likely that experience does not explain perceptions. On the other hand, opinions tend to closely follow the trend of other opinions. Additionally, it is found that in the GCB opinions about general effects of corruption are strongly correlated with opinions about other issues, as much as to justify the hypothesis that it would suffice to measure the average opinion of the general public about human rights, violence etc. to accurately infer what would be the average opinion about least petty and grand corruption. The findings reported here challenge the value of perceptions of corruption as indications of the actual incidence of the phenomenon.

JEL: D73, H11, K42.

Keywords: corruption, perceptions, corruption indicators.

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Summary

Perceptions of corruption are often taken as reliable proxies for the actual phenomenon of corruption occurring in countries. Regressions and tests performed on data from the Global Corruption Barometer 2004 (GCB),[1] however, show that personal or household experience of bribery is not in fact a good predictor of perceptions held about corruption among the general population. Countries are sharply divided between those above and below the US$ 10,000 GDP per capita line in the relationships between variables concerning corruption, and especially those involving experience vs. opinions. It is found that the connection between the experience variable and the others mostly remains weak or non-significant in both groups. Controlling for GDP per capita leads to very small and non-significant correlations almost completely across the board. In contrast, perceptions about the effects of corruption correlate consistently among themselves, the exception being the outlook towards the future, which does not appear to be connected to any of the other factors.

No consistent relationship between opinions about general effects and the assessments of the extent with which corruption affects the institutions where presumably corruption is materialized is found. Among richer countries, opinions about institutions explain very well opinions concerning certain effects of corruption, while among poorer countries the explanatory power of institutions for the effects of corruption falls, sometimes radically.

Furthermore, tests for dependence applied between the variables in the sets of respondents for each of 60 countries (48,232 in all) show that, for most of them, it is likely that experience does not explain perceptions. On the other hand, opinions tend to closely follow the trend of other opinions. For example, in most countries, an opinion that petty corruption is a problem is not significantly more frequent among respondents that have had experience with bribery than otherwise – while for most countries the opposite happens concerning the relationship between perceptions.

Additionally, it is found that in the GCB opinions about general effects of corruption are strongly correlated with opinions about other issues, as much as to justify the hypothesis that it would suffice to measure the average opinion of the general public about human rights, violence etc. to accurately infer what would be the average opinion about at least petty and grand corruption.

[1] A survey on corruption-related issues conducted by Transparency International (TI) encompassing 60-plus countries.

The lack of sufficient explanatory power of citizen's experience reported in the GCB extends to external opinions such as those systematized in Transparency International's Corruption Perceptions Index and other similar indices.[2] The findings reported here challenge the value of perceptions of corruption as indications of the actual incidence of the phenomenon. Also, as the relationship of experience and perceptions, as well as those between perceptions, vary between countries (and substantially vary between rich and poor countries), it is likely that different factors affect the formation of opinions in different environments. This not only makes understanding perceptions country-dependent but also compromises the informative content of rankings of countries based on perceptions of corruption.

Introduction

The difficulties of directly measuring corruption have led to various alternative methods of estimating the phenomenon from other data. Foremost among them are indices based on opinions about corruption. The most famous of them is the Corruption Perceptions Index, issued yearly by Transparency International. A more ambitious enterprise along the same line has been pursued by Daniel Kaufmann et. al. in the World Bank's Governance Indicators led by that author. The World Economic Forum's Executive Opinion Survey also includes questions about corruption.

Every time these indices are announced, they are presented in the press as indices "of corruption". More often than not, the "perceptions" part is forgotten.[3] This leads most lay persons to take such indices as reflecting actual levels of corruption affecting countries – even if, as pointed out by many authors,[4] the meaning of "actual level of corruption" is not at all clear.

Taking perceptions as indications of actual phenomena by default can become a habit. Thus, after arguing that (for instance) "conviction rates are not an adequate indicator for the actual incidence of corruption, but rather, reflect the quality of the judiciary" (which in itself is sensible), Lambsdorff (1999) proceeds to state that "perceptions are commonly a good indicator of the real

[2] It should be borne in mind that the samples basing the CPI and the GCB are different.

[3] Press releases from Transparency International itself often fall into the same trap.

[4] See e.g. Søreide (2006).

level of corruption", as if there were some independent estimate of a "real level" (whatever that means) against which the perceptions could be compared.

Given the influence of indices based on perceptions on the public opinion of each particular country and even on informing policies from governments and donor agencies,[5] the question as to whether opinions about corruption actually mean anything beyond themselves is quite crucial. However, testing the matter using only the data leading to those indices is impossible, because they are limited to opinions.

In 2004 an ample survey on corruption by Transparency International (the Global Corruption Barometer, subsequently re-issued in 2005 and 2006) allowed for the first time to compare opinions with experiential data collected from the same sample.

The present study uses the GCB-2004 to perform extensive statistical testing both on the aggregated country data and the raw data collected in each surveyed country. Several regressions are performed over the aggregated data from countries in order to ascertain whether or not the average opinions expressed hold significant relationships with the average experience with corruption reported by respondents. The result is that perceptions are not good predictions for experiences.

On the other hand, perceptions are mostly good predictors (sometimes excellent predictors) of other perceptions, not only related to corruption but also to other, apparently unrelated, matters. It seems that opinions operate in a coherent world. The problem is that such imaginary world of opinions and guesses seems not to hold a close relationship with the world of reality, at least in what regards corruption.

The availability of the raw data from each country surveyed by the GCB allows for a more intimate examination of the relationships between experience and opinions within each country. The method used with each set of national data was to test the dependence between variables. A high dependence between the variables representing opinions and the (single) variable representing experience with corruption would lead one to conclude that, more likely than not, there is coherence

[5] The Fox administration in Mexico explicitly based its (failed) anti-corruption strategy on the placement of that country in TI's Corruption Perceptions Index. USAID, under the Bush administration, announced that it will use, or is already using, corruption perceptions indices when deciding about whether or not giving aid to countries. IFIs such as the World Bank often play with the idea of following the same path.

between them. Lack of dependence would indicate that opinions behave randomly vis à vis experience – and this is what is mostly found.

Moreover, the disparities between opinions and experience follow no common pattern from country to country. If a reasonably common pattern were found, then one could uniformly "factor out" distortions in the opinion-forming processes of people in order to compare countries. The absence of such commonality reinforces the conclusion, already stemming from the analysis of the aggregated data, that the "distance" between opinions and experiences vary haphazardly from country to country and therefore perceptions-based comparisons between countries cannot be linked to differences in the underlying material conditions.

Of course, strictly speaking, the conclusions of this study apply only to the specific survey that led to the Global Corruption Barometer. In order to ascertain whether or not similar disparities between perceptions and experiences obtain in other surveys, it would be necessary that these included at the same time questions about perceptions and questions about experiences. However, the most popular corruption perceptions indices (TI's and the World Bank's) are not even one single survey, being aggregations of widely disparate independent surveys. Some of them might include questions about experiences, but neither Transparency International nor the World Bank Institute ever indicated an interest in adding such data to the analysis of their respective indices.

The data and the model

The Global Corruption Barometer 2004[6] was a public opinion survey conducted between July and September 2004 by Gallup International on behalf of Transparency International among 52,682 respondents from 64 countries. The survey questionnaire uses in part Gallup's "Trust in Institutions" survey, which have been done several times in Iberoamerica (14 Latin American countries plus Spain and Portugal),[7] added by one question concerning experience with bribery and numerous questions about perceptions of corruption and other issues. National samples varied from national to urban to metropolitan, the majority of them being urban. Three methods were used: Face-to-face interviews, telephone interviews, in one case (Japan) self-applied questionnaires and in another

6 Details at www.transparency.org/surveys/index#gcb.

7 See the 2002 edition at www.transparencia.org.br/docs/Pub051.pdf.

(Norway) web interviews. Samplings were mostly based on demographic quotas, while in a few cases they were probabilistic. Thus, margins of error vary considerably from country to country. The informed overall margin is ±4.4 pp.

The questions asked in the survey are presented in Annex I, together with the list of dummy variables we will use, built upon the answers to them. A total of 28 questions were asked. We will classify them into four categories and study the relationships between the variables according to their pertinence to these categories:

Group 1. Effects of corruption – *Petty, Grand, Life, Business, Politics, Perspective*.

Group 2. Institutions – *Customs, Education, Judiciary, Health, Police, Parties, Parliament, Civil Registry, Utilities, Taxes, Private Sector, Media, Military, NGOs, Religions.*

Group 3. Includes just *Experience*. Experience is not referred to specific Institutions.

Group 4. General issues – *Prices, Poverty, Environment, (Human) Rights, Violence and Jobs*.

All groups but Group 3 concern opinions. Our attention will be focused on the relationship between experience with bribery and opinions about corruption, be them about Effects or Institutions. Our aim is to find out the extent with which personal/household experience with bribery informs the opinions of people. We will also be interested in ascertaining the relationship between opinions.

The analysis will be restricted to 60 of the 64 countries depicted in the GCB (48,232 individual respondents). Three of the countries did not include some or all the questions we are interested in and for one (Kosovo) there are no economic data easily available. For GDP per capita we used the International Monetary Fund's data. We also used Transparency International Corruption Perceptions Index and the recent index proposed in Dreher et al. (2004). GDP-PC is used to group countries into two categories, divided by the US$ 10,000 line. There would be 24 countries in the upper tier and 36 in the lower group. Because for almost all variables two countries in the upper tier (Greece and South Korea) behave much closer to the bottom tier than to the top, we grouped then together with the lower-income group. Thus, we ended up with a "Top 22" and a "Bottom 38" assemblies.

Besides testing aggregated data, we performed tests for dependence between variables within each country's set of individual responses. The method used to do this is described in Annex II.

Cross-country analysis

Understanding the phenomenon of corruption is difficult because of its secret character. Not being amenable to direct measurement, corruption is addressed by indirect means, the most prominent being perceptions as measured by Transparency International's Corruption Perceptions Index (CPI), which is built upon a number of different surveys. There are other "global" indices in existence, such as the World Economic Forum's and, notably, the "Control of corruption" variable included in the World Bank Institute's KK set of governance indicators. All these are totally[8] or mainly based on opinions of respondents from or in some way related to business, and in a good measure to transnational business. Thus, the representativeness of the samples basing those indicators is very limited.[9] Nevertheless, due to the lack of other measurements, they, and especially the most popular one, the CPI, are taken as depicting countries' aggregate levels of corruption – the "perceptions" part being often forgotten. The limitations of the traditional perceptions indices, together with the lack of sufficient guarantees that respondents to those surveys hold intersubjective agreement about the issues surveyed, justify scepticism about their value to measure the actual phenomenon of corruption.[10]

On the other hand, a few surveys on experience with bribery were conducted both in particular countries and encompassing groups of countries. The best known of the latter is the International Crime Victim Survey (ICVS), conducted by the United Nations Interregional Crime & Justice Research Institute, which includes one variable related to corruption.

Because of the scarcity of data, few studies on the relationship between perceptions and experience with corruption across assemblages of countries were conducted. Recently, Mocan (2004) studied data from ICVS and compared them with four perceptions indices, collected along different periods. His conclusion is that the perception of corruption in a country is mainly influenced by the quality of its institutions (proxyed by the risk of expropriation), and that, when this factor is compensated for, actual experience has no impact on the level of perceived corruption.

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8 KK also uses surveys among the general population.

9 Those indices hold very high pairwase correlations – which is only to be expected, as often they are based on similar or even identical samples.

10 See e.g. Johnston (2000), Søreide (2003) and (2006).

The Global Corruption Barometer presents a valuable opportunity to compare perceptions and experience within the same samples. The importance of establishing the relationship, if any, between experience and opinions cannot be minimized, as reporting instances of bribery provides a presumably objective assessment of the actual incidence of corruption upon populations. Comparing experience with perceptions within the same sample allows one to investigate how the former relates to the latter.

Let us start with the averages. Table 1 shows the averages of the variables belonging to the Effects group, plus Experience (base percentages weighted). Table 2 has the corresponding numbers for the variables of the Institutions group.

Table 1: Average percentages, Effects and Experience

	Petty	*Grand*	*Life*	*Business*	*Politics*	*Perspective*	*Experience*
All	73.3%	79.0%	41.3%	66.0%	69.9%	40.3%	11.5%
Top 22	51.3%	61.7%	24.0%	56.7%	63.6%	42.2%	1.6%
Bottom 38	86.0%	89.1%	51.3%	71.3%	73.5%	39.1%	17.3%

It is apparent from Table 1 that Experience is more than eleven times as frequent in the Bottom group as in the Top (although the average frequency of Experience in the Top group is less than the margin of error of 4.4 percent points affecting the survey). Bottom group countries hold more pessimistic opinions about the overall effects of corruption than the Top, with the exception of Perspective. Perspective systematically behaves at odds with the other variables, and in the sequel will be treated separately.

Table 2: Average percentages, Institutions

	Customs	*Education*	*Judiciary*	*Health*	*Police*	*Parties*	*Parliament*	*Civil Registry*	*Utilities*	*Taxes*	*Private Sector*	*Media*	*Military*	*NGOs*	*Religions*
All	44.9%	32.9%	49.7%	40.6%	52.3%	60.7%	51.1%	33.4%	31.3%	42.3%	41.8%	35.2%	26.2%	22.3%	23.4%
Top 22	17.4%	15.0%	27.5%	21.7%	24.3%	47.7%	34.3%	13.9%	19.8%	26.4%	31.0%	32.6%	15.3%	14.6%	22.1%
Bottom 38	60.8%	43.2%	62.5%	51.6%	68.6%	68.2%	60.9%	44.6%	38.0%	51.6%	48.1%	36.7%	32.5%	26.7%	24.1%

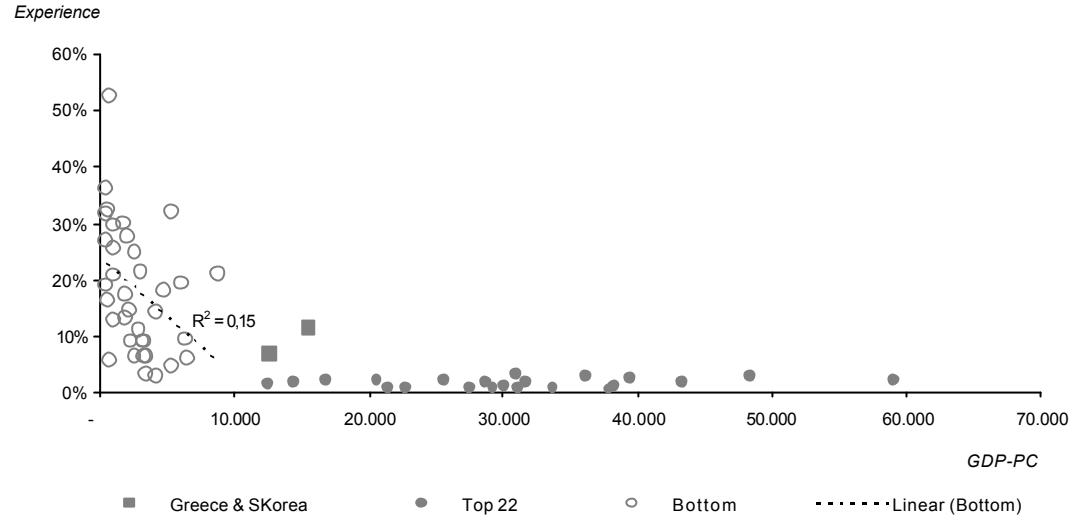
Harsher evaluations among Bottom countries are also the norm for the variables from the group of Institutions (Table 2), with two exceptions, Media and Religions. It is also interesting to observe a few of the evaluations some of the Institutions got. The Police, with which people have

frequent contact, is among the worse-evaluated. However, so is Customs,[11] an institution remote from common citizens' day-to-day experience. Other institutions that in principle are better known by citizens – Education, Health, Civil Registry – are midway. And certain others, that most citizens view at a considerable distance (Judiciary, Political Parties and Parliament) are among those that receive higher marks for perceived corruption. Finally, it is noteworthy that the military did not get bad marks in the group of poor countries, many of them with histories of military rule.

Percentages alone do not explain a great deal. We are concerned with investigating the relationships between the sets of answers, in order to ascertain their mutual coherence. We first observe the marked differences between the Top and Bottom subsets. While among the Top countries low levels of experience go hand in hand with widely variable perceptions, among the Bottom very high perceived levels of corruption are associated with experiences distributed across a wide range. This results from the distribution of experience according to GDP-PC. While the GDP-PC vs. Experience correlation across the whole set of 60 countries is -0.621, this information is misleading, as the correlations are small in the income subsets, being 0.249 (observe that it is positive) among the Top countries and only -0.367 among the Bottom ones (Graph 1 and Table 3, where Greece and South Korea are enhanced; these two countries were not included in the calculation of the R^2 of 0.15 for the Bottom subset informed in the graph). Thus, the most one can say about the experience of bribery in what regards income is that it is fairly low among richer countries, and that experiences vary widely for those below GDP-PC of US$ 10,000. The disparate behaviour of Experience according to the income bracket justifies our systematically treating these subsets separately.

[11] Apropos: "Of the total population in Latvia, each year no more than 5-10% seek help from judicial institutions. However, 99% of the population, even though it does not even know where the Temple of Themis is located, has its own more or less justified view about the courts' high level of corruption. Only every third person living in Latvia travels abroad each year. However, regardless of whether someone does or does not go on shopping trips to the Vilnius market, or on vacations to Greece or the Canary Islands, or whether this someone can afford neither – the absolute majority of the respondents claim that customs officials and border guards are corrupt (and not just a little bit corrupt)." Andrejs Vilks, "Corruption Perception Restraint", Latvian Daily *Neatkariga Rita Avize*, Nov 27, 2002, p. 2.

Graph 1: GDP per capita vs. Experience with bribery.



GDP per capita correlates better with the subjective variables, and in almost all cases better among Top countries than among Bottom countries (Table 3), the exception being Perspective. Business and Politics correlate positively with GDP-PC in the Bottom subset (the higher the income, the more pessimistic is the perceived effect of corruption), but in the case of Business the correlation it is not significant.

Table 3: Effects, Experience and GDP-PC

	All	*Top 22*	*Bottom 38*
Petty	-0.771**	-0.419	-0.309
Grand	-0.699**	-0.429*	-0.160
Life	-0.677**	-0.593**	-0.151
Business	-0.482**	-0.323	0.285
Politics	-0.437**	-0.456*	0.335*
Perspective	0.056	0.000	-0.168
Experience	-0.621**	0.249	-0.369*

** Significant (2-tailed) at the 0.01 level. * At the 0.05 level.

The correlations of GDP-PC with the institutional variables also vary considerably between the income subsets. The highest correlation for both subsets involves Customs (respectively -0.616 and -0.482); also, for this variable the difference in absolute value between the correlations in the Top and Bottom subsets is one of the lowest, 0.134. The weakest correlations of GDP-PC in the Top subset are with Religions, Media (both less then -0.1) and Private Sector (-0.225), while in the Bottom subset they are Media, Religions and Health (all positive). With few exceptions, the other vari-

ables also exhibit low correlations with GDP-PC. Thus, in general, as far as the predictive power of income for opinions goes, it is stronger for perceived Effects of corruption than for Institutions and stronger among countries that are richer and less objectively affected by bribery than among poorer and more prone to bribery ones. The correlations with variables of the Institutions group are generally weaker, but the disparity between the income groups remains.

One of our principal aims here is to ascertain how pragmatic experience as reported by respondents relate to their opinions. We will then begin with the relationships of the Experience variable with those concerning opinions about the Effects of corruption (Table 4).

Table 4: Correlations – Experience vs. Effects.

	Petty	*Grand*	*Life*	*Business*	*Politics*	*Perspective*
All	0.531**	0.433**	0.433**	0.308*	0.217	0.157
Top 22	-0.312	-0.335	-0.492*	0.014	-0. 145	0.176
Bottom 38	0.268	0.126	0.057	0.032	-0.031	0.316

** Significant (2-tailed) at the 0.01 level. * At the 0.05 level.

At least half the relationships are not very close in the entire set to begin with, and all fall when calculated among countries belonging to the income subsets. Moreover, most of the correlations are negative and non-significant in the Top subset and especially small, and none is significant, in the Bottom subset. In words, for the Top, this means that, although discreetly, the less respondents reported experiences, the more pessimistic they manifested themselves about the various themes and conversely, and for the Bottom, that Experience is basically neutral: Experience does not inform opinions one way or the other. The same happens with almost all opinions about Institutions (Table 5), with one peculiar exception: Customs, again. This is the variable that presents the highest correlation with Experience in the Bottom subset, being significant at the 0.01 level. Most other correlations in this subset are very small and non-significant, including those with institutions that common citizens more likely have contacts. Even for the Police the correlation with Experience (significant at the 0.05 level) is only 0.331 in the Bottom subset, being the highest negative in the Top, with -0.425 (significant at the 0,05 level) – the more respondents reported having had paid bribes to someone, somewhere, the better they evaluated the Police.

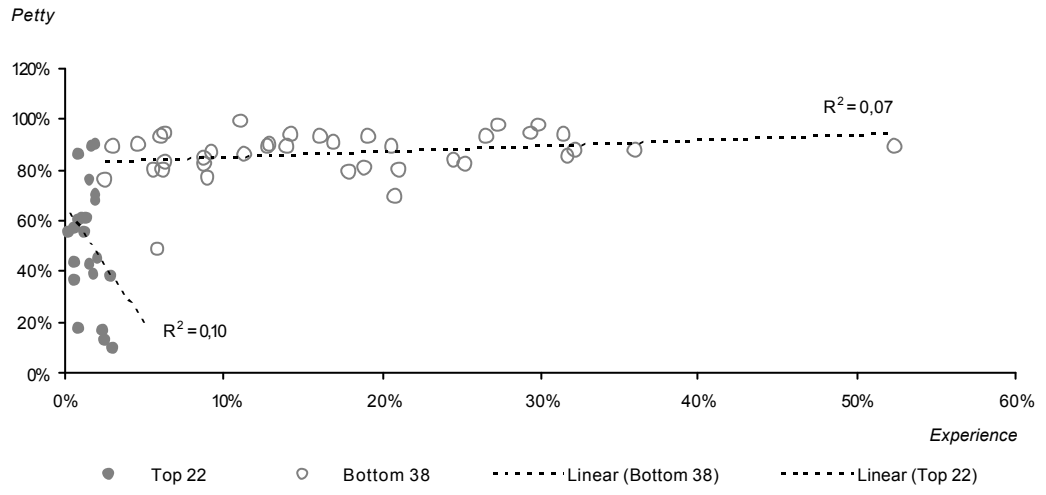
Table 5: Correlations – Experience vs. Institutions.

	Customs	*Education*	*Judiciary*	*Health*	*Police*	*Parties*	*Parliament*	*Civil Registry*	*Utilities*	*Taxes*	*Private Sector*	*Media*	*Military*	*NGOs*	*Religions*
All	0.728**	0.469**	0.592**	0.463**	0.646**	0.297*	0.368**	0.511**	0.331**	0.506**	0.441**	-0.013	0.396**	0.202	-0.114
Top 22	-0.231	-0.424*	-0.306	-0.295	-0.425*	-0.231	-0.186	0.015	-0.160	-0.283	-0.030	-0.079	-0.418	-0.016	0.011
Bottom 38	0.486**	0.043	0.256	0.041	0.331*	-0.010	-0.000	0.090	0.027	0.241	0.087	-0.148	0.150	-0.139	-0.259

** Significant (2-tailed) at the 0.01 level. * At the 0.05 level.

The disparate behaviour of the correlations can be visualized in graphical form in the examples of Experience vs. Petty and Experience vs. Health (Graph 2). Petty, together with Grand, is the better-behaved graph. Those corresponding to most of the other variables, both from the Effects group and from Institutions, are similar, usually being more scattered. Others (like Media) are markedly scattered about, as implied by the very low correlations (which in this case, as in others, are negative for both income groups).

Graph 2: How much Experience explains Petty and Health



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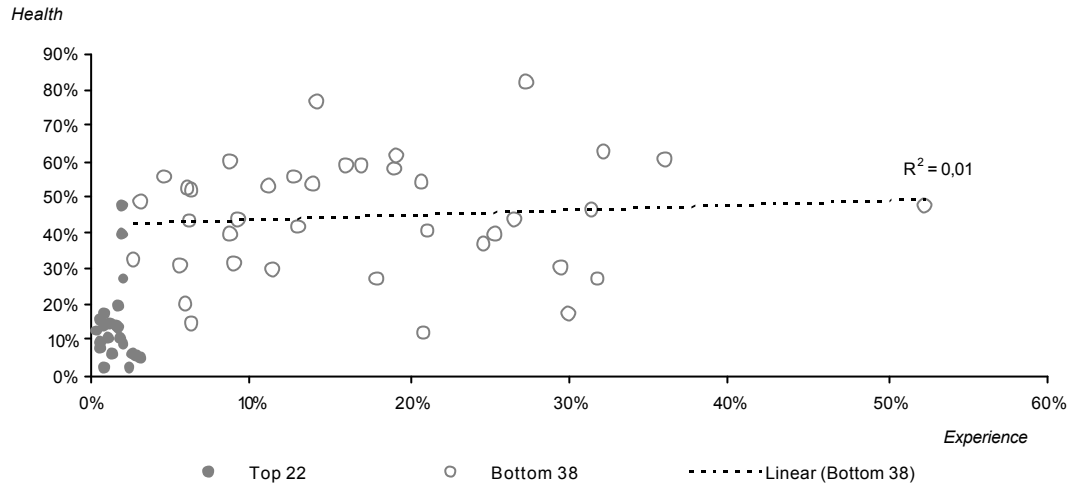


Such weak relationships between Experience and the opinion variables are counter-intuitive, notably concerning variables such as Petty, Life, Health, Education, Police etc. They presumably refer to institutions and to effects of corruption that would be more present and more easily within the grasp of the general population, more so than, say, the Grand or Business variables. One would perhaps not be surprised to find lower correlations between Experience and the latter two (and, maybe, Politics, Judiciary, Parliament etc.) than with Petty or Health. This is not verified, the correlations being similarly low (or negative) across the board. This means that comparing reported experiences with bribery across countries give scant information, if at all, about comparative assessments of the integrity of Institutions or Effects of corruption. Conversely, comparisons between such opinions give no clue about comparative levels of actual corruption. Indeed, if we control Experience vs. the opinion variables for GDP per capita, we find that no correlation is significant with Effects and that, among Institutions, only Customs (0.484 at the 0.01 level) and Police (0.315 at the 0.05 level) are significant.

In contrast with the correlations involving Experience, those holding between the subjective variables are considerably higher. Not only that, they also vary much less across the income subsets. Table 6 describes the relationships within the Effects group, excluding Perspective.

Table 6: Correlations between perceptions about Effects.

	Petty	*Grand*	*Life*	*Business*
		Top 22		
Grand	0.949**			
Life	0.494*	0.549**		
Business	0.404	0.471*	0.583**	
Politics	0.625**	0.748**	0.670**	0.721**
		Bottom 38		
Grand	0.847**			
Life	0.682**	0.617**		
Business	0.496**	0.479**	0.407*	
Politics	0.404*	0.530**	0.257	0.569**

** Significant (2-tailed) at the 0.01 level. * At the 0.05 level.

Therefore, learning the opinion of people about Petty corruption affecting countries gives a very good idea about what would be their opinions about Grand corruption. On the other hand, although the correlations between Life and Petty are not small, one would perhaps expect an even stronger relationship between them.

At this point, a pertinent question concerning opinions is how evaluations of Effects of corruption relate to assessments of Institutions. It would be natural to expect that certain perceived Effects would be more linked with some Institutions than with others. So, it would not be remarkable if perceived problems with Civil Registry, Health, Education etc. reflected on opinions about Petty corruption, say. Likewise, if Parliament and Political Parties are seen to be affected by corruption, then it would be natural to expect these variables to be strongly related to the perceived effects of corruption on the political life. An examination of the correlations shows that some of those direct expected relationships do appear, but not indiscriminately across the income subsets. Conversely, certain correlations that *prima facie* would not be expected to be strong prove otherwise. It is the case of Customs, correlating well with Petty and Life in the Top subset. Petty also correlates reasonably well with Customs in the Bottom subset.

As an opinion about Effects might be informed by more than one single opinion about Institutions, we will pursue the matter of how much the latter explains the former by performing multiple regressions on them. We will address each Effects variable in turn, dropping Religions, NGOs, Media and the Military, because each of them correlates weakly with the Effects variables. We will use the following terminology: "Expected" will refer to a set of explanations that one would reasonably expect for any given effect, given its nature. For instance, while it would be natural to expect that corruption in Education and in Health impact on the perceptions about the extent of over-the-

counter bribery and also on the significance of corruption in day-to-day life (and so these variables, among others, would comprise the Expected set of explanations for both Petty and Life), it would not be expected that corruption in the health system would have a sizable impact on the political life, say. The regressions with the Expected sets will be performed with and without the addition of the variable Experience.[12] Table 7 summarises the results.

Table 7: Effects explained by Institutions.

		All		*Top*		*Bottom*	
	Independent variables	*adjusted R^2*	*S.E.*	*adjusted R^2*	*S.E.*	*adjusted R^2*	*S.E.*
Petty	All	0.811	0.101	0.881	0.082	0.296	0.076
	Expected (**)	0.787 0.787	0,107	0.815 0.805	0.102	0.391 0.376	0.071
Grand	All	0.817	0.090	0.925	0.069	0.522	0.058
	Expected (**)	0.753 0.751	0.105	0.914 0.917	0.073	0.493 0.487	0.060
Life	All	0.674	0.120	0.296	0.117	0.433	0.133
	Expected (**)	0.643 0.637	0.126	0.499 0.511	0.099	0.408 0.395	0.136
Business	All	0.288	0.132	0.518	0.136	-0.034	0.097
	Expected (**)	0.285 0.271	0.132	0.637 0.610	0.118	0.037 0.017	0.094
Politics	All	0.486	0.096	0.722	0.091	0.432	0.068
	Expected (**)	0.433 0.422	0.101	0.624 0.601	0.106	0.255 0.246	0.078

In smaller type, the adjusted R^2 for the regressions including Experience.

(**) See the text for the composition of these sets for each Effects variable.

The regression for Petty using all variables over the whole set of countries leads to a multiple adjusted R^2 of 0.811, which is a good fit, but the standard error is big, 0.101. Taking just the variables that in principle would have more to do with petty corruption (Education, Health, Police, Civil Registry and Taxes) and running the regression over this Expected set, we get an adjusted R^2 = 0.787 and standard error of 0.107. Within these limits, we can say that taking the whole set of countries, these variables reasonably explain the evaluations about Petty (and Grand) corruption. However, the picture changes when we focus on the income subsets. Whereas evaluations of institutions reasonably explain opinions about the extent of Petty corruption if we keep to richer countries, the explanatory power of such institutional assessments falls dramatically for the set of poorer coun-

[12] Although the standard procedure is to find the least ensemble of independent variables that explains the dependent variable (thus getting "parsimonious" explanations), we will not pursue this path.

tries. When Experience is added to the regression, the fit slightly deteriorates. In fact, controlling Petty vs. Experience in the income subsets for the variables from Petty's Expected set, the correlations totally cease to be significant (respectively -0.087 and 0.084).

Evaluations about Grand corruption would have as natural explanations assessments of institutions like Parliament, Parties and Judiciary, so we will use these to form our Expected set for this variable. We find that the explanatory power is very good within Top countries, falling for Bottom ones. This is one of the two exceptions where adding the Experience variable to the regression improves the fit, but only for the Top group. Adding Private Sector to the Expected set betters the fit when the regression is performed over the whole set and for the Bottom countries, but deteriorates it in the Top subset

Taking Life, the explanatory power fall for both sets of independent variables. Expected is the same as was used for Petty. The differences of predictive power across the income divide are less than for Petty, but standard errors are bigger. Here Experience adds to the goodness of fit in the Top group. Controlling Life vs. Experience in the income subsets for the variables from its Expected set, the correlations become respectively -0.291 and -0.103.

The situation for the effects of corruption on Business is much worse than for the previous variables. For the Expected set we choose Taxes, Utilities, Customs, Parties, Parliament, Private Sector and Judiciary. Table 7 shows that the opinions about the effects of corruption on Business are not very well explained in the Top subset and remain unexplained in the Bottom subset. Experience deteriorates the fits. Limiting the Expected set to fewer independent variables results in even worse outcomes.

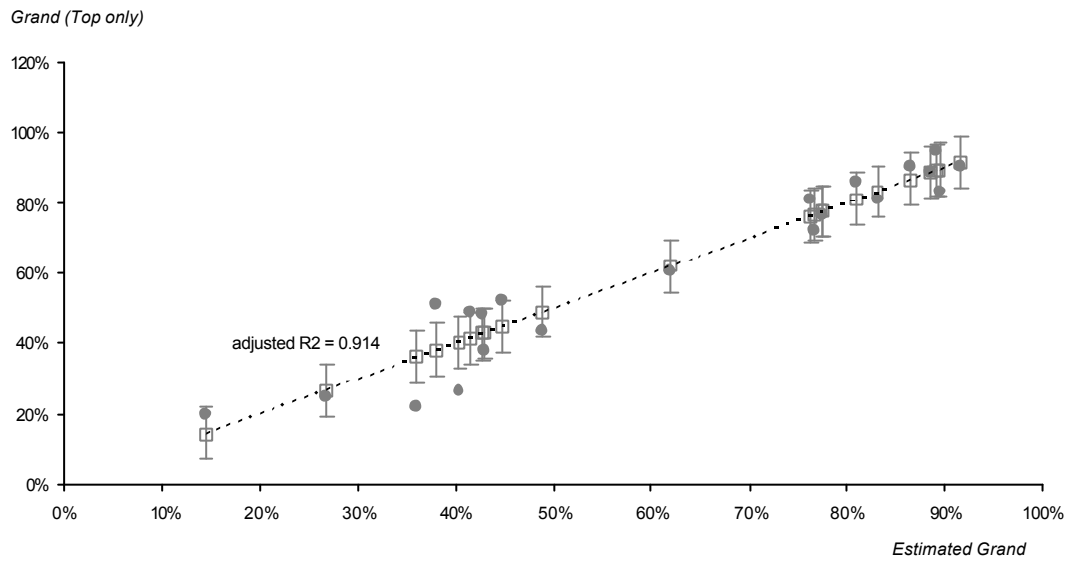
Lastly, the effects of corruption on Politics. It would be reasonable to find explanations in Parliament, Parties and Judiciary. The best fits involve all variables. The fit is moderately good with the Expected set for Top countries but not so for Bottom ones. Adding Private Sector betters the fit in the income subsets, while Experience deteriorates it.

So, in summary:

Petty is indeed acceptably explained by those perceptions of the incidence of bribery in institutions one would associate with it, *but only in the set of richer countries*. Among poor countries, the explanatory power is irrelevant however set of independent variables one chooses.

Grand is exceptionally well explained by the chosen Institutions variables in the Top group, such predictive power sharply falling among the Bottom countries, but still maintaining an arguable connection, with low standard errors. Estimating Grand for Top countries by the variables of its Expected group leads to a very good fit (adjusted R^2 = 0.914, standard error = 0.073, as shown in Graph 3).

Graph 3: How much Grand in Top countries is explained by its Expected set of Institutions.



Life does not work especially well neither in the Top nor in the Bottom subset (adjusted R^2 of respectively about 0.5 and 0.4 for the Expected set of explaining variables, with a standard error of 0.136 for the latter case).

The opinions about the impact of corruption on Business remain unexplained for the Bottom subset and moderately explained in the Top one by the Expected set.

Politics shows a slightly worse result within the Top for the Expected set of explanations, such deterioration being considerably more acute among Bottom countries.

With the exception of Grand and Life for the Top subset, the addition of Experience deteriorates all regressions.

The unusual behaviour of perspectives about the future

Every analysis performed over the variables led to distinctly peculiar results concerning the Perspectives variable. Around 40% of respondents in both income subsets consider that the future is bleak concerning the evolution of corruption, but the relationships of such opinion with the other perceptual evaluations of Effects of corruption are very weak (Table 8) and in fact non-significant. The highest positive correlation is only 0.395 (with Life, in the Bottom subset). The correlations with Experience are all very low.

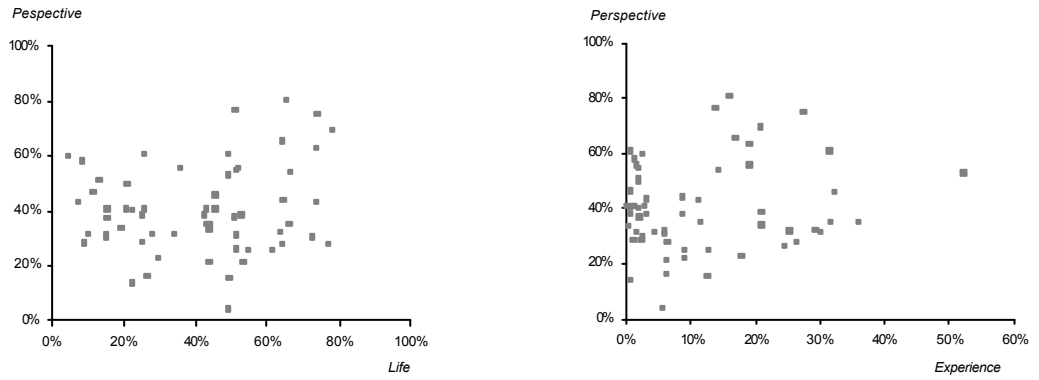
Table 8: Correlations of Effects with Perspective.

	Petty	*Grand*	*Life*	*Business*	*Politics*	*Experience*
All	0.072	0.086	0.171	0.077	0.029	0.157
Top 22	0.184	0.237	-0.042	0.230	0.217	0.176
Bottom 38	0.329	0.257	0.395	0.103	-0.019	0.316

No correlation is significant.

The picture concerning the opinions about Institutions is similar. In the Top subset, the correlations range from a minimum of 0.007 (with Police) to a maximum of 0.488 (with NGOs,) being significant (at the 0.05 level) only with NGOs. In the Bottom group, the minimum is 0.214 (Private Sector, not significant) and the maximum is 0.605 (Utilities, significant at the 0.01 level). So, Perspective does not show to be connected with the other variables in any coherent way. The situation of this variable is worse than the others, because for those at least some higher significant correlations are found. Perspective seems to float by itself. This can be visually seen in the examples of dispersions (Graph 4) vis à vis Experience and Life. The graphs are very much dispersed.

Graph 4: Examples of dispersions involving Perspective.



From the discussion so far it can be concluded that the variation of experience across countries is not a good predictor of variations of perceptions, irrespective of the income bracket considered. As the correlations run both ways, this means that comparing perceptions of corruption across countries does not furnish a reliable compass to assess comparative levels of bribery affecting common citizens. In contrast, opinions show a much better-behaved pattern, with exceptions. Some, but not all, opinions about the effects of corruption are reasonably explained by assessments of the incidence of corruption in institutions among countries belonging to the upper income tier. For poorer countries, the predictive power of these assessments fall considerably. Adding experience to the explanations of perceived effects of corruption by assessments of the integrity of institutions actually deteriorates the explanatory power of such assessments. Outlook evaluations seem not to be significantly connected either with experience or with other opinions.

Intra-country relationships between variables

Weak or strong relationships between country averages give no information about the linkages among the same variables within each country. Thus, for example, from the generally low degree of relationship between Experience and opinions one cannot conclude that personal/household experience has little connection with opinions in any given country, but only that, if experience informs opinions, it does it differently across countries. It could be that, staying within each country, one would find stronger links between the variables in question. If we were to confirm this, then we would become endowed with country-specific numerical factors that, applied to each country, would permit to normalize results in order to allow comparing opinions across countries.

In order to test whether or not this happens, we submitted the survey's country data to tests of dependence between variables. To do that, the crosstab statistics for each pair of variables was studied. Given a country and given two variables (say, Petty and Experience), we are interested in ascertaining whether or not respondents that reported having paid bribes are significantly more likely to hold a pessimistic opinion about the extent with which petty corruption is a problem than otherwise. The most common way to do that is by means of the χ^2 test. Here we slightly depart from the usual path and directly explore the hypergeometric distribution, characteristic of sampling procedures.

This allows for a better discrimination of cases than the χ^2 procedure.[13] We compare the frequency of the event Petty in the overall sample with the same event in the subsample defined by those who reported having had experience. If the frequency of the event Petty in the subsample is significantly higher (or lower) than the frequency in the overall sample, then we conclude that the two events are dependent. Thus, the outcome of a test pivots on how we define the level of significance, that is, the range of frequencies that establishes whether we are willing to accept the hypothesis that the events are dependent. The margin is:

$$\varepsilon(r) = \lambda_\pi \sqrt{\frac{f(1-f)(n-r)}{nr}}$$, where

n is the length of the sequence (the size of each country's sample);

f is the frequency of the studied event in the sequence (say, the percentage of respondents that considered Petty corruption to be problematic);[14]

r is the size of the subsample (say, the number of respondents that reported experience);

λ_π is the parameter of the elected level of confidence, corresponding to $\pi = 2\{1-\varphi(\lambda_\pi)\}$, where φ is the normal distribution function.

We want to be as accommodating as possible concerning the rigour of the tests we want to apply, in order not to be guilty of bias towards rejection. Accordingly, for these tests we used a level of confidence of 90% (we accepted as dependent as many as 10% of all possible outcomes), corresponding to $\lambda_\pi = 1.645$. To apply a test, the absolute value δ of the distance between the sampled frequency and the frequency of the event in the original sequence is compared with $\varepsilon(r)$. If $\delta > \varepsilon(r)$, the sequence is dependent relative to the test. For instance, take the variables Health and Experience in Argentina. The numbers are: $n = 1005$; $f = 0.406$; $r = 71$; and therefore $\varepsilon(71) = 0.092$. Now we compute the frequency of the event Health among the 71 respondents that reported having had Experience. It is 43/71 = 0.606, and therefore $\delta = |0.406 - 0.606| = 0.200$. Since $\delta > \varepsilon(r)$, we conclude that there is dependence between the two variables at the chosen level of confidence of 90%.

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[13] In fact, the χ^2 test leads to more situations where randomness cannot be rejected than the procedure used here.

[14] Observe that this is not the weighted frequency for the variable, but the actual frequency of the event in the sequence.

Our intention was to ascertain whether or not the perceptions variables connected with corruption are dependent on the Experience variable and also among themselves. The rationale for applying the procedure was that, if experience informs perceptions, then those who have had household contacts with bribery would be more likely to hold pessimistic views than those who haven't. Similarly, we compared each of the variables of the Effects group with their respective sets of "Expected" variables (see the previous section) selected from the Institutions group. The tests could produce three types of outcomes:

Randomness. If for country A Experience is random relative to Petty (say), then one cannot say that it is likely that actual experience with bribery significantly informed the opinions of the persons pertaining to that country's sample.

Dependence by excess. When the frequency of the event under scrutiny (e.g. persons saying that corruption constitutes a problem in life) within the subset of respondents that have had experience with bribery is significantly higher than the frequency in the entire sample. Dependence by excess is what we are looking for.

Dependence by deficiency, or lack. When the frequency of the event under scrutiny within the subset of respondents that have had experience with bribery is significantly lower than the frequency in the entire sample.

We begin with the relationship of the Experience variable with the Effects group. The outcomes of the tests are summarised in Table 9.

Table 9: Summary of tests for dependence between Experience and the Effects variables

	Petty	*Grand*	*Life*	*Business*	*Politics*	*Perspective*
Lack	5	7	0	2	3	2
Random	40	41	35	40	43	41
Dependent	15	12	25	18	14	17

It turns out that in only 15 out of 60 countries respondents that have had experience with bribery were significantly more likely to answer that Petty corruption is a problem in their country than the country's overall sample. There were five countries (Guatemala, India, Indonesia, the Philippines and USA) where for these respondents it was significantly *less* likely that they would consider

petty corruption a problem than otherwise. For no less than 40 countries, the answers about experience and Petty corruption were relatively random. The panorama for the Grand variable is essentially the same, with only 12 countries exhibiting dependence between the variables. For seven there is non-randomness by lack of sufficient coincident answers (Germany, Guatemala, India, South Korea, Philippines, Portugal and USA), that is, respondents that experienced bribery were less likely to consider Grand corruption a problem in their countries than the incidence in the respective overall samples. The better-behaved instance concerns the variable Life, but even then only 25 countries showed dependence with Experience. On average, 72% of the relationships of the subjective Effects variables with Experience are either random of deficient, only 28% being dependent.

In what regards the comparative picture between Top and Bottom countries, a partial summary is presented in Table 10, including only the relationships with Experience that proved to be dependent. Different behaviours appear, some of them more marked than others. Thus, Life shows to be dependent with Experience in a higher proportion of Bottom countries (47%) than of Top ones (32%). Something similar happens with Business (39% vs. 14%) and Perspective (37% vs. 14%). Even then, dependences with Experience remain fairly low within the groups.

Table 10: Dependences between Effects and Experience by income group.

	All		*Top 22*		*Bottom 38*	
Petty	15	25%	5	23%	10	26%
Grand	12	20%	4	18%	8	21%
Life	25	42%	7	32%	18	47%
Business	18	30%	3	14%	15	39%
Politics	14	23%	4	18%	10	26%
Perspective	17	28%	3	14%	14	37%

In just two countries (Netherlands and Romania) dependence was found between Experience and all Effects variables (excepting Perspective). Taking just Petty, Grand and Life, in addition to Netherlands and Romania just four other countries (Estonia, Venezuela, Bulgaria and the Czech Republic) showed simultaneous dependences. Taking Grand, Business and Politics, only three satisfied at the same time the dependence criterion with Experience: The already seen Netherlands and

Romania, plus Denmark.[15] Conversely, in 16 countries all relations of Effects (excepting Perspective) with Experience are random: Bosnia/Herzegovina, Brazil, Canada, Ecuador, France, Hong Kong, Ireland, Israel, Japan, Luxembourg, Malaysia, Peru, Poland, Switzerland, Taiwan and Uruguay. Adding Perspective, the number is 13.

In the previous section we have seen that the correlations between the Effects variables and Experience were low. Perhaps we could find better relationships if we limited the countries to those that exhibited dependence between Experience and each Effects variable in turn. Table 11 shows that the correlations obtained are even worse than previously. Only Grand, with 0.415 among 12 countries, escapes from generally negative or near zero correlations.

Table 11: Correlations between Effects and Experience among countries where there is dependence between the variables.

	R	# of countries
Petty	-0.327	15
Grand	0.415	12
Life	-0.303	25
Business	0.002	18
Politics	-0.056	14
Perspective	-0.402	17

What all this means is that the conclusions of the previous section are confirmed for the variables of the Effects group, now within countries: Personal or household experience with bribery does not consistently inform people's opinions about the effects of corruption, either about Grand and Business (which perhaps would be expected) or about Petty or Life (which, presumably, would be linked with personal histories), or about Politics. There are differences between richer and poorer countries, but they remain within the picture arising from the overall numbers. As before, the reasoning is symmetrical for the variables, and therefore assessing people's opinions about the effects of corruption does not furnish a reliable indirect measure of actual corruption happening in the majority of countries. Indeed, for a number of countries, *all* opinion/perceptual variables are relatively

[15] Even at the 70% confidence level (accepting as dependent 30% of all possible outcomes of the tests), the distribution of dependences of Experience vs. the subjective variables is: Petty – 24 countries; Grand – 31; Life – 34; Business – 28; Politics – 26; Perspective – 25. However, there is a trade-off, as dependences by deficiency also grow: Petty – 9; Grand – 9; Life – 4; Business – 5; Politics – 7; Perspective – 6. With this, as much as 56% of the relationships turns out to be non-positively-dependent even at that more than permissive level of confidence.

random with experience (Brazil, Canada, Ecuador, France, Hong Kong, Ireland, Israel, Japan, Peru, Switzerland, Taiwan and Uruguay).

The same procedure, now applied to the Institutions variables, leads to similar results (Table 12). However, there is a dramatic difference between Top and Bottom countries. For the Top, the number of countries for which there is dependence between Institutions variables and Experience is in all cases very small, while for the Bottom group the number of dependences markedly rise, suggesting that for those countries the opinions about the integrity of the institutions in question have stronger roots on personal/household contacts with bribery. (This does not necessarily mean that such contact have happened with those specific institutions.) It remains, however, that even for the Bottom, in most cases the relationships are still more likely random. Leaving out the Military, Media, NGOs and Religions, in only two countries (Romania and the Ukraine) there is dependence between Experience and all the remaining Institutions variables.

Table 12: Dependences between Institutions and Experience.

	Customs	*Education*	*Judiciary*	*Health*	*Police*	*Parties*	*Parliament*	*Civil Registry*	*Utilities*	*Taxes*	*Private Sector*	*Media*	*Military*	*NGOs*	*Religions*
							All								
Lack	1	1	1	4	1	1	3	1	3	2	2	2	2	2	1
Random	39	41	39	37	32	41	34	35	41	40	37	44	46	46	43
Dependent	20	18	20	19	27	18	23	24	16	18	21	14	12	12	16
							Top								
Lack	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0
Random	20	18	19	19	16	17	16	15	19	19	17	16	19	18	17
Dependent	2	4	3	3	6	5	5	7	3	2	5	6	3	4	5
							Bottom								
Lack	1	1	1	4	1	1	2	1	3	1	2	2	2	2	1
Random	19	23	20	18	16	24	18	20	22	21	20	28	27	28	26
Dependent	18	14	17	16	21	13	18	17	13	16	16	8	9	8	11

Now taking in turn the groups of Institution variables that comprise the Expected sets for each Effects variable (see the previous section), we find simultaneous dependences with Experience in the following countries:

Petty and Life (Education, Health, Police, Civil Registry and Taxes): Romania, Bulgaria, Ukraine, Finland, Argentina and Moldova.

Grand (Parliament, Parties, Judiciary and Private Sector): Romania, Ukraine and Argentina.

Business (Taxes, Utilities, Customs, Parties, Parliament, Private Sector and Judiciary): Romania and Ukraine.

Politics (Parliament, Parties and Judiciary): Argentina, Russia, Romania, Bulgaria, Ukraine, Denmark, Estonia and Brazil.

Assessing the correlations between Institution variables and Experience exclusively among the countries for which the variables are dependent produces much better results than those depicted in the previous section, with many of them reaching levels where it becomes plausible not to reject opinions as explanations of experience (Table 13). Observe, however, that for each opinion variable, such explanatory power can only be hypothesised among its respective set of countries where dependences were found with Experience. For only three countries this happens simultaneously for all variables.

Table 13: Correlations between Institutions and Experience among countries where there is dependence between the variables.

	R	# of countries
Customs	0.551	20
Education	0.537	18
Judiciary	0.566	20
Health	0.535	19
Police	0.719	27
Parties	0.376	18
Parliament	0.467	23
Civil Registry	0.565	24
Utilities	0.267	16
Taxes	0.508	18
Private Sector	0.501	21

The significance of the tests of dependence must not be downplayed. In those countries where opinions about corruption seem to be random relative to Experience there is no reason to assume that such opinions hold a relationship with pragmatic experience. Only for those countries where dependences are found there are grounds to posit that experience is likely to influence the formation of opinions. Furthermore, the varying pattern of dependences from country to country provides evidence that the weight with which experience informs opinions, if they actually do it, varies. This means that countries cannot be compared on the basis of opinions with a view of providing comparative pictures of the presumable actual corruption happening there. The varying dependences entail that there is no common referential system upon which opinions can be projected.

In sharp contrast with Experience, the tests for dependence among the perceptions variables of the Effects group produce much more consistent results, with the exception – again – of Perspective (Table 14). Thus, for instance, only six out of 60 countries failed to exhibit pairwise dependences between Grand, Business and Politics. This means that it is likely that asking one single question (say, impact of corruption in Business) will suffice to give a very good clue about opinions on Grand corruption or Politics. By the same token, given that in 49 countries Petty corruption and impact on personal/family Life are dependent, it probably suffices to ask one question in order to get a good indication of the other. This will be addressed in more detail below.

Table 14: Summary of tests for dependence between the Effects variables.

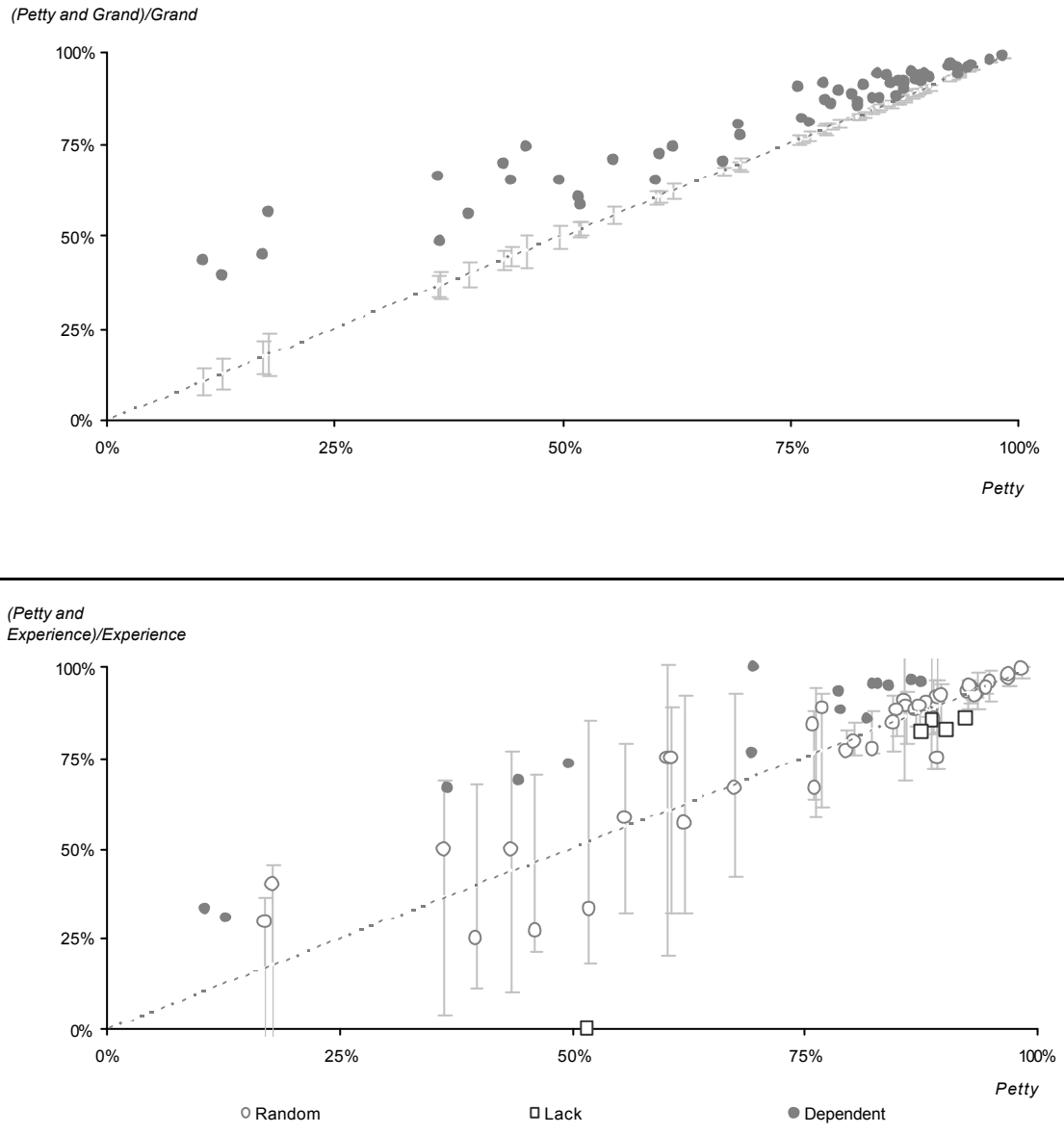
		Grand	*Life*	*Business*	*Politics*	*Perspective*
Petty	Lack	0	0	0	0	1
	Random	0	11	10	11	24
	Dependent	60	49	50	49	35
Grand	Lack		0	0	0	1
	Random		10	5	3	26
	Dependent		50	55	57	33
Life	Lack			0	0	1
	Random			5	3	27
	Dependent			55	57	32
Business	Lack				0	2
	Random				0	30
	Dependent				60	28
Politics	Lack					3
	Random					25
	Dependent					32

Firstly, we briefly observe that, once again, Perspective stands apart. For this variable, Table 14 shows that the field is more or less evenly divided between randomness and dependence. Thus, the answers to questions about the future of corruption in countries do not consistently help to understand either experiences with bribery or other opinions about the subject, thus being probably related to other aspirations, hopes and general outlooks not captured by the other corruption variables.

The differences between the behaviours of the variables one to another (and the import of the dependence tests) can be observed in graphical form. Graph 5 shows the relationship of the percentages of Petty in the overall sample (in the abscissas) versus the subsets of respondents that have had

coincident responses about Petty and Grand and about Petty and Experience (ordinates). The differences between the two dispersions are visually obvious. While the graph of coincident responses for Petty and Experience is irregular, the corresponding graph of Petty and Grand is much better behaved.

Graph 5: Petty and subsets of Petty (all countries).



The diagonals correspond to the equal percentage lines. The margins defining the intervals for randomness at the chosen level of 90%, relative to the diagonals, are indicated in the top graph for all countries and in the bottom one just for those which turned out to be random. If a point falls beyond the confidence interval, then the variables are dependent for that country (positively dependent if above, negatively if below). If a point falls within the interval, the variables are relatively random. By definition, all points representing positive dependence are situated above the diagonal. The converse is not true. Merely being above the line does not guarantee that the variables are significantly connected. Thus, most the above-diagonal points in the bottom graph, depicting the relationship with Experience, correspond to countries in which the variables are relatively random, that is, not significantly positively connected. Observe that even using a much more accommodating level of confidence (that is, narrowing the margin for randomness and thus widening the interval of acceptance) does not lead to markedly better results (cf. note 15). Merely studying correlations between the tested variable and the intersections would not reveal the fundamental differences between the two situations. Thus, Petty vs. (Petty + Grand)/Grand has an R^2 of 0.93, while for Petty vs. (Petty + Experience)/Experience the R^2 is 0.71, which is not small. However, one would stray away from the actual picture if one were to conclude from the latter number that the relationship is strong.

A further set of tests concern the relationship between Effects and Institutions. For each Effects variable (excepting Perspective) we defined a further dummy variable built from it's Expected set (cf. the previous section), using the following criterion: If n is the number of variables comprising a given Expected set (e.g. for Petty, $n = 5$), then the dummy has a 1 in every position for which there are at least $n - 2$ coincidences in the same position among the n variables. We then assess the dependence of this dummy vis à vis the corresponding Effects variable. The results are summarised in Table 15.

Table 15: Summary of tests for dependence between Effects and Expected sets of Institutions..

	Petty	*Grand*	*Life*	*Business*	*Politics*
			Top		
Lack	0	0	0	0	0
Random	4	4	5	3	1
Dependent	18	18	17	18	21

	Bottom				
Lack	1	0	0	0	0
Random	8	2	4	7	1
Dependent	29	36	34	31	37

These results show that in most countries, and especially among the Bottom subset, opinions about Institutions are strongly linked with opinions about the Effects of bribery in those spheres of life presumably linked with certain selected sets of institutions. The percentages of dependences for the entire set of 60 countries are respectively Petty: 78%. Grand: 90%; Life: 85%; Business: 82%; Politics: 97%. Simultaneous dependences between Effects and Expected sets happen in 35 countries. Limiting the set of countries to these and performing multiple regressions with the variables do not lead to better results than were obtained in the previous section (pp. 15ff).

Further tests on dependence can be performed on the countries' raw data. Thus, for instance, we can study dependences between the variables restricted to the subsets of respondents that experienced bribery. The outcomes are presented in Table 16.

Table 16: Cross-dependences of Effects with Experience (all countries).

		Grand	*Life*	*Business*	*Politics*	*Perspective*
Petty	Lack	44	0	0	0	1
	Random	15	41	42	43	50
	Dependent	1	19	18	17	9
Grand	Lack		3	3	4	3
	Random		43	35	36	46
	Dependent		14	22	20	11
Life	Lack			0	0	0
	Random			5	5	5
	Dependent			55	55	55
Business	Lack				22	20
	Random				29	35
	Dependent				9	5
Politics	Lack					7
	Random					41
	Dependent					12

The interpretation of this table is as follows. In the subset of respondents that reported having had experience with corruption (country average of about 1.5% in the Top and 17.3% in the Bottom group), assessments of Petty corruption (say) are shown to be related to assessments of Grand cor-

ruption (say) in just one country. Impact on Life, on the other hand, seems to be connected by dependence with three other variables (Business, Politics and Perspective) in no less than 55 countries. Therefore, for people who experienced bribery, asking questions about the impact of corruption in Life suffices to inform about opinions on impact on Business and on Politics, as well as their Perspective about the future. However, among respondents that have had contact with bribery, the same variable Life does not show to be dependent towards Petty and Grand in a great many number of countries (respectively 19 and 14).

Besides concluding once again that experience does not appear to be significantly connected with opinions in the majority of countries and that the outlook about the future shows no discernible pattern vis à vis other variables, the results of this section have a further important consequence, namely, that since the relationship between perceptions and experience vary widely, ranking countries according to perceptions collected among the general population does not furnish reliable information about the comparative levels of actual over-the-counter bribery occurring in those countries. However, they do inform about other opinions. This is the case between opinions about the Effects of corruption and also between Institutions and Effects. Whereas there is lack of evidence that perceptions are linked with experience, it is likely that opinions depend on other perceptions – so that, in order to change perceptions, one gets better expectations by acting on opinions rather than on reality.[16]

This furnishes a rather depressing justification for the panorama one witnesses in many countries, where marketing efforts aimed at forming populations' opinions are endowed with more resources than efforts to change the objective conditions under which the State functions. Such strategies are only reinforced when perceptions about corruption (and about other themes) are overvalued and confused with the actual levels of the phenomena they purport to reflect. By taking that course, one is induced to equate "real levels" of corruption with perceptions – as the media does –, and so becoming ensnared in an imaginary world of hunches.

[16] Excessive reliance on perceptions might also have a direct prejudicial impact. On the basis of data from a survey conducted in 1998 in the Ukraine, Cábelková (2001) concludes that "[…] the more corrupt the person perceives the institutions to be the more willing he/she is to give bribes".

Other opinions

Besides surveying information and perceptions about corruption, the GCB inquired about other topics. The questions were the same as those concerning the Petty and Grand variables (see p. 46), and focused on high Prices/inflation, Poverty, Environmental problems, human Rights violations, insecurity/crime/Violence/terrorism and Jobs.

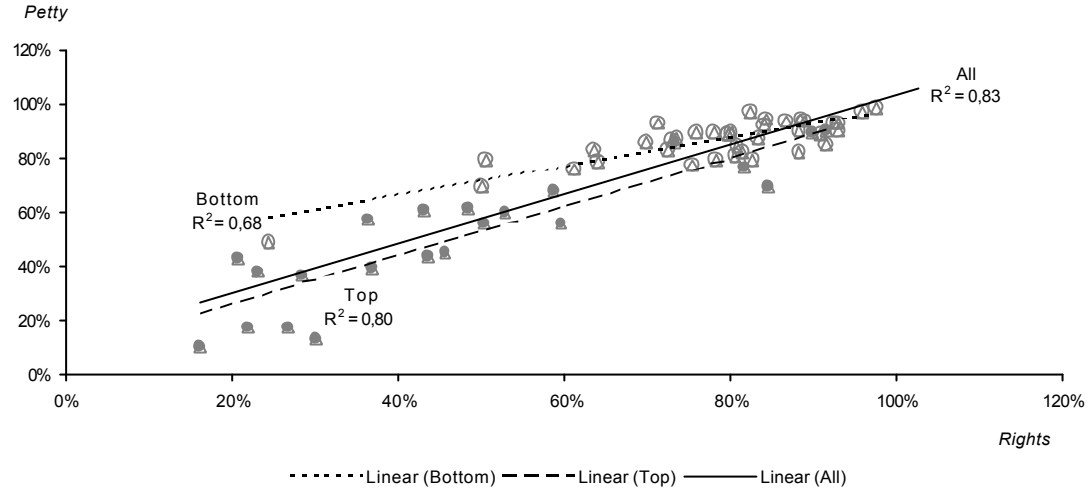
It is illuminating to examine the relationships between these other opinion variables and those concerning corruption. The lowest correlations are those involving Experience and Perspective. Midway are Politics, Business and Life, with occasional falls to very low levels. At the top are Petty and Grand, with high correlations with the majority of the other variables. With the exception of Jobs, the correlations are generally better in the Top subset than in the Bottom, indicating that opinions about Effects tend to be more uniform among the former than among the latter. Table 17 summarizes the numbers for these variables, and Graph 6 depicts, as an example, the relationship between the opinions about petty corruption and human rights violations.

Table 17: Correlations of Effects with General variables.

	Prices	*Poverty*	*Environment*	*Rights*	*Violence*	*Jobs*
			All			
Petty	0.817	0.909	0.821	0.913	0.859	0.730
Grand	0.793	0.889	0.828	0.865	0.894	0.686
			Top 22			
Petty	0.684	0.871	0.886	0.894	0.825	0.519
Grand	0.662	0.877	0.861	0.810	0.875	0.464
			Bottom 38			
Petty	0.549	0.614	0.661	0.826	0.728	0.616
Grand	0.589	0.548	0.618	0.788	0.731	0.660

All correlations Significant (2-tailed) at the 0.01 level.

Graph 6: Human Rights vs. Petty.



Although Top countries tend to concentrate towards lower percentages and Bottom towards higher ones, the correlations within the subsets are very similar (respectively 0.894 and 0.826). The overall correlation of 0.913 results in a very high R^2 of 0.83 (see the graph). This means that opinions about human Rights violations seem a very good candidate as predictor of opinions about Petty corruption. In order to verify whether or not this makes sense, we will take recourse once again to tests of dependence between the variables. Table 18 shows the results for the whole set of countries.

Table 18: Dependences of General variables with Effects and Experience.

		Petty	*Grand*	*Life*	*Business*	*Politics*	*Perspective*	*Experience*
Prices	Lack	0	0	0	3	2	0	8
	Random	14	12	28	26	31	18	48
	Dependent	46	48	32	31	27	42	4
Poverty	Lack	0	0	0	0	0	0	6
	Random	9	9	27	29	30	26	51
	Dependent	51	51	33	31	30	34	3
Environment	Lack	0	0	1	1	0	1	3
	Random	5	2	21	23	24	35	48
	Dependent	55	58	38	36	36	24	9
Rights	Lack	0	0	0	1	0	0	6
	Random	3	4	17	17	20	21	49
	Dependent	57	56	43	42	40	39	5

Table 18: Dependences of General variables with Effects and Experience.

Violence	Lack	0	0	0	1	0	1	3
	Random	1	6	19	18	19	29	53
	Dependent	59	54	41	41	41	30	4
Jobs	Lack	0	0	1	1	0	1	9
	Random	11	7	33	27	24	33	50
	Dependent	49	53	26	32	36	26	1

There would be no reason to expect dependence between opinions about Poverty etc. and Experience, and indeed it is absent in most cases. On the other hand, the perceptual variables show significant mutual dependences. This is the case especially with Petty and Grand across the board. Thus, Petty and Violence are dependent (at the 90% level of confidence) in 59 out of 60 countries. (In fact, such dependence is manifest even at the 99.99% level of confidence). Respondents that considered Violence, crime etc. a problem in their countries were overwhelmingly those who also considered Petty corruption a problem. Similarly high rates of dependence are found with other variables. Thus, for 36 countries Petty is simultaneously dependent with the six General variables. This stimulates the conjecture that the ensemble of opinions about such issues as Violence, human Rights violations, the Environment, Poverty, are good predictors of opinions about Petty and Grand corruption. Indeed, multiple linear regressions performed on the data confirm this. Most combinations of these variables results in regressions with very good fits. A good parsimonious regression is obtained using just Poverty, Rights and Violence. Petty of country *c* can be expressed by (rounded coefficients):

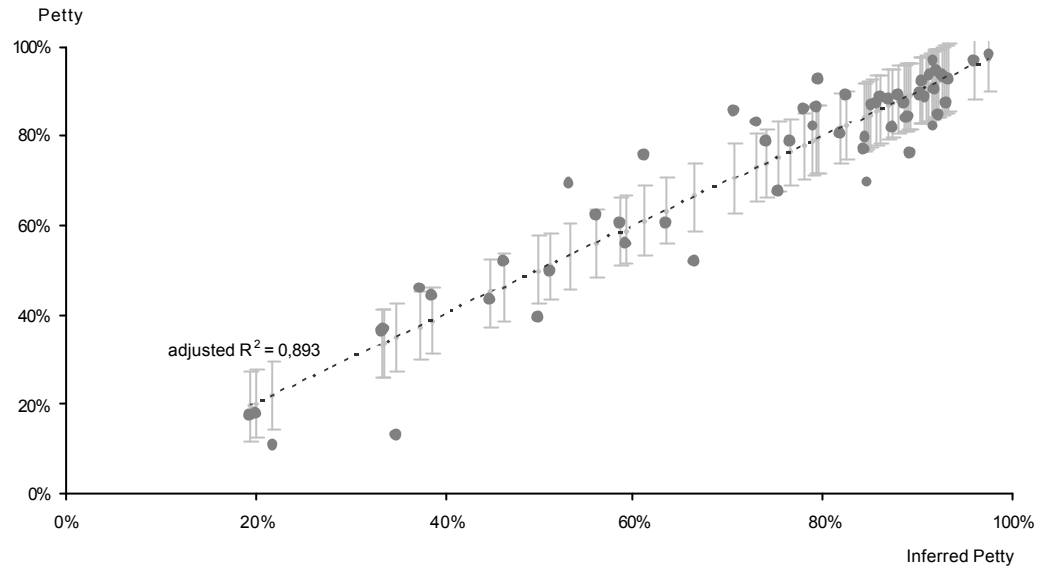
$$\text{Petty}(c) = [0.469 \times \text{Poverty}(c)] + [0.351 \times \text{Rights}(c)] + [0.334 \times \text{Violence}(c)] - 0.167$$

The fit is very good, as the adjusted R^2 for the regression of the predicted Petty vs. the observed values is 0.893, with standard error of 0.076 (Graph 7, with the standard error of the estimate shown).[17] Furthermore, we have seen that the correlation between Petty and Experience among the 60 countries is 0.531, significant at the 0.01 level. Controlling for Poverty, Rights and Violence, the correlation drops to 0.256 (non-significant), also in the income subgroups.[18]

[17] Observe that the standard error of the regression is less than the confidence interval of the CPI (average of 9.1% of that indicator's 0-10 scale).

[18] It was not possible to test the fit of the multiple regressions to the results of the GCB 2005 because for that year the corresponding report (www.transparency.org/policy_research/surveys_indices/gcb) does not include the answers to questions about other spheres of life.

Graph 7: Petty – Inferred vs. actual.



We have thus reached the conclusion that it is likely that asking the general public about their opinions about corruption does not produce much more information than is obtained by asking about poverty, human rights etc. What the GCB data show is that (pessimistic) opinions are so strongly dependent on one another that probably it suffices to assess some of them to safely project the results upon the others. Since the only question about the actual experiences of respondents concerned bribery, the relationship of other opinions with personal contact with assorted social phenomena cannot be ascertained. It would hazardous to project onto these relationships the same conclusions reached about corruption variables – but these conclusions prompt questions that future surveys could strive to answer. Where do opinions about violence, security, poverty, the environment etc. come from? Of course, for many of the "general" questions asked by the GCB, personal or household experiences are not relevant. However, this does not void the question: Why is it that people consider that their countries confront grave environmental problems (say)? Are those problems actually present, or were they simply projected over the public's mind by the media and pressure groups? It is well known and often pointed out that the media, or interest groups, are not equivalently trustworthy across countries. The opinions they project not always are grounded in persuasive evidence (in a great part of the world – and for some issues some maintain that in almost all countries – one could even assume that they seldom are). So, in many countries opinions collected about many issues would be subjected at least to doubt about their foundations.

Consequences for the interpretation of the CPI

The findings of the present study beg similar questions about perceptions of corruption collected among transnational business representatives and institutions that have them as their primary public, which are at the heart of international indicators of perceptions of corruption. Of special interest is the most prestigious one, Transparency International Corruption Perceptions Index (CPI). That index is built on the basis of a number of other indicators and is computed in isolation, not including other queries[19] – and, anyhow, the primary data are not available, so tests for dependence are out of the question. In particular, there is no explicit "experience" variable with which to compare the CPI. The most one can do within the present scope is to compare the CPI with the GCB averages, keeping in mind that the samples are not similar.[20] Since the CPI is an ordinal ranking and not an actual measure of a dimension of social life, the following uses the ranks of the countries arising from the GCB percentages (weighted) and from the CPI scores, in this case relative to our set of countries (not relative to the whole set of 146 countries included in the CPI-2004). Table 19 depicts the rank correlations.[21]

Table 19: Rank correlations with the CPI.

	Petty	*Grand*	*Life*	*Business*	*Politics*	*Perspective*	*Experience*
All	0.752**	0.656**	0.689**	0.402**	0.230	-0.038	0.784**
Top 22	0.828**	0.811**	0.615**	0.613**	0.751**	0.184	-0.271
Bottom 38	0.336*	0.184	0.302	-0.007	-0.242	0.217	0.442**

** Significant (2-tailed) at the 0.01 level. * At the 0.05 level.

For some of the variables, the correlations are moderately high across the whole set of countries, but once again this is misleading. Calculating them among Top/Bottom countries produces

[19] For an explanation of the methodology, see Lambsdorff (2004). Responsibilities about the index are not totally clear. According to the press release announcing the 2004 index, "The CPI methodology used is reviewed by a Steering Committee consisting of leading international experts in the fields of corruption, econometrics and statistics. Members of the Steering Committee make suggestions for improving the CPI, but the management of TI takes the final decisions on the methodology used." Neither the members of the Steering Committee nor the persons taking methodological decisions are identified.

[20] The same analyses reported in this section were performed over the "Control of Corruption" indicator from the KK set of governance indicators Kaufmann, Kraay and Mastruzzi (2003), as well as over the "Corruption" component of the World Economic Forum's Growth Competitive Index (2003) (WEF 2004), with closely similar results.

[21] Observe that for the Top and Bottom subsets we used the rank orders in the total sets, not the rank orders within the subsets, i.e., countries were not re-ranked within the subsets.

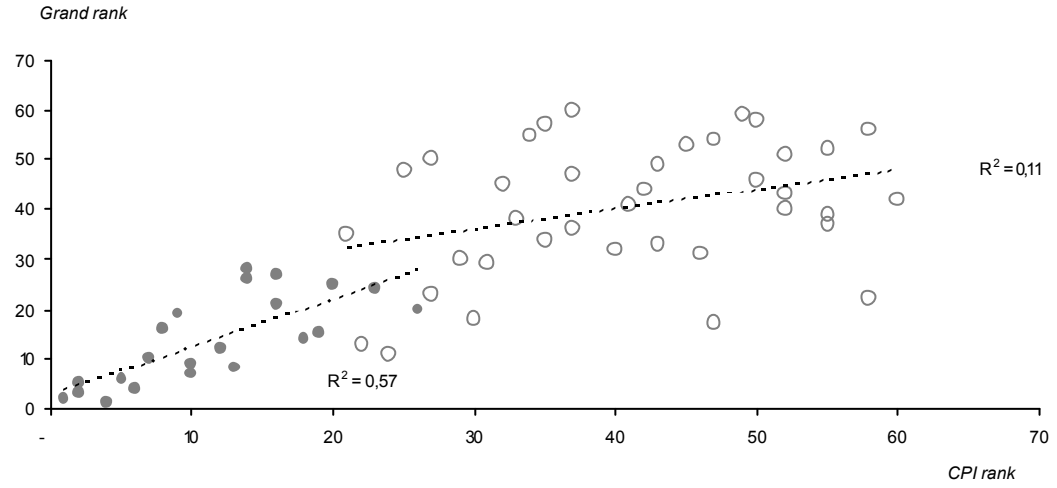
disparate outcomes. Looking first at the perceptual variables and at the Top group, it is seen that the CPI correlates very well with assessments of Petty and Grand corruption, and decreasingly with the others (Perspective, as always, stands apart). The corresponding correlations are much worse among Bottom countries, being near zero for Business and negative for Politics, although not significantly so. The highest correlation in this group is only 0.336, with Petty. Looking now at the Experience vs. CPI rank correlations, it is negative for Top and moderate for Bottom, in that case being significant at the 0.01 level Graph 8 shows what happens in the cases of Grand and of Experience. Among Bottom countries the relationship of the CPI with either variable is weak, whereas for the Top countries Grand survives but Experience flounders. Controlling the correlations for GDP-PC, Business and Politics do not show to be significant but Experience does, and reasonably well. However, separating by income group, the correlations with opinions among Top countries are all significant but Experience is not, and all fail to achieve significance in the Bottom subset (Table 20).

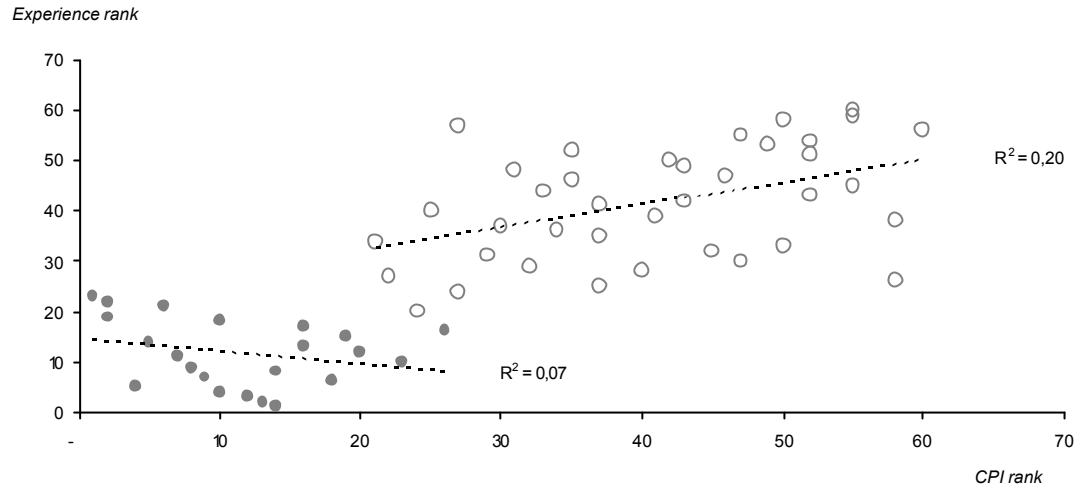
Table 20: Rank correlations with the CPI, controlled for GDP-PC.

	Petty	*Grand*	*Life*	*Business*	*Politics*	*Experience*
All	0.409**	0.310*	0.287*	0.134	-0.067	0.459**
Top 22	0.792**	0.782**	0.448*	0.532*	0.663**	-0.155
Bottom 38	0.200	0.139	0.245	0.216	-0.044	0.320

** Significant (2-tailed) at the 0.01 level. * At the 0.05 level.

Graph 8: CPI ranks vs. ranks of Experience and Grand.





It thus appears that one is partially justified in using the CPI as a proxy to in-country opinions about certain types of corruption in the ensemble of richer countries (Petty, Grand), but not concerning actual bribery affecting citizens either among Top (the small correlation not being significant) or Bottom (significant, but small) countries. One may speculate that citizens of Top countries tend to be more informed than citizens of Bottom countries, so that among them the opinion about Grand corruption might be informed by the Corruption Perceptions Index itself, while for Bottom countries the CPI does not influence common opinion. This would be natural considering that the reach of information about the CPI, as a media feature, is affected by different levels of access to information enjoyed by citizens of rich and poor countries.

A converse speculation would be that, since the great majority of persons whose opinions are used to build the CPI are connected to transnational business, thus being either citizens of rich countries or under the influence of their outlooks and values,[22] their opinions about their own countries would be bound to be concordant in the CPI and in the GCB.

[22] On the basis of statistical arguments, Lambsdorff argues that the sources used in the CPI exhibit low vulnerability to cultural differences and cultural bias. He also argues that the concept of corruption the respondents probably have in mind is reasonably uniform. A similar disclaimer about possible bias acting on assessments of corruption is stated by Kaufmann et al. about the KK indicators. However, there is one peculiarity that all respondents of the CPI share (and most of them in the case of the KK), namely, they are connected to business. Besides observing that the lack of objective data on the extent of corruption forces one to stick to subjective assessments of corruption, Treisman, (2000) argues that using them is justified →

As Andvig (2004) puts it: "[…] I will expect strong correlation and spillover effects: The experts read the same reports and gauge other experts' statements. Since the assessments are often not based on individual experience, when expert X claims corruption in A is very high, expert Z has no clear evidence to the contrary, so when knowing X's statement it may be optimal to make an assessment close to his. Informational cascades may easily develop in this context. The fact that the TI index in particular is widely published reinforces the argument. The case of information given by expatriate businessmen is somewhat different, but they are not likely to base their assessments to only on their own, independent experience either. Most will be based upon other businessmen's communication. The degree to which that will contain private information will at best depend on how much genuine information other expatriates reveal."

The conclusions of the previous sections – that opinions about corruption do not likely arise from actual experience with bribery, but are more probably linked with other opinions – can be extended to the CPI only insofar as one keeps in mind that the universes in question are different. The GCB reports on data collected among the general population, and experience most likely means experience with (petty) bribery, while the CPI is built on the opinions of business people involved in international business transactions.

Questions about the connection of the CPI (or the KK) ranking and the actual experience of respondents with (presumably grand) corruption are certainly in line, but they cannot be answered within the present scope. However, it would be of the utmost importance for the very credibility of these indicators that efforts be made to answer the question.

To simply assume that the CPI and other such indices, as the KK or the World Economic Forum's, are good indicators of actual corruption happening in countries simply because the opinions they depict come from business-related persons rather than from common citizens would unjustifiably attribute to the former special critical attributes that would allow them to better "filter" stray influences when forming their opinions. Whereas the evidence furnished by the GCB is that experi-

→

by the high correlations observed both between different indices and between year-to-year editions of the same indices. The findings of the present study indeed confirm that opinions are mutually coherent, but since their relationship with the objective data represented by the experiences reported are very weak or nonexistent, such coherence casts a different light on perceptions, namely, that perhaps what they indicate is the pervasiveness of a certain type of bias.

ence enters at best discreetly into people's opinion-forming mechanisms. Business people are just people.

Consequences for the interpretation of the DKM index

Dreher et al. develop a model (to which we will refer as DKM) to predict the level of corruption of about 100 countries with an aim at assessing its impact in terms of percentages of GDP per capita. Their model uses a series of structural "causes" and a set of quantitative indicators. The causes include the following political, historical, economic and socio-cultural factors: Age of democracy, the latitude of the country, school enrolment rate and dummies for legal origin (whether British, French etc.) and rule of law.[23] The indicators are GDP per capita, capital restrictions, the amount of private credit and the apparent consumption of cement.

As the model is intended to run over extended periods of time (70's to mid-90's), not all parameters are available for all countries and all years. So, the model has a more restricted version ("parsimonious"), where, among the "causes", only school enrolment rate and rule of law are retained. It is to this parsimonious model and its result for 1997 (the last year for which there is a DKM index) that we shall refer.

Admittedly, since the DKM index refers to 1997 and the GCB to 2004, a direct comparison is not strictly appropriate. Perhaps we should compare the GCB with a projection of the DKM index to 2004. Such projection, however, would have to take into account hypotheses about changes in the index's parameters – which we are not prepared to do. However, very high correlations hold across the years for the DKM index.[24] This furnishes an excuse to go ahead with the exercise.

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[23] See Dreher et al. (2004) for the sources for the variables.

[24] Table below. DKM depicts an increasing gap of theoretical GDP per capita losses due to corruption between rich and poor countries. Whereas for 1980 the minimum estimated loss was 30% (Denmark) and the maximum 52% (a number of countries, mainly in Africa), making for a ratio of about 1.7, for 1997 the minimum was 11% (Norway) and the maximum about 67% (Guinea-Bissau), a ratio of more than 6.

	1990	*1985*	*1980*
1997	0,992	0,987	0,971
1990		0,995	0,981
1985			0,987

A total of 48 countries appear simultaneously in DKM and GCB. Twenty belong to the upper income tier and 28 to the lower tier (including as before Greece and South Korea). Differently from the CPI, DKM is not an ordinal list, and so we will examine the values of the variables instead of their ranks. The correlations (Table 21) follow the same pattern observed before: Some point to stronger relationships, but in fact there are marked differences between the Top and Bottom subsets, where most are not significant. Business and Politics are significantly negatively correlated with DKM among Bottom countries, and DKM exhibits a moderately high significant correlation with Experience. Controlling for GDP-PC deteriorates all correlations , some quite drastically, excepting with Business and Politics in the Top group.

Table 21: Correlations with DKM 1997.

	All	*Top 20*	*Bottom 28*
Petty	0.745**	0.288	0.348
Grand	0.655**	0.266	0.053
Life	0.731**	0.462*	0.172
Business	0.551**	0.435	-0.462*
Politics	0.508**	0.569**	-0.466*
Experience	0.674**	0.124	0.524**
Controlled for GDP-PC			
Petty	-0.012	-0.040	0.175
Grand	0.027	0.034	-0.021
Life	0.120	0.138	0.111
Business	0.386**	0.493*	-0.249
Politics	0.313*	0.508*	-0.239
Experience	0.218	0.338	0.372

** Significant (2-tailed) at the 0.01 level. * At the 0.05 level.

Objections

Throughout this study, one central assumption has guided the reasoning: That experiences reported by respondents in surveys are better indicators of actual bribery than opinions. However, it could be argued that individual experiences as reported in the survey provide a limited, if not false, picture of the phenomenon, and that opinions, being informed by a broader set of information, furnish better insights on what is happening in any given country.

This could happen, for instance, if there is no confidence in the answers to the question about experience: Since paying bribes is a crime, respondents could have lied to the question as it was formulated. In order to avoid directly asking someone if he paid a bribe, when possible it is prefer-

able to attribute the act to someone else and ask whether the respondent was informed about it.[25] For instance, "Do you personally know somebody who has paid a bribe [to this or that] within such and such timeframe?" The question Gallup asked was: "In the past 12 months, have you or anyone living in your household paid a bribe in any form?" This is quite direct. Since in the circumstances there is no way to check whether a hypothetical indirect question would lead to different results than what obtained, the matter cannot be pursued further here.

Applied to the GCB, the argument would carry more weight concerning grand corruption or how corruption affects business. Arguably, personal experience with petty corruption collected among the general population would not reasonably inform about what is going on around big money. For this type of perceptions, there are other surveys that presumably furnish better assessments, such as the World Bank's BEEPS, which is conducted among well-placed sample groups.

If we accept the answers as truthful, it is difficult to see how the argument leaning towards the informative value of opinions would stand concerning perceptions about the extent of petty corruption or the impact of bribery on people's life. One could perhaps conjecture about effects of other information, besides experience, interfering on opinions about those issues. However, evidence about the existence of such "hidden" variables would have to be presented.

In any case, if one is to give more weight to perceptions than to reported experience, one would still have to assume that opinions collected among the general population concerning petty corruption and the impact of bribery on life were reasonably informed by something else than experience. Clarifying that matter is likely to be impossible. Measuring the amount and especially the quality of information individuals receive would depend on external references establishing not only quantities but also the objectivity of information and of information-transforming mechanisms such as e.g. the media. Consensually accepting such measures and using them methodologically in sample design seems far-fetched. In the absence of better information about how opinions are formed and being materially unable to directly observe and measure the actual incidence of corruption, one is forced to give weight primarily to data derived from claims of direct experiences as reported by those who hold to have been subjected to or have participated in acts of bribery. As has been argued

[25] The objection and argument were proposed by Daniel Kaufmann, in a personal exchange.

above, failure to do this entails a high risk of producing misleading indicators, the consequences of which can be significantly negative.[26]

Daniel Treisman argues[27] that a high correlation between answers about personal experience with bribery and opinions about the prevalence of corruption in any given sector is not necessarily to be expected, because bribery might affect some sectors more intensely than others. To this it can be added that individuals do not necessarily interact with all State institutions, and thus personal experience would be limited. Along similar lines, Eric Uslaner challenges the very motivation of inquiring about the relationship between reported experiences and opinions:[28] There would be no reason why variables about opinions and about experiences should be highly correlated, since to bribe one must use various services, and Daniel Kaufmann et. al. clearly shows that the poor often forgo services because they cannot afford bribes.

Of course, in order to ascertain each sector's level of actual bribery, it would be necessary to actually survey the matter, by asking about bribes specifically prcticed in a number of sectors. This poses a significant practical problem, because the frequency of reportings of (overall) bribery is usually low, and restricting the questions to each particular sector would lead to still lower rates. This means that in order to achieve representative samples at the sublevel of each institution's users, overall samples would have to be quite numerous – and this costs a lot of money.

However, at least qualitative data is available in selected countries. A survey conducted in the city of São Paulo (Brazil) by Transparencia Brasil, the World Bank and the municipal administration asked for the experience of citizens with bribery relating to fifteen different services.[29] Percentages ranged from 0.0% of actual users to 7.7%. The weighted average was 3.0%. Zero or near-zero percentages referred to services that would be improbably affected by corruption: public transportation and information-related services. Eliminating those, the minimum level was 1.3% (in nurseries). The rest turned around 4%, but actual users varied, in most cases being well below one would consider significant levels. Anyway, such qualitative results indicate that if bribery is present

[26] See a methodological critique of the KK indicators in Arndt and Oman (2006). For the reply, see Kaufmann et. al., (2006).

[27] Private communication.

[28] Private communication.

[29] Speck and Weber Abramo (2003: 42). Firms' and public officials' experiences were also asked.

in an administration, then it would manifest itself in several institutions, and not just a few. This is confirmed (always keeping in mind the non-representativeness of the subsamples) by the results of the same survey about the experience with bribery in eleven administrative processes reported by private firms.

In any case, Treisman's and Uslaner' arguments would have to be applied also to perceptions about institutions. If bribery affects institutions differently, and if perceptions indeed give a better inkling of "real" corruption than experience, then this should be reflected in the correlations between the perceptual variables. However, as can be seen in Table 22, the correlations within the income groups are high practically across the board, with few exceptions.

Table 22: Correlations among Institutions variables.

Top	*Customs*	*Education*	*Judiciary*	*Health*	*Police*	*Parties*	*Parliament*	*Civil Registry*	*Utilities*	*Taxes*
Customs	1									
Education	0.711	1								
Judiciary	0.681	0.742	1							
Health	0.513	0.864	0.618	1						
Police	0.693	0.773	0.681	0.724	1					
Parties	0.737	0.777	0.767	0.788	0.729	1				
Parliament	0.868	0.779	0.718	0.732	0.694	0.915	1			
Civil Registry	0.533	0.548	0.481	0.614	0.308	0.641	0.633	1		
Utilities	0.822	0.837	0.695	0.701	0.602	0.804	0.887	0.636	1	
Taxes	0.606	0.893	0.795	0.874	0.658	0.801	0.736	0.704	0.787	1
Experience	-0.231	-0.424	-0.306	-0.295	-0.425	-0.231	-0.186	0.015	-0.160	-0.283
Bottom	*Customs*	*Education*	*Judiciary*	*Health*	*Police*	*Parties*	*Parliament*	*Civil Registry*	*Utilities*	*Taxes*
Customs	1									
Education	0.438	1								
Judiciary	0.658	0.695	1							
Health	0.235	0.623	0.523	1						
Police	0.608	0.690	0.685	0.195	1					
Parties	0.468	0.594	0.708	0.251	0.714	1				
Parliament	0.482	0.572	0.759	0.280	0.617	0.918	1			
Civil Registry	0.382	0.665	0.675	0.382	0.625	0.514	0.507	1		
Utilities	0.397	0.761	0.592	0.451	0.674	0.574	0.462	0.779	1	
Taxes	0.532	0.685	0.579	0.527	0.588	0.457	0.469	0.553	0.764	1
Experience	0.486	0.043	0.256	0.041	0.331	-0.010	-0.000	0.090	0.027	0.241

Measures of bribery and corruption are essentially policy tools. Their role is to guide effective policy formation and review. This analysis doe not junk perceptions but provides for the first time not simply a general health warning on their use (of which there is now a fairly significant literature), but also a rigorous approach to their use and so to avoid the common abuse of the apparent information in data. The approach set out above provides a coherent method to interpret what are the likely causal links between recorded data and incidence in different socio-economic and institutional settings and thus attempts to improve the targeting of policy to create both measures of the scale and scope of bribery and so to provide clearer positive incentives for reform.

Annex I – Questions and dummies

1. These days, citizens face a number of problems. In your opinion, how would you describe the following problems facing your country? For each of the problems that I read out would you say that it is a very big problem in your country, a fairly big problem, not a particularly big problem or not a problem at all, DK/DA?

1.a. High prices/Inflation; Poverty; Environmental problems; Human rights violations; Insecurity/crimes/violence/terrorism; Jobs.

1.b. Petty or administrative corruption that is corruption in ordinary people's daily lives, such as bribes paid for licences, traffic violations, etc./ Grand or political corruption that is corruption at the highest levels of society, by leading political elites, major companies, etc.

2. Some people believe that corruption affects different spheres of life in this country. In your view, does corruption affect […] not at all, to a small extent, to a moderate extent or to a large extent, DK/DA?

Your personal and family life; The business environment; Political life.

3. To what extent do you perceive the following sectors in this country to be affected by corruption? Please answer on a scale from 1 to 5 (1 meaning not at all corrupt, 5 meaning extremely corrupt). Of course you can use in-between scores as well.

Customs/Education system/Legal system-Judiciary/Medical services/Police/Political parties/Parliament-Legislature/Registry and permit services (civil registry for birth, marriage, licences, permits)/ Utilities (telephone, electricity, water etc.)/Tax revenue/Business- private sector/Media/The military/NGOs (non governmental organizations)/Religious bodies

4. Do you expect the level of corruption in the next 3 years to change? Will it increase a lot, increase a little, stay the same, decrease a little, decrease a lot. DK/DA?

5. In the past 12 months, have you or anyone living in your household paid a bribe in any form? (Living in household = people included in your house e.g. parents, children, etc.). [Yes/No/DK/DA]

We are interested in the following events built from the above. Abusing the language, we will refer to the corresponding dummy variables by the same names. We will also group variables into categories. The dummies are presented already grouped.

Group 1. Effects of corruption

Petty, Grand: Respondents answering "a very big problem" and "a fairly big problem" to question 1.

Life, Business and Politics: Respondents answering "to a moderate extent" and "to a large extent" to question 2.

Perspective: Respondents answering "will increase a lot" and "will increase a little" to question 4.

Group 2. Institutions

Customs, Education, Judiciary, Health, Police, Parties, Parliament, Civil Registry, Utilities, Taxes, Private Sector, Media, Military, NGOs, Religions: Respondents giving scores of 4 and 5 to question 3.

Group 3. Experience

Experience: Respondents answering "Yes" to question 5.

Group 4. General issues

Prices, Poverty, Environment, (Human) Rights, Violence and Jobs: Respondents answering "a very big problem" and "a fairly big problem" to question 1.

Annex II – Place selections

For each country and each variable, a binary sequence was built by attributing the value "1" to the event under scrutiny (e.g., all answers "Yes" given to the Experience question) and "0" otherwise. The sequences were tested for pairwase dependence by performing on each of them place-selections based on the other sequences. A place-selection is a sampling procedure defined by a recursive rule that selects positions from a sequence, with the only provision that one is barred from using the outcome of a position to determine whether or not that position will be selected. The frequencies of the studied event in the original sequence and in the subsequence defined by the selection are then compared. If the sampled frequency falls within a previously defined interval, the tested sequence is declared random relative to the place selection in question and non-random otherwise. The interval of confidence depends on both the original and the sampled subsequence, as well as on an arbitrarily defined level (what we are willing to accept/reject). The distribution arising from the sampling procedure is hypergeometric, and the usual practice is to approximate it by the binomial distribution.

However, the fit between the hypergeometric distribution and its binomial approximation depends on the relationship between the frequency of the observed event in the original sequence and the size of the sampling produced by the test. For sampling procedures in which those numbers are of comparable orders of magnitude, the binomial approximation to the hypergeometric makes too many sequences pass as random relative to tests (see Example 4, below). An alternative criterion, developed by the author,[30] does not make use of such approximation. The interval of confidence for each test is determined by the expression

$$\varepsilon(r) = \lambda_{\pi}\sqrt{\frac{f(1-f)(n-r)}{nr}}\text{, where}$$

n is the length of the sequence;

f is the frequency of the studied event in the sequence;[31]

r is the number of elements selected by the rule;

[30] Weber Abramo (1993).

[31] Observe that this is not the weighted frequency for the variable, but the actual frequency of the event in the sequence.

λ_π is the parameter of the elected level of confidence, corresponding to $\pi = 2\{1-\varphi(\lambda_\pi)\}$, where φ is the normal distribution function. This means that, given a sequence, we are willing to consider that of all possible results of a place-selection, the sequence will be non-random relative to π of them.

The choice of a level of confidence is arbitrary. There is no compelling reason to favour a level of confidence of 95% (say) over a level of 99%. The only reason why some levels are used and others are not is practical: In statistical practice as applied to the sciences, levels of confidence of 99%, 95% and 90% function adequately vis à vis observed phenomena, depending on samples sizes, sensitivity of measurements and a host of other practical factors.

In our case, we want to be as accommodating as possible concerning the rigour of the tests we want to apply, in order not to be guilty of bias towards rejection. We will use tests in two different circumstances: To ascertain whether or not variables are interdependent and to check out the integrity of the raw data. In the first case, we do not want to reject too many relationships as random. Thus, we will use a level of confidence of 90% for these tests (we will accept as dependent as much as 10% of all possible outcomes of tests). In the second case, integrity of the raw data means their not exhibiting regularities, that is, their being random relative to recursive procedures such as counting alternate elements and counting consecutive occurrences of an event. By observing the same directive of not being too discriminatory, we will use for these tests a level of confidence of 99% (we will only reject 1% of all possible outcomes for each test).

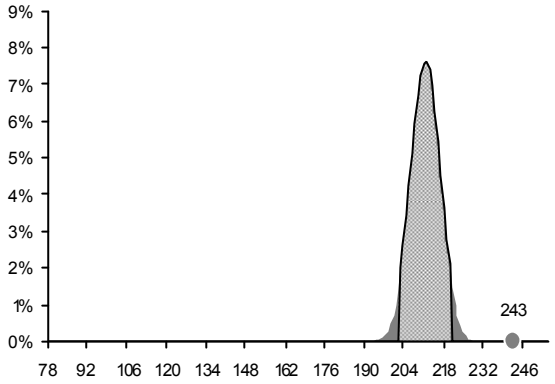
To apply a test, the absolute value δ of the distance between the sampled frequency and the frequency of the event in the original sequence is compared with $\varepsilon(r)$. If $\delta > \varepsilon(r)$, the sequence is not random relative to the test.[32] Testing for randomness is the same thing as testing for dependence. Two sequences that are mutually dependent (at a given confidence level) are not relatively random and conversely.

The testing can be depicted graphically. For a given sequence and all tests that pick up r positions, we plot the distribution of all possible outcomes, mark the area corresponding to the confidence interval for randomness and plot the outcome of the application of the test in question. If the

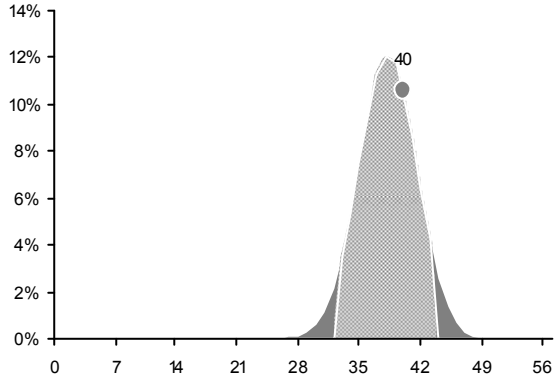
[32] The margin $\varepsilon(r)$ must not be confused with the margin of error arising from the sampling of the country's population used to collect the data. $\varepsilon(r)$ is intrinsic to the sequences under test.

outcome falls within the confidence interval, the sequences are declared mutually random at that level and mutually dependent otherwise. Three examples are given below (at the 90% confidence level): The abscissas correspond to the possible outcomes of the application of the test (the number of possible coincident responses between the two variables in question) and the ordinates to the probabilities of getting them. Of course, by construction the integral of the curve bounding the shaded area corresponds to $1 - \pi = 90\%$ of the solid area.

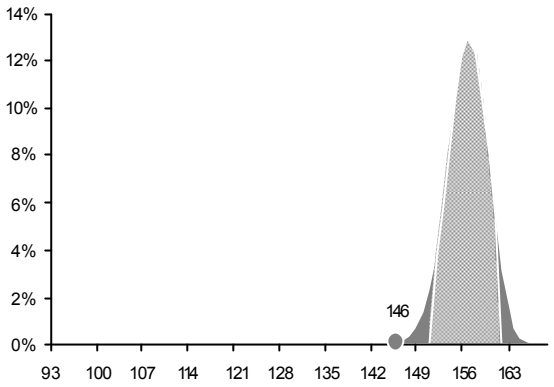
Example 1: Experience vs. Petty for Romania – Dependent by excess.



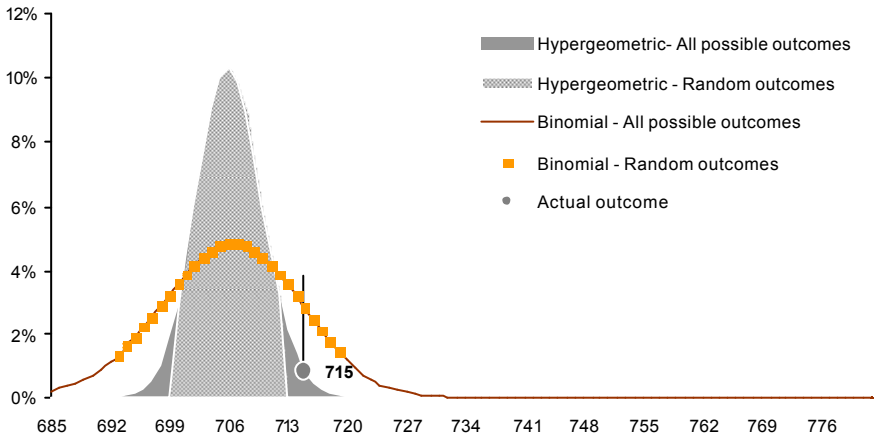
Example 2: Experience vs. Life for Peru – Random.



Example 3: Experience vs. Grand for India – Dependent by deficiency.



Example 4: Grand vs. Life for the Philippines – Hypergeometric vs. binomial.



As the binomial distribution is less peaked and more spread-out than the hypergeometric, using the former approximation to the latter results in the outcome being random according to it and non-random according to the hypergeometric.

Another way to express the difference of using the hypergeometric or the binomial distributions in testing procedures is to observe that, in the general case, when passing from one to the other one must adjust the confidence level: For a given confidence level, the hypergeometric distribution admits for smaller margins of confidence than the binomial. Thus, if one wants to stick with the binomial approximation to the hypergeometric distribution in testing set-ups, then one must use smaller confidence levels than it would be the case if the approximation were not used. For instance, in the situation of Example 4, the chosen confidence level of 90% for the actual testing set-up would have to be lowered to 55% if the binomial distribution were used and one wanted to keep

rejecting/accepting the same proportions of actually possible outcomes of the tests – which are hypergeometrically, and not binomially, distributed.

Of course, when the frequencies of the observed events in the sequences under test and the sizes of the samplings obey to the conditions authorising the use of the binomial approximation to the hypergeometric, then no adjustment is necessary – such conditions being in fact equivalent to retaining the same confidence level This is what happens in the following example from Bulgaria, for the relationship between Politics and Experience. The relevant frequencies are:

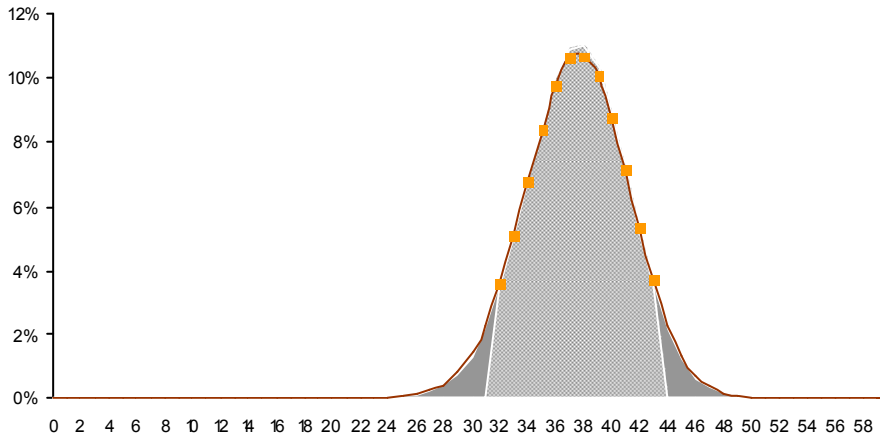
Sample – 1010

Politics – 642 (63.6%)

Experience – 59 (5.8%)

Under these conditions, at the confidence level of 90% the margin ε (r) = 0.100, while the margin for the binomial, at the same confidence level, is 0.103, so the approximation would be admissible.

Example 5: Politics vs. Experience for Bulgaria.



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Data

	Prices	Poverty	Enviroment	Rights	Vidence	Jobs	Petty	Grand	Life	Business	Politics	Perspective
Top												
Luxembourg	61.5%	52.1%	55.5%	45.6%	41.6%	75.4%	44.8%	37.9%	15.4%	35.1%	45.3%	36.9%
Norway	44.6%	43.7%	59.9%	29.9%	61.7%	54.7%	13.2%	26.6%	4.9%	64.9%	57.9%	59.3%
Switzerland	65.8%	65.9%	72.6%	36.7%	64.1%	77.4%	39.0%	52.6%	13.4%	69.3%	58.0%	51.2%
Denmark	34.5%	21.0%	49.2%	21.9%	53.8%	57.8%	16.9%	24.7%	8.9%	34.3%	42.0%	28.3%
Ireland	91.9%	69.7%	72.0%	48.5%	80.2%	46.3%	61.1%	83.0%	25.6%	72.0%	80.5%	28.5%
United States	68.1%	75.1%	67.9%	59.6%	85.5%	71.2%	55.5%	76.7%	43.3%	74.9%	74.5%	40.4%
Iceland	78.2%	59.7%	39.3%	23.2%	44.0%	38.3%	37.7%	49.0%	15.7%	62.4%	61.8%	40.3%
Japan	73.3%	65.5%	89.7%	73.4%	91.4%	92.6%	85.6%	90.3%	22.4%	36.1%	40.2%	39.9%
Netherlands	83.0%	47.7%	58.6%	20.7%	77.6%	82.4%	42.7%	51.2%	8.5%	56.7%	40.1%	57.9%
Austria	72.3%	51.2%	48.7%	28.4%	48.3%	79.7%	36.4%	43.4%	11.8%	22.9%	45.6%	46.4%
Finland	63.9%	41.2%	28.9%	16.1%	37.3%	88.2%	10.1%	21.8%	7.4%	30.6%	42.9%	43.2%
United Kingdom	64.3%	62.9%	74.1%	50.4%	84.3%	56.6%	55.5%	60.8%	20.6%	62.1%	66.3%	40.5%
Germany	73.7%	69.6%	60.3%	36.3%	71.5%	99.2%	57.0%	81.1%	26.0%	32.8%	77.3%	60.5%
France	93.4%	96.9%	90.4%	81.7%	95.0%	98.7%	76.1%	90.2%	14.9%	37.3%	75.6%	31.1%
Canada	66.8%	80.0%	80.8%	52.9%	65.1%	68.4%	59.8%	72.2%	42.5%	72.4%	76.3%	38.0%
Italy	97.7%	94.7%	93.9%	91.6%	94.6%	96.2%	89.8%	94.7%	21.3%	83.4%	86.2%	49.2%
Hong Kong	39.2%	69.9%	59.9%	43.5%	41.5%	84.3%	43.5%	48.7%	44.1%	58.0%	67.5%	33.1%
Singapore	61.1%	35.6%	22.1%	26.9%	28.5%	63.0%	17.5%	19.6%	22.2%	39.8%	36.4%	13.7%
Spain	87.6%	86.5%	86.2%	84.6%	93.0%	89.8%	69.5%	81.1%	25.9%	63.2%	74.3%	40.2%
Israel	61.7%	85.5%	78.9%	58.7%	91.1%	88.4%	67.6%	88.4%	51.6%	82.0%	86.7%	54.6%
Portugal	95.8%	97.0%	94.7%	90.0%	91.5%	98.7%	88.9%	85.8%	35.8%	71.1%	74.8%	55.7%
Taiwan	64.6%	62.0%	72.8%	43.0%	84.0%	74.3%	60.7%	76.5%	45.7%	86.9%	88.7%	40.3%
Averages Top	70.1%	65.2%	66.2%	48.3%	69.4%	76.4%	51.3%	61.7%	24.0%	56.7%	63.6%	42.2%
Bottom												
Greece	93.8%	91.2%	86.2%	70.0%	81.4%	96.4%	86.0%	86.4%	43.4%	78.8%	86.2%	34.8%
South Korea	96.2%	94.1%	90.5%	72.4%	77.1%	97.4%	82.7%	94.0%	77.4%	89.2%	85.3%	27.6%
Czech Republic	74.1%	60.5%	69.5%	50.1%	72.2%	87.6%	69.2%	82.6%	19.2%	68.5%	72.7%	33.7%
Estonia	75.7%	78.7%	56.2%	24.5%	67.5%	76.2%	48.3%	54.3%	10.5%	55.3%	61.2%	31.7%
Croatia	81.4%	91.9%	76.8%	72.9%	82.8%	98.0%	86.7%	83.3%	54.6%	84.3%	67.5%	25.1%
Mexico	92.8%	97.4%	93.0%	92.5%	96.3%	97.0%	92.5%	95.0%	73.8%	75.5%	79.9%	63.1%
Poland	90.9%	91.4%	77.8%	75.9%	88.4%	94.4%	89.3%	93.3%	51.6%	79.8%	84.6%	31.2%

	Prices	Poverty	Enviroment	Rights	Violence	Jobs	Petty	Grand	Life	Business	Politics	Perspective
Lithuania	89.1%	96.9%	84.9%	91.5%	94.3%	97.7%	85.0%	92.2%	43.9%	75.9%	76.1%	35.0%
Latvia	88.8%	93.6%	68.9%	64.1%	74.0%	94.7%	78.7%	82.5%	29.9%	71.4%	78.2%	22.6%
Costa Rica	93.0%	95.7%	78.7%	78.1%	97.0%	88.8%	89.0%	94.1%	51.3%	69.0%	78.9%	76.3%
Malaysia	74.0%	62.9%	73.4%	61.3%	83.7%	74.1%	76.0%	77.2%	15.1%	72.3%	73.9%	29.8%
Turkey	95.8%	97.1%	91.2%	93.0%	94.9%	96.8%	92.6%	93.9%	72.8%	73.1%	71.5%	30.4%
South Africa	87.6%	97.8%	81.2%	79.7%	96.5%	98.7%	88.5%	84.3%	50.9%	72.8%	73.2%	37.6%
Venezuela	89.6%	95.6%	72.8%	88.4%	97.2%	95.6%	82.4%	92.8%	64.8%	74.0%	72.0%	44.0%
Argentina	87.1%	99.0%	78.8%	84.4%	98.6%	97.1%	94.5%	96.9%	53.4%	76.5%	85.2%	21.3%
Uruguay	95.0%	98.5%	69.5%	75.5%	84.5%	98.5%	77.0%	93.0%	44.0%	71.0%	80.5%	21.5%
Russia	92.2%	94.1%	83.7%	78.4%	87.9%	87.0%	79.5%	84.5%	25.4%	47.4%	57.5%	38.3%
Brazil	97.1%	99.4%	96.5%	97.7%	99.8%	98.8%	98.9%	98.6%	73.7%	81.4%	88.8%	43.0%
Romania	86.2%	89.0%	70.4%	63.6%	77.6%	92.5%	83.2%	87.6%	51.7%	63.9%	71.4%	26.1%
Bulgaria	93.0%	97.6%	66.1%	50.5%	89.1%	96.8%	79.4%	84.2%	26.9%	53.4%	64.4%	16.2%
Macedonia	91.8%	98.6%	70.9%	81.0%	91.8%	97.5%	84.5%	93.4%	52.9%	62.6%	63.5%	38.0%
Peru	83.5%	97.0%	81.5%	86.8%	95.5%	96.8%	93.5%	95.3%	67.0%	74.8%	85.0%	53.8%
Ecuador	98.0%	99.4%	94.3%	95.9%	97.1%	89.3%	97.0%	97.8%	74.1%	77.2%	71.1%	75.3%
Guatemala	97.0%	93.0%	85.3%	93.0%	96.7%	93.3%	90.3%	94.0%	64.3%	75.0%	61.7%	65.3%
BiH	86.2%	97.0%	81.2%	88.2%	91.2%	98.2%	89.8%	91.6%	61.8%	73.8%	72.4%	25.2%
Albania	100.0%	100.0%	97.3%	82.4%	97.2%	97.7%	97.3%	98.3%	28.0%	92.1%	77.3%	31.2%
Bolivia	92.2%	97.4%	77.5%	88.6%	94.2%	97.9%	94.4%	97.8%	63.8%	58.9%	91.8%	32.0%
Ukraine	94.4%	98.0%	90.7%	81.6%	88.3%	93.1%	81.8%	87.2%	34.3%	60.6%	70.3%	31.4%
Philippines	96.7%	94.6%	80.2%	79.6%	91.2%	94.9%	88.9%	90.4%	78.2%	81.6%	79.2%	69.2%
Indonesia	93.5%	97.2%	83.0%	90.9%	97.0%	99.1%	88.8%	97.0%	49.5%	75.0%	76.7%	15.3%
Georgia	96.4%	99.2%	81.4%	82.8%	81.9%	99.3%	79.4%	78.2%	48.9%	59.3%	59.9%	3.7%
Cameroon	82.5%	96.0%	62.2%	80.0%	84.9%	90.9%	89.0%	80.9%	49.2%	73.9%	71.4%	52.6%
India	96.9%	96.8%	82.6%	84.2%	96.1%	97.6%	92.4%	92.8%	65.4%	62.9%	62.9%	80.4%
Moldova	92.3%	93.3%	79.0%	83.4%	84.4%	93.5%	87.4%	87.4%	45.6%	68.9%	74.4%	45.3%
Pakistan	94.7%	89.9%	76.9%	80.5%	84.0%	83.8%	80.4%	79.6%	52.4%	58.4%	55.4%	55.7%
Kenya	97.2%	98.1%	67.4%	73.6%	91.8%	98.0%	87.5%	87.5%	66.5%	73.2%	65.4%	35.0%
Nigeria	99.0%	99.0%	84.1%	89.0%	94.5%	99.3%	93.4%	97.7%	49.0%	77.3%	79.7%	60.5%
Ghana	89.2%	95.5%	90.1%	71.3%	74.9%	95.3%	92.7%	87.7%	64.1%	71.6%	65.8%	27.7%
Averages Bottom	90.9%	93.8%	79.8%	78.3%	88.8%	94.2%	86.0%	89.1%	51.3%	71.3%	73.5%	39.1%
Averages All	83.3%	83.3%	74.8%	67.3%	81.7%	87.7%	73.3%	79.0%	41.3%	66.0%	69.9%	40.3%

	Customs	Education	Judiciary	Health	Police	Parties	Parliament	Civil Registry	Utilities	Taxes	Private Sector	Media	Military	NGOs	Religions	Experience	GDP-PC (a)	CPI score (b)	CPI rank (c)	DKM (d)
Top																				
Luxembourg	11.4%	8.7%	20.8%	10.5%	17.3%	28.8%	16.9%	8.4%	7.3%	14.4%	19.9%	20.6%	6.7%	7.3%	14.8%	2.1%	58985	8.4	10	#N/A
Norway	9.0%	5.2%	11.6%	14.1%	10.1%	31.9%	21.2%	5.8%	15.6%	9.3%	42.8%	36.9%	11.7%	29.2%	46.5%	2.6%	48337	8.9	6	(0.535)
Switzerland	10.4%	10.3%	14.6%	15.6%	12.4%	34.7%	21.5%	10.4%	14.3%	24.4%	26.6%	33.9%	14.7%	9.8%	13.2%	1.8%	43391	9.1	5	(0.905)
Denmark	5.5%	4.3%	10.6%	9.9%	7.1%	17.6%	14.5%	2.4%	3.3%	6.4%	10.6%	19.9%	6.8%	6.0%	9.6%	2.4%	39449	9.5	2	(0.523)
Ireland	12.2%	14.2%	47.6%	31.7%	37.8%	66.2%	41.5%	10.2%	19.1%	37.6%	35.6%	26.7%	10.7%	11.5%	30.9%	1.1%	38302	7.5	14	(0.203)
United States	20.1%	28.1%	45.4%	37.4%	28.8%	56.1%	42.3%	12.2%	31.1%	38.9%	31.0%	53.7%	23.5%	15.8%	23.0%	0.3%	37819	7.5	14	(0.459)
Iceland	10.1%	5.9%	12.4%	9.7%	8.3%	32.2%	19.5%	5.2%	16.0%	5.7%	29.2%	27.7%	0.0%	5.7%	5.3%	2.9%	36190	9.5	2	(0.332)
Japan	22.8%	30.3%	27.9%	56.5%	64.5%	76.5%	54.7%	14.0%	28.5%	41.6%	34.6%	34.8%	23.8%	18.4%	48.8%	0.8%	33678	6.9	18	(0.871)
Netherlands	17.6%	6.8%	22.1%	9.2%	20.4%	24.2%	19.6%	14.1%	17.9%	18.6%	25.5%	27.6%	12.5%	8.7%	14.0%	1.6%	31721	8.7	7	(0.506)
Austria	12.5%	11.3%	16.2%	15.9%	20.3%	38.4%	23.7%	15.6%	12.0%	19.9%	25.2%	21.8%	14.5%	10.3%	16.6%	0.6%	31083	8.4	10	(0.490)
Finland	4.2%	3.8%	9.6%	5.9%	5.2%	28.5%	20.0%	4.9%	9.2%	9.8%	19.8%	26.9%	3.7%	7.3%	14.6%	3.1%	30922	9.7	1	(0.386)
United Kingdom	18.0%	18.3%	35.0%	19.5%	25.6%	45.1%	37.1%	14.8%	14.8%	23.6%	29.5%	39.8%	20.4%	15.2%	22.9%	1.2%	30140	8.6	8	(0.295)
Germany	15.8%	16.8%	23.5%	22.9%	14.1%	63.8%	35.5%	9.0%	21.0%	30.6%	35.4%	36.3%	18.9%	15.4%	19.3%	0.6%	29173	8.2	12	(0.514)
France	22.6%	8.6%	41.2%	13.5%	33.9%	71.3%	40.8%	13.6%	12.8%	20.4%	48.2%	47.1%	13.8%	13.4%	13.2%	1.7%	28635	7.1	16	(0.428)
Canada	18.7%	21.0%	39.4%	24.9%	25.4%	59.8%	48.8%	17.4%	31.6%	38.7%	29.8%	37.7%	21.3%	15.2%	21.5%	0.8%	27536	8.5	9	(0.261)
Italy	26.1%	20.0%	40.0%	46.5%	21.7%	74.1%	59.2%	47.3%	29.7%	49.9%	47.5%	44.3%	19.9%	17.6%	15.9%	2.0%	25593	4.8	26	(0.221)
Hong Kong	17.8%	11.2%	17.7%	9.7%	29.4%	30.2%	16.9%	7.5%	8.3%	11.0%	34.3%	30.7%	9.2%	13.3%	6.9%	0.6%	22757	8.0	13	(0.393)
Singapore	4.9%	4.0%	5.1%	4.1%	5.5%	6.2%	4.5%	2.0%	3.2%	5.0%	12.6%	8.7%	5.0%	9.7%	7.1%	0.8%	21523	9.3	4	(0.345)
Spain	22.2%	24.1%	46.8%	23.7%	31.1%	58.8%	34.5%	27.2%	32.5%	44.8%	44.7%	50.2%	23.0%	17.5%	35.2%	2.0%	20601	7.1	16	(0.144)
Israel	33.5%	25.3%	28.2%	34.8%	33.0%	82.5%	71.9%	39.2%	42.3%	41.8%	34.3%	36.2%	18.3%	38.1%	64.6%	1.9%	16911	6.4	19	(0.087)
Portugal	23.8%	29.9%	45.0%	42.9%	40.4%	59.4%	41.2%	19.3%	27.5%	61.5%	38.9%	33.1%	17.2%	27.0%	23.0%	1.7%	14410	6.3	20	(0.043)
Taiwan	43.8%	21.6%	43.8%	18.0%	41.5%	63.5%	68.4%	6.0%	37.6%	26.9%	26.8%	23.5%	40.4%	8.3%	18.4%	1.4%	12545	5.6	23	#N/A
Averages Top	17.4%	15.0%	27.5%	21.7%	24.3%	47.7%	34.3%	13.9%	19.8%	26.4%	31.0%	32.6%	15.3%	14.6%	22.1%	1.6%				
Bottom																				
Greece	46.0%	28.6%	38.0%	69.2%	44.4%	62.4%	35.4%	29.4%	36.2%	62.2%	36.2%	53.6%	17.2%	16.0%	29.0%	11.4%	15625	4.3	30	0.016
South Korea	55.6%	51.8%	52.6%	45.2%	62.4%	85.6%	89.4%	14.8%	15.3%	48.6%	45.2%	55.8%	48.6%	23.5%	34.5%	6.4%	12631	4.5	29	(0.042)
Czech Republic	43.6%	16.7%	50.4%	29.4%	59.6%	60.1%	48.1%	11.7%	8.3%	26.8%	31.2%	26.8%	22.1%	16.7%	10.2%	20.9%	8792	4.2	31	0.086
Estonia	19.5%	10.2%	23.7%	19.6%	22.7%	37.5%	23.3%	20.1%	12.9%	12.4%	26.0%	17.0%	6.0%	12.6%	4.0%	5.9%	6472	6.0	22	#N/A
Croatia	36.2%	28.0%	59.8%	52.4%	40.6%	51.0%	46.9%	43.9%	35.2%	43.0%	49.3%	30.8%	19.8%	15.2%	23.2%	9.2%	6403	3.5	37	#N/A
Mexico	64.0%	47.2%	77.2%	48.2%	85.2%	87.3%	74.0%	61.6%	59.8%	68.6%	57.5%	51.4%	43.2%	44.5%	39.2%	19.2%	6112	3.6	35	0.183
Poland	35.0%	47.3%	68.7%	74.6%	65.4%	73.7%	70.6%	55.6%	38.0%	48.7%	58.9%	46.5%	36.3%	38.8%	39.4%	4.6%	5399	3.5	37	0.258
Lithuania	67.8%	30.5%	71.6%	61.8%	69.7%	71.2%	71.6%	26.8%	24.0%	42.9%	44.5%	33.0%	13.9%	21.0%	12.8%	31.8%	5267	4.6	27	#N/A
Latvia	64.5%	28.1%	62.7%	51.2%	58.4%	64.0%	53.9%	27.2%	15.5%	42.9%	47.9%	30.4%	14.3%	10.1%	9.0%	18.0%	4716	4.0	33	#N/A

	Customs	Education	Judiciary	Health	Police	Parties	Parliament	Civil Registry	Utilities	Taxes	Private Sector	Media	Military	NGOs	Religions	Experience	GDP-PC (a)	CPI score (b)	CPI rank (c)	DKM (d)
Costa Rica	73.9%	63.1%	68.9%	84.0%	82.3%	90.3%	80.5%	53.4%	75.4%	81.8%	64.0%	57.9%	0.0%	57.5%	76.8%	14.0%	4208	4.9	25	0.206
Malaysia	41.2%	11.4%	22.8%	7.9%	60.1%	47.2%	28.7%	32.5%	9.6%	14.7%	26.3%	10.1%	9.5%	10.4%	4.1%	2.6%	4151	5.0	24	0.068
Turkey	59.8%	56.9%	55.9%	62.2%	58.6%	59.1%	51.5%	52.2%	59.9%	64.8%	60.4%	51.2%	37.3%	42.9%	38.0%	6.1%	3452	3.2	40	0.229
South Africa	33.0%	42.4%	43.8%	48.3%	60.2%	59.4%	44.2%	48.5%	35.4%	28.8%	36.4%	26.7%	26.7%	27.6%	19.1%	3.1%	3444	4.6	27	0.176
Venezuela	64.4%	69.6%	83.2%	68.8%	77.2%	75.6%	77.2%	60.0%	54.8%	67.2%	64.8%	74.8%	61.2%	50.8%	47.6%	8.8%	3338	2.3	50	0.210
Argentina	60.9%	34.1%	75.4%	37.8%	81.3%	86.8%	83.7%	51.5%	46.3%	47.9%	46.2%	43.7%	36.7%	23.8%	30.8%	6.3%	3325	2.5	47	0.092
Uruguay	72.0%	35.0%	59.5%	42.5%	80.0%	80.0%	68.0%	31.0%	34.5%	43.5%	48.0%	46.0%	46.0%	21.0%	35.5%	9.0%	3196	6.2	21	0.136
Russia	47.1%	49.5%	57.6%	45.0%	65.8%	55.5%	56.4%	40.4%	26.3%	44.6%	53.8%	43.9%	45.6%	22.9%	14.3%	21.1%	3020	2.8	43	#N/A
Brazil	58.3%	62.0%	75.7%	64.9%	86.9%	84.3%	78.7%	52.9%	58.8%	78.1%	58.7%	52.2%	44.0%	35.9%	37.4%	11.1%	2837	3.9	34	0.225
Romania	65.7%	33.0%	66.8%	59.3%	55.3%	64.9%	56.1%	36.8%	16.6%	20.0%	47.5%	15.2%	10.8%	14.3%	10.1%	24.6%	2553	2.9	42	0.303
Bulgaria	77.3%	33.7%	68.3%	56.1%	53.6%	61.2%	56.1%	43.0%	23.1%	39.1%	45.7%	22.1%	17.3%	16.4%	14.1%	6.2%	2550	4.1	32	0.285
Macedonia	71.0%	57.5%	74.7%	73.7%	55.7%	66.7%	64.1%	39.5%	35.1%	50.2%	55.4%	38.8%	27.5%	34.7%	36.2%	8.8%	2254	2.7	45	#N/A
Peru	64.5%	69.8%	88.3%	67.8%	88.0%	89.8%	86.3%	76.8%	65.5%	70.3%	62.3%	75.3%	75.3%	58.5%	28.5%	14.3%	2131	3.5	37	0.219
Ecuador	82.4%	48.5%	86.6%	40.8%	82.5%	97.4%	96.8%	82.1%	56.4%	51.1%	40.9%	33.9%	56.7%	33.0%	30.3%	27.4%	1957	2.4	49	0.265
Guatemala	70.3%	60.7%	72.7%	58.3%	74.7%	75.0%	69.0%	59.0%	64.7%	73.7%	65.0%	59.7%	61.0%	55.0%	45.3%	17.0%	1898	2.2	52	0.239
BiH	63.6%	51.2%	65.6%	62.6%	62.0%	70.4%	65.6%	41.4%	31.2%	42.4%	61.6%	37.8%	21.2%	27.6%	28.4%	13.0%	1807	3.1	41	#N/A
Albania	59.3%	4.9%	35.2%	40.8%	26.7%	25.3%	31.9%	17.5%	5.8%	50.0%	47.8%	9.9%	6.2%	2.0%	4.2%	30.0%	1758	2.5	47	#N/A
Bolivia	72.9%	28.0%	66.8%	28.6%	78.8%	87.5%	77.2%	30.4%	30.5%	51.3%	37.3%	24.7%	50.5%	20.0%	14.6%	29.5%	1055	2.2	52	0.247
Ukraine	59.0%	54.2%	65.2%	66.2%	71.7%	61.5%	55.9%	39.4%	27.8%	60.7%	55.3%	34.9%	26.1%	18.6%	9.2%	25.3%	1032	2.2	52	0.300
Philippines	65.5%	44.1%	55.3%	40.5%	77.2%	74.2%	73.1%	53.7%	42.5%	60.2%	43.7%	29.1%	45.0%	29.2%	14.4%	20.7%	964	2.6	46	0.236
Indonesia	79.6%	46.0%	76.2%	31.4%	76.3%	85.0%	81.5%	55.7%	38.6%	68.2%	56.9%	19.5%	41.7%	15.9%	9.6%	12.8%	954	2.0	58	0.181
Georgia	48.8%	28.1%	43.7%	38.8%	58.2%	29.6%	26.6%	30.6%	22.5%	45.2%	23.4%	10.8%	17.5%	11.5%	6.5%	5.6%	769	2.0	58	#N/A
Cameroon	75.2%	50.0%	73.6%	58.3%	82.5%	49.2%	34.1%	47.4%	37.4%	63.1%	49.3%	41.4%	47.7%	16.6%	13.2%	52.4%	740	2.1	55	0.281
India	59.9%	64.8%	69.8%	64.5%	86.6%	87.7%	67.7%	59.0%	51.2%	46.2%	30.3%	27.1%	13.1%	27.4%	29.0%	16.1%	543	2.8	43	0.292
Moldova	78.3%	52.4%	68.3%	65.0%	80.9%	61.2%	62.3%	62.5%	29.9%	56.8%	56.4%	33.2%	29.2%	23.2%	13.6%	32.2%	536	2.3	50	#N/A
Pakistan	61.2%	49.6%	63.5%	56.8%	74.3%	62.0%	56.4%	57.7%	56.9%	59.2%	50.6%	41.0%	38.6%	39.2%	33.9%	19.0%	493	2.1	55	0.289
Kenya	62.1%	34.1%	62.7%	53.9%	78.4%	68.0%	63.2%	60.3%	43.7%	61.8%	51.8%	24.7%	32.6%	31.3%	24.6%	36.1%	436	2.1	55	0.284
Nigeria	71.8%	66.3%	66.5%	40.9%	94.0%	87.4%	76.9%	46.2%	53.4%	63.6%	50.2%	34.1%	69.5%	27.7%	19.8%	31.5%	415	1.6	60	0.334
Ghana	78.2%	52.7%	58.0%	42.6%	86.8%	56.1%	30.1%	43.4%	64.9%	58.8%	40.9%	28.4%	19.2%	21.3%	25.6%	26.6%	384	3.6	35	0.319
Averages Bottom	60.8%	43.2%	62.5%	51.6%	68.6%	68.2%	60.9%	44.6%	38.0%	51.6%	48.1%	36.7%	32.5%	26.7%	24.1%	17.3%				
Averages All	44.9%	32.9%	49.7%	40.6%	52.3%	60.7%	51.1%	33.4%	31.3%	42.3%	41.8%	35.2%	26.2%	22.3%	23.4%	11.5%				

a) 2003. Source: International Monetary Fund. b) 2004. Source: Transparency International. c) Ranks within the set of 60 countries. d) 1997. Source: [Dreher et al. 2004].

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