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IMPARTIALITY AND CORRUPTION IN SWEDEN

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ABSTRACT

This paper presents data on corruption and impartiality from a unique survey with local politicians in Sweden, which includes answers from about 78 percent of the 13 361 politicians active in the 290 Swedish municipalities. On the basis of a number of questions related to impartiality and corruption, and after checking for respondent perception bias, we construct three indices: one bribery index, one partiality index and one recruitment index. The paper also assesses the external validity of these indices, using previous surveys, crime statistics and media reports on corruption. Our main conclusion after these analyses is that the indices hold water, and thus that it is worthwhile to include them in future, more explanatory studies on both causes and consequences of corruption and impartiality in Sweden.

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Introduction

Sweden is one of the countries with the lowest corruption levels in the world and is also much cleaner from corruption than it used to be (Rothstein and Teorell 2012; Transparency International 2012). It is therefore tempting to conclude that corruption and lack of impartiality are not relevant problems for Sweden. Such a conclusion is however probably flawed.¹

Recently, several reports have concluded that, although Sweden in comparison with other countries is spared from the worst excesses of corruption, it does exist and varies considerably across the country (Andersson 2012; Bergh et al. 2013; Statskontoret 2012). What is more, several corruption scandals have been exposed during the 2010s. The most well known was uncovered in the second largest city in Sweden, Gothenburg, and resulted in a huge scandal (Wångmar 2013). As a consequence, the City of Gothenburg appointed a special commission of inquiry to investigate the reasons behind this scandal. Their analyses were hampered by the lack of comparative data, however, and conclusions drawn from the inquiry were therefore quite idiosyncratic. For example, it pointed out the culture of leadership in Gothenburg as the main reason behind the scandal, which makes it hard for the results to travel (Amnå, Czarniawska and Marcusson 2013).

There are thus good reasons to study Sweden on its own merit, but perhaps even more important, there are also good reasons to move from the more cross-country comparisons mainly used in this line of research to the sub-national level. As theories in this field are often developed and tested on the same cases, we should look at new, and different, data on which to test established theories. Are, for example, the internationally established explanations for corruption and impartiality, such as economic, cultural and institutional factors also what explain variation in Sweden, or do we need to take other, maybe more particular, considerations into account in a very low corrupt country? (See for example Treisman 2007; and Dahlström, Lapuente and Teorell 2012 for overviews.)

If we could answer these questions, we would not only learn something about the Swedish case but also about how general existing theories are. The same is probably true when it comes to consequences of corruption and lack of impartiality. The comparative literature has clearly shown that the costs of corruption in human health, subjective happiness and economic growth are huge (see

¹ We would like to thank Statskontoret, and especially Johan Mörck, for generously sharing their data. We would also like to thank Gissur Erlingsson for his support of the project; Jan Teorell for constructive comments on earlier drafts of this manuscript; Mikael Gilljam and David Karlsson for inviting us to participate in KOLFU, and for very valuable comments on our items in the survey and on a draft of this manuscript. Finally, we owe special thanks to the Quality of Government Institute for making our participation in KOLFU possible.

Holmberg, Nasiritousi and Rothstein 2009 for an overview). But, is this also true within the same, and relatively well functioning system, such as in Sweden? Within country variation of corruption and impartiality provides a welcome opportunity to put questions like this to empirical tests.

A skeptic might think that Sweden would not be a good case for studying within country variation, but there are at least three conclusions from previous research that speak against this objection. First, as mentioned, corruption also exists in Sweden even though levels are relatively low (Bergh et al. 2013; Statskontoret 2012). Second, corruption in Sweden seems to be a more pressing issue on the local than on the national level. Normally, national or supranational levels are considered to be the most corrupt in the eyes of the general public. It is the other way around in Sweden. Compared to other countries, even the neighboring Nordic states, the local level sticks out as relatively corrupt (Linde and Erlingsson 2013). Third, the variation in corruption across the country seems relatively large. For instance, in some municipalities, respondents of an elite survey answered that there were no problems, while respondents in other municipalities answered that politicians were often offered bribes, that public procurement was conducted partially, and that they could easily get perks for themselves or their friends if they wanted to (Bergh et al 2013:131).

To make it possible for us and other researchers to address these and similar questions, we compiled a number of indicators of corruption and impartiality at the municipality level. The data come from a unique survey and include answers from about 78 percent of the 13 361 politicians active in the 290 Swedish municipalities. In absolute numbers, 10 491 politicians answered the questionnaire (Gilljam and Karlsson 2013).

There are however recent studies on corruption in Sweden that use an approach similar to ours. In 2008 and 2011, a group of researchers associated with the *Tillit och korruption i lokalpolitiken* (Trust and corruption in local politics) research project and *Statskontoret* (Swedish Agency for Public Management) ran two surveys on the municipal level (Bergh et al. 2013; Statskontoret 2012). Although there are several similarities between our approach and theirs, there are also important differences. First, we try to directly measure both impartiality and corruption, while the previous studies focus mainly on corruption. Second, the populations in the two studies are different, both in size and scope. We include all politicians in the municipal council in the population, and send our survey out to everyone in that population, which means that the number of respondents in our study is much larger. The other research group includes only the chairperson and the vice chairperson of the municipality executive board, and the chairperson of the municipality council. However, they also

include four top placed civil servants for each municipality. As a consequence, we can only tap into the experiences of the politicians; on the other hand, the previous studies need to rely on between one and seven answers for each municipality, while we have between 13 and 68 respondents. Third, it is probably fair to say that the approach of these previous studies is more elite, viewing the interviewees as informants, while our approach is more inclusive and respondent oriented. All in all, we believe that, while previous studies are very valuable, our study adds both a new measure of impartiality and a number of respondents so that it is meaningful to discuss levels in individual municipalities.

The goals of this paper are rather limited. It takes a first, but for any analyst interested in the data, important step by describing the data collection process and evaluating the quality of the data. What is more, we build three indices, one of the levels of partiality and two relating to corrupt practices: one for bribery and one for non-meritocratic recruitment of civil servants. Ideally these indices can be used as either dependent or independent variables in coming studies of the causes and consequences of corruption on the local level in Sweden.

The rest of the paper is organized in the following way: first, we describe the data collection process in more detail, including the design of the survey and its underlying rationale. Second, we examine response frequencies and potential respondents' perception bias. We conclude this section by suggesting three indices of partiality, bribery and recruitment in Swedish local governments. In the third section, we validate the indices against another similar survey, as well against objective indicators. Fourth, and finally, we summarize our findings.

Data collection

It is hard to design accurate and comparable measures of corruption and impartiality. The main reason is of course that corruption is illegal and impartiality is a strong norm in most modern societies. Actors involved therefore have strong incentives to hide what they are doing, which makes research on the prevalence of corruption difficult. Moreover, not long ago, several scholars were doubtful of the negative consequences of corruption and even argued that criticism of corruption exhibited signs of moral panic (Leff 1964; Nye 1967).

For these reasons, there were long no broad comparisons in corruption and impartiality, and corruption research was thus based merely on case studies. This changed during the 1990s, and the international research community has taken several steps towards broader comparisons, mainly

between countries, but to some extent also over time. Very simplified, corruption and impartiality have been measured in three different ways (for a more detailed summary of the existing corruption measures and the criticism against them, see Teorell 2010): first, and probably most common, are the perception based measures, among which Transparency International's *Corruption Perception Index* (CPI) and the World Bank's *Control of Corruption Index* (CCI) are the best known. Both indices are based on a large number of underlying sources, including perceptions of the level of corruption made by experts, businessmen and the general public (Transparency International 2012; Kaufmann, Kraay and Masturuzzi 2009). Although often used in research, they are also widely criticized (see for example Anderson and Heywood 2009). Second, experience-based measures have been used more and more in the last years. One example of this is a large survey to more than 30 000 European citizens (Charron, Lapuente and Rothstein 2013). This survey asks ordinary citizens about their experience of, for example, paying bribes in their contact with police, schools and the health sector. Critiques of the perception-based measures often prefer the experience-based measures (Treisman 2007). Third, and finally, there are different versions of more objective measures. These can be constructed for example from convictions in corruption cases (Chang, Golden and Hill 2010), media reports (Nyblade and Reed 2009) or "kick-back" costs in infrastructural construction projects (Golden and Picci 2005).

Based on these experiences on the international level and on what we already know about the Swedish case, we opted for a data collection strategy of a broad web survey with Swedish politicians at the local level.

The survey was conducted in 2012-2013, and the total population was 13 361 persons. E-mail addresses to all politicians were collected through contacts with local government offices, national, regional and local party organizations and, finally, through phone contact with politicians themselves. After an initial e-mail containing the link to the survey together with a round of e-mail reminders, non-responding politicians were contacted by telephone. Respondents who preferred to respond on a paper questionnaire were given the opportunity to do so. The ambitious data collection strategy yielded an average response rate of 78 percent, with over 50 percent respondents in 288 of the 290 municipalities, making it a unique survey of all local politicians in a Sweden (Gilljam and Karlsson 2013). In total, the survey included 60 questions on a broad set of topics. The questions related to corruption and impartiality were a minor part of the questionnaire and were placed close to the end.

Theoretically, we tried to capture both impartiality and corruption. Impartiality in the exercise of public power has been suggested to be the basic norm for high quality institutions and has largely influenced the debate in recent time (Rothstein and Teorell 2008; but see also North, Wallis and Weingast 2009). At the same time, there are only a few examples of research in which impartiality is actually measured (see however Rothstein and Teorell 2012 for an exception). When it comes to corruption, we start from the standard definition used by most empirically oriented researchers in this field, namely that corruption is the abuse of public office for private gain (Rose-Ackerman 1978; Treisman 2000).

Two different batteries of questions are used to measure the concepts. In both cases we wanted to come as close to the respondents' own experience as possible, without losing too many respondents. As corruption is illegal and impartiality is highly normative, we were afraid that questions directly related to the respondent would yield extremely low response rates and small variation (basically no one would be expected to admit having been involved in illegal activities). Previous surveys on the same topic in Sweden had struggled with both of these problems (Bergh et al. 2013; Statskontoret 2012). For instance, in surveys 2008 and 2011 where local politicians and civil servants were asked how often they were offered bribes, only 0.2 (2008) and 0.1 (2011) percent answered "very often" or "reasonably often", while 99.5 (2008) and 99.3 (2011) percent answered "never" or "very seldom" (Bergh et al. 2013). We therefore tried to strike a balance between utilizing the central positions of our respondents, and thus tapping into their experience of how the municipality works, without asking about their personal involvement.

The impartiality battery starts with a definition of impartiality and continues to ask about the extent to which allocation of apartments in public housing, building permits, environmental permissions, public procurement and recruitment of public servants were made in an impartial manner in the municipality, on a five-point scale, where 1 indicates little impartiality and 5 indicates much impartiality.²

The corruption battery has five items, with different statements about abuse of public office in the municipality. Two of them are directly related to taking or paying bribes. The survey asks, for example, to what extent it has occurred that a businessman offered a bribe to an official that was

² In Swedish: "Med opartiskhet menas att inga ovidkommande hänsyn tas när beslut fattas, till exempel till individer, företag eller grupper. I vilken utsträckning uppfattar du att följande typer av ärenden behandlas opartiskt i din kommun?"

handling a public procurement during this election term. Another question asks to what extent it occurs that an official takes bribes for services included in her job.³

We included two further batteries in the survey. The first tries to capture the corruption risk, and thus asks about the extent to which it would be hypothetically possible for someone in the respondent's position to influence implementation, policy or public procurement (again we use five items). The second instead measures the attitude to corruption, and therefore asks how acceptable the respondent thinks a set of questionable claims related to corruption is.⁴ These two batteries of questions are however not analyzed in this paper. See the appendix or the full questionnaire (in Swedish).

As mentioned in the introduction, our approach has both differences from and similarities to earlier studies. The most striking difference compared to the most comprehensive studies in Sweden is probably that our study also measures impartiality (compare with Bergh et al. 2013; Statskontoret 2012). We are closer to the earlier studies when it comes to the corruption indicators, but also here there are some differences. We have, on the one hand, because of the risk of a low response rate, chosen not to ask questions directly about how often the respondent is offered a bribe but, on the other hand, tried to tap into the respondent's experience of how the municipality works. We have also a much larger sample than previous surveys, which only included at most seven respondents from each municipality, while we have up to 68 (Bergh et al. 2013). Moreover, the population differs between our study and the previous ones. While we focus only on local politicians, they also include some top civil servants.

Compared to the international studies of corruption and impartiality, our approach has both perception and experience based elements. However, it does not involve any objective measures. In a subsequent section we therefore validate our indicators against some external sources. These include both perceptions and experiences measured through surveys, legal cases of corruption and media reports. Before we look more closely at the external validity, however, the next section will describe the results of the survey more deeply, investigate whether there are any perception biases and suggest three indices.

³ In Swedish: "Enligt din uppfattning, i vilken utsträckning har följande förekommit i din kommun under mandatperioden?"

⁴ In Swedish: "Hypotetiskt sett, i vilken utsträckning skulle en politiker i din position, med dina kontakter i kommunen, ha möjlighet att"; and, "Enligt din uppfattning, i vilken utsträckning kan följande beteenden vara acceptabla?"

Description of data

We now turn to an analysis of the results of the data collection. We proceed in four steps. First we look closer at the “no opinion” alternative, which was available for the respondents answering the corruption questions. Second we discuss the general distribution of the answers. Third, we analyze the correlation between different items in the impartiality and corruption batteries and suggest three indices. Using these indices we, fourth, test for respondent perception bias.

The response alternative “no opinion” was offered for the corruption questions but not for the impartiality questions. The reasons were, based on experiences of previous studies in the same area (Bergh et al. 2013; Statskontoret 2012), both that we considered the corruption questions quite controversial and that we thought that most of our respondents would not have had any experience of corruption. We were therefore worried that forcing them to choose an answer would produce a low response rate and/or flawed estimates.

TABLE 1. DESCRIPTIVE STATISTICS FOR QUESTIONS IN THE SURVEY, INDIVIDUAL LEVEL

	Valid N	Mean	SD	No op.	No resp.
<i>Impartiality (1=Partial, 5=Impartial)</i>					
Recruitment	8567	3.33	1.22		4%
Procurement	8584	3.70	1.22		3%
Housing	8383	3.71	1.23		6%
Building permits	8613	3.85	1.20		3%
Environmental permits	8567	3.89	1.17		4%
<i>Corruption (1=Not at all, 7=To a very large extent)</i>					
A politician has attempted to influence a public administration report	6412	4.11	2.11	26%	3%
A civil servant has been employed despite not being the most qualified candidate	6030	3.45	2.15	29%	3%
A former politician has been employed in a leading position in the public administration or in a publically owned company	6319	2.63	2.09	20%	3%
A businessperson has offered a gift or service to a civil servant in connection with a public procurement	5028	1.82	1.46	42%	3%
A public employee has demanded payment for performing a service that is part of his or her duties	5199	1.59	1.25	40%	3%

Comment: The valid N column is the number of respondents when no responses and no opinion are excluded. The no response column is the percentage of persons that did not answer the specific question but did answer subsequent questions, and the no opinion column is the percentage of persons that answered the question with the no opinion answer.

Table 1, above, gives the summary statistics for all the survey questions and among other things shows the proportions of respondents that chose the “no opinion” response and the proportion that abstained from the question but still answered subsequent questions on impartiality and corruption.

The “no opinion” option puts us in a dilemma. Should these answers be included in the analysis or excluded from it? This is especially important, as the proportion of “no opinion” answers is relatively high for the corruption questions: especially the two questions concerning bribery, where about 40 percent of the respondents chose “no opinion” (see Table 1 below). Ideally, the persons that chose the “no opinion” response should be persons that are unable to make a good assessment of how common the practice is in the local government. In such a case, excluding the “no opinion” responses would lead to a more accurate measure based on the remaining responses. An indication that this interpretation is correct is that valid responses are much more common among members of the municipal board. Respondents that chose the “no opinion” alternatives are therefore excluded from the analysis.

We now proceed to analyze the distribution between the different response alternatives more generally. The survey questions in Table 1 are ordered according to the reported level of lack of impartiality and corruption. Among the impartiality questions, recruitment and procurement are perceived to be the most partial, while decisions on building and environmental permits are perceived to function in a more impartial way. The mean values for all questions are above the midpoint of 3.

Among the corruption questions, the means are generally quite low on the scale from 1 to 7. Only one question has a mean value above the midpoint of 4, which is that “a politician has attempted to influence a public administration report”. It might be because this is a relatively mild form of abuse, compared to taking bribes for example, but it can also be caused by an unintended ambiguity in the question. While it is not permitted to unduly influence civil servants during the process of writing the report (which was the purpose of the question), it is of course allowed to influence the report in the instructions to the civil servants. The two items from the corruption questions below the item concerning illegitimate influence relate to the recruitment score, but the two questions above that relate to outright bribery. In turn, bribery is perceived to be very uncommon. The mean value for the question of whether a public servant has demanded an extra payment is 1.59, very close to the low endpoint on the scale. This is not surprising; the low levels confirm findings of previous studies

on Sweden (Bergh et al. 2013; Statskontoret 2012) and correspond to the generally low number of reported corruption scandals.

However, the primary focus of this paper is to construct measures at the municipal, not the individual, level. By way of question design, most of the questions should be indicative of characteristics of the local government, not of the individuals responding to the questions. Before turning to correlations among the questions, we therefore aggregate the responses in each municipality. Table 2 shows the correlations between the municipal averages for each question. The rectangles in the matrix highlight the correlations between survey items in the same battery.

TABLE 2. CORRELATION MATRIX BETWEEN MUNICIPAL AVERAGES OF SURVEY QUESTIONS

	1	2	3	4	5	6	7	8	9	10
1 Housing		.62	.67	.57	.41	-.12	-.10	-.20	-.11	-.18
2 Building permits	.62		.87	.61	.45	-.26	-.13	-.21	-.26	-.22
3 Environmental permits	.67	.87		.72	.51	-.24	-.15	-.27	-.23	-.23
4 Procurement	.57	.61	.72		.66	-.26	-.19	-.30	-.24	-.26
5 Recruitment	.41	.45	.51	.66		-.32	-.34	-.60	-.24	-.21
6 A politician has attempted to influence a public administration report	-.12	-.26	-.24	-.26	-.32		.22	.41	.41	.30
7 A former politician has been employed in a leading position in the public administration or in a publically owned company	-.10	-.13	-.15	-.19	-.34	.22		.57	.28	.24
8 A civil servant has been employed despite not being the most qualified candidate	-.20	-.21	-.27	-.30	-.60	.41	.57		.27	.26
9 A businessperson has offered a gift or service to a civil servant in connection with a public procurement	-.11	-.26	-.23	-.24	-.24	.41	.28	.27		.61
10 A public employee has demanded payment for performing a service that is part of his or her duties	-.18	-.22	-.23	-.26	-.21	.30	.24	.26	.61	

Overall, correlations are strongest in the different types of questions: the impartiality questions correlate well with the other impartiality questions, and the corruption questions correlate with the other corruption questions. This could both be indicative of the questions being part of the same

batteries in the survey, and therefore phrased similarly and grouped together, but could also indicate tapping into underlying phenomena.

We now proceed to conduct a factor analysis on the questions to construct our indices. Factor analysis of all survey item averages yields the same dimensions as when doing the analysis on each battery separately. Results of the two factor analyses are shown in Tables 3 and 4.

TABLE 3. FACTOR ANALYSIS ON IMPARTIALITY QUESTIONS: FACTOR LOADINGS

	Factor 1
Recruitment	0.78
Procurement	0.87
Housing	0.92
Building permit	0.86
Environmental permit	0.71

Comment: Principal component factor analysis. N=290. Variance explained: 69%.

TABLE 4. FACTOR ANALYSIS ON CORRUPTION QUESTIONS.

	Factor 1	Factor 2
A politician has attempted to influence a public administration report	0.53	0.40
A businessperson has offered a gift or service to a civil servant in connection with a public procurement	0.87	0.15
A public employee has demanded payment for performing a service that is part of his or her duties	0.86	0.09
A civil servant has been employed despite not being the most qualified candidate	0.18	0.87
A former politician has been employed in a leading position in the public administration or in a publically owned company	0.12	0.85

Comment: Principal component factor analysis. N=290. Variance explained: 70%. Varimax rotation with Kaiser normalization.

Three factors can be distinguished from all the questions: one for impartiality, one for bribery and one for recruitment. Among the corruption questions, two items concern recruitment load on one dimension, while the two concerning bribery load on the other.

The question about whether a politician has attempted to influence a report loads on both. This is another indication that there might be something peculiar with the question. Taken together with the ambiguity of the question discussed above, we would not recommend using this item for further analysis.

We do not use predicted factor scores when we construct the indices, however, since the factors will then be orthogonal to each other, which is theoretically unlikely. Instead, we construct simple additive indices and divide by the number of questions. The corruption question that loaded on both dimensions is excluded, both in order to keep the remaining indexes theoretically coherent and because of the ambiguity of the wording of the question mentioned above. Moreover, we reverse the impartiality questions so that higher values on the resulting index, as on the two other indices, reflect bad behavior. It is thus a partiality index. Table 5 presents the correlations between the indices.

TABLE 5. CORRELATION MATRIX OF MUNICIPAL LEVEL INDEXES

	1	2	3
1 Partiality index	-	0.29	0.33
2 Bribe perception index	.29	-	0.33
3 Recruitment perception index	.33	0.33	-

As expected, the partiality index is positively correlated with the other two indices, which in turn are positively correlated with each other. All correlations are significant at the 95 percent level.

As a next step, we investigate possible sources of perception bias among the respondents. To make this analysis, we again analyze the individual level but use only the indices (here calculated at the individual level), controlling for municipality fixed effects. We include a variable indicating whether the respondent is a full member of the municipal board, and therefore has more power and insight into the affairs of the local government. Another important variable included is whether the respondent is a part of the ruling majority in the municipality. The expectation is that politicians in the ruling majority will perceive to a lesser extent a lack of impartiality and corruption, in line with

the large body of research showing that people tend to be politically motivated in their reasoning (Tabor and Lodge 2006). Furthermore, as previous research has identified publically owned enterprises as a potential danger zone for corruption (Bergh et al. 2013), we include a variable for whether the respondent is a member of the board of a public company and therefore could be expected to have more insight, if the hypothesis formed in previous research is correct. What is more, variables for gender, age, education and party are also included. Results are presented in Table 6 on the next page.

Strong effects are found for the municipal board variable: members of the board perceive less partiality and corruption. How should these figures be interpreted? On the one hand, the persons in the municipal board should have more insight into the affairs of the local government. On the other hand, they also have a vested interest since they are responsible for the local government policy. We get a hint of the underlying reasons from the extremely strong effects of the majority variable: members of the ruling majority perceive substantially less partiality, abuse and corruption. For instance, the predicted difference between the opposition and the majority on the recruitment index is one whole point on the scale, about one half standard deviation. Given that there are no apparent reasons for why the ruling majority should have better insight into the actual state of affairs, the effect must be interpreted as an example of politically motivated reasoning, which also casts light on the municipal board variable.

No substantial general effects are found for the gender, education and public company variables, but older politicians perceive fewer problems. The party effects are interesting, as virtually all reported coefficients go in the direction of parties perceiving more corruption and partiality than the reference category, the Social Democrats. This is possibly indicative of politically motivated reasoning, as the Social Democrats in many municipalities have been in power for a long time, even though they are currently in opposition in many municipalities. The Sweden Democrats and other parties (usually local parties only represented in one municipality) are more especially pessimistic about the state of affairs, which is hardly surprising given that they have the character of anti-establishment parties (which is partly true of the Green party as well). Their representatives have also been shown to have lower levels of interpersonal trust than representatives of other parties (Gilljam, Karlsson and Sundell 2010).

TABLE 6. ESTIMATION OF POTENTIAL PERCEPTION BIAS: OLS REGRESSION WITH MUNICIPAL LEVEL FIXED EFFECTS, ABSOLUTE T-STATISTICS IN PARENTHESES

	Partiality perception	Bribes perception	Recruitment perception
Municipal board	-0.262 ^{***} (10.76)	-0.105 ^{***} (2.94)	-0.288 ^{***} (6.00)
Majority	-0.474 ^{***} (21.05)	-0.364 ^{***} (10.57)	-1.112 ^{***} (24.19)
Public company	-0.0211 (0.75)	-0.0687 (1.69)	-0.00724 (1.32)
Man	-0.122 ^{**} (5.42)	0.0174 (0.50)	-0.0847 (1.83)
Age	-0.00426 ^{***} (4.73)	-0.00575 ^{***} (4.09)	-0.0125 ^{***} (6.58)
College education	-0.0485 [*] (2.07)	0.0104 [*] (0.29)	0.141 [*] (2.97)
<i>Party (ref: Social democrats)</i>			
Left	0.269 ^{***} (5.31)	-0.0153 (0.19)	0.351 ^{***} (3.36)
Green	0.269 ^{***} (5.31)	0.409 ^{***} (4.90)	0.847 ^{***} (7.50)
Center	0.0886 [*] (2.32)	0.0726 (1.27)	0.340 ^{**} (4.45)
Liberals	0.0495 (0.90)	-0.0175 (0.22)	0.399 ^{**} (3.66)
Christian Democrats	0.176 ^{***} (3.93)	0.187 ^{**} (2.73)	0.816 ^{***} (8.89)
Moderates	0.0878 ^{**} (2.92)	0.0798 (1.75)	0.553 ^{**} (9.05)
Sweden Democrats	0.563 ^{***} (8.49)	0.507 ^{***} (4.37)	1.246 ^{***} (8.04)
Other parties / no party	0.442 ^{***} (7.18)	0.636 ^{***} (6.69)	1.181 ^{***} (9.78)
Constant	2.859 ^{***} (51.49)	2.100 ^{***} (23.88)	4.016 ^{***} (34.08)
<i>N</i>	8186	4665	5540
<i>R2 within</i>	0.11	0.06	0.18

t statistics in parentheses

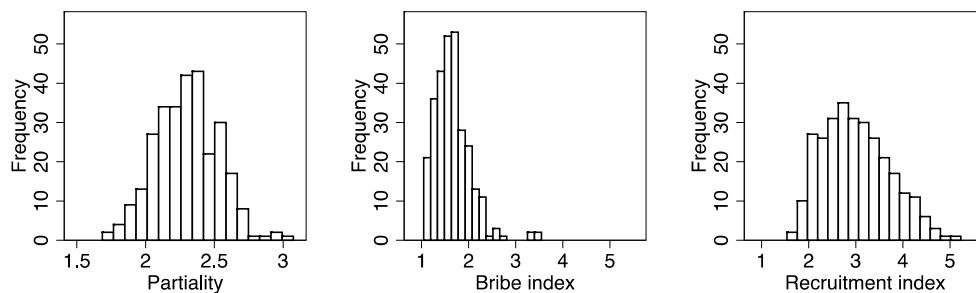
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

All in all, the analyses reported in this section have resulted in three different indices: one on partiality, one on bribery and one on recruitment. The analysis of perception bias reveals some systematic effects of respondent characteristics, but only one large enough to merit special attention: the one of being a part of the ruling majority or not. In the subsequent section on external validation, we therefore perform validation analyses separately for the measures calculated only on the majority and on the opposition, as well as for the total group of respondents.

External validation

The distributions of our three indices are presented in the histograms in Figure 1. High values mean perceptions of more partiality, bribery and improper recruitment.

FIGURE 1. HISTOGRAMS FOR THE THREE INDICES



A common feature of all the three distributions is that there are a few municipalities that stand out towards the “bad” end of the spectrum, while the distribution is thicker towards the “good” side of the distribution, especially for the bribe index. It is therefore warranted to focus more attention on the municipalities that stand out as not as well functioning rather than on the municipalities with the least amount of corruption. The reason is that differences on the good side of the spectrum are probably less meaningful.

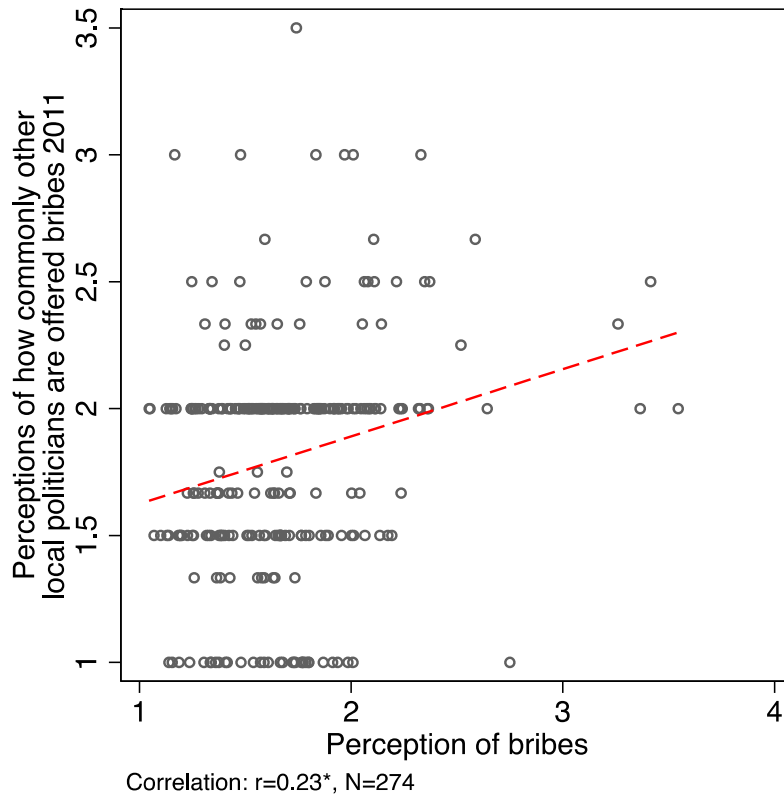
For the bribe index, the top four are Solna, Norrköping, Falun and Gothenburg, which are municipalities where there have been highly publicized corruption scandals in the last few years, all in relation to building projects. In the case of Solna, which is at the very top, a highly ranked politician

and the top civil servant were charged with taking bribes from the company in charge of building the new Swedish national athletic arena. Only the top civil servant was convicted, for receiving close to one million Swedish kronor for a board post financed by the building company.

But does the validity of the bribe index hold up in systematic tests? To investigate this, we correlate the bribe index against three external data sources. Ideally, we would of course want to validate all three of our indices, but we have only found good external points of validation for the bribe index. The first of the external reference points is another survey with local politicians conducted in 2011, with similar questions (Bergh et al. 2013). A high correlation between our measures and the measures from the other survey may not be indicative of high validity, but rather of the stability of the measures. As the same politicians answered both surveys, a weak correlation would instead be very troubling and indicate that the survey responses are more random. Data were obtained from the Swedish Agency for Public Management (*Statskontoret*).

The survey was directed to both civil servants and politicians, but we choose to make comparisons only with the responses of politicians, as only politicians are included in our survey. Specifically, we compare our bribe index with the mean value of a question in the other survey: “How often do you think that other politicians and civil servants in your municipality are offered money or other benefits in order for them to take a decision that benefits the person or persons that gave the offer?”. The response alternatives were “never”, “very seldom”, “quite seldom”, “quite often” and “very often”. Figure 2 shows the correlation between our index (x-axis) and the other survey question (y-axis).

FIGURE 2. CORRELATION BETWEEN BRIBE PERCEPTIONS IN OUR SURVEY AND THE SURVEY BY STATSKONTORET 2011



There is a positive and statistically significant correlation ($r=0.23$) that is also robust to removing the four outliers to the right in the graph. The correlation may seem quite weak, but it should be kept in mind that the number of respondents per municipality is considerably lower in the previous survey, which should lead to more random variation. It is therefore reassuring that there at least is a significant correlation in the right direction.

Two more reference points are available for the bribery index. First, we ran a search in local newspapers for articles containing mentions of bribery and municipality during the period between 2010-10-01 and 2012-09-01, which is the same period that the survey questions ask about. Each newspaper was then associated with one municipality, according to the headquarters and primary focus of the newspaper (Karlström 2012). Using this method, 51 newspapers could be assigned to a specific municipality. Nationwide newspapers were excluded from the analysis. We investigate the correlation between the log of the number of articles about bribery and the bribe perception index. Moreover, as the perception bias analysis revealed that the most important source of bias was

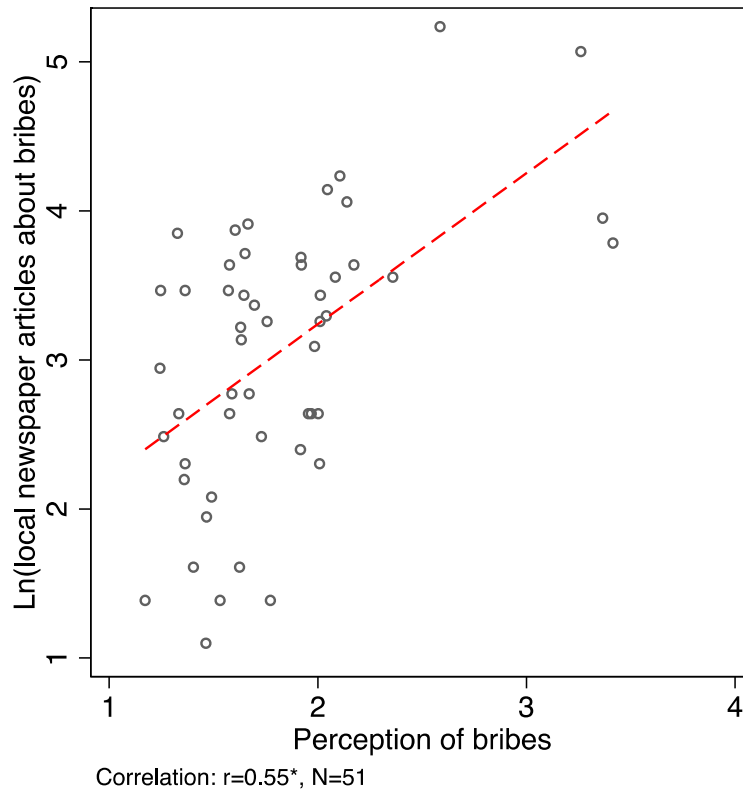
whether the respondent was part of the ruling majority or not, we also divide the responses into a majority and an opposition index and perform the correlation analysis separately on each index. The results are presented in Table 7.

TABLE 7. CORRELATION BETWEEN BRIBE PERCEPTION INDEX AND LOCAL NEWSPAPER ARTICLES ABOUT BRIBERY. N IN PARENTHESES.

	Ln(Local newspaper articles about bribery)
Bribe perception index total	0.55*** (51)
Bribe perception index opposition	0.55*** (51)
Bribe perception index majority	0.41** (51)

There is quite a strong and highly significant correlation between the number of newspaper articles about bribery and the perception index. In municipalities where politicians perceive that there have been more instances of bribery, the local newspapers also write more articles about bribery. An interesting aspect is that the opposition's perceptions correlate more strongly with the newspaper measure than the majority's perception, as could be expected given that the majority has an interest in underestimating abuse and corruption. However, the correlation between the opposition index and the newspaper measure is not stronger than between the total index and the newspaper measure. Figure 3 graphically presents the correlation between the total index and the newspaper measure

FIGURE 3. CORRELATION BETWEEN BRIBE PERCEPTIONS INDEX AND NEWSPAPER ARTICLES ABOUT BRIBERY



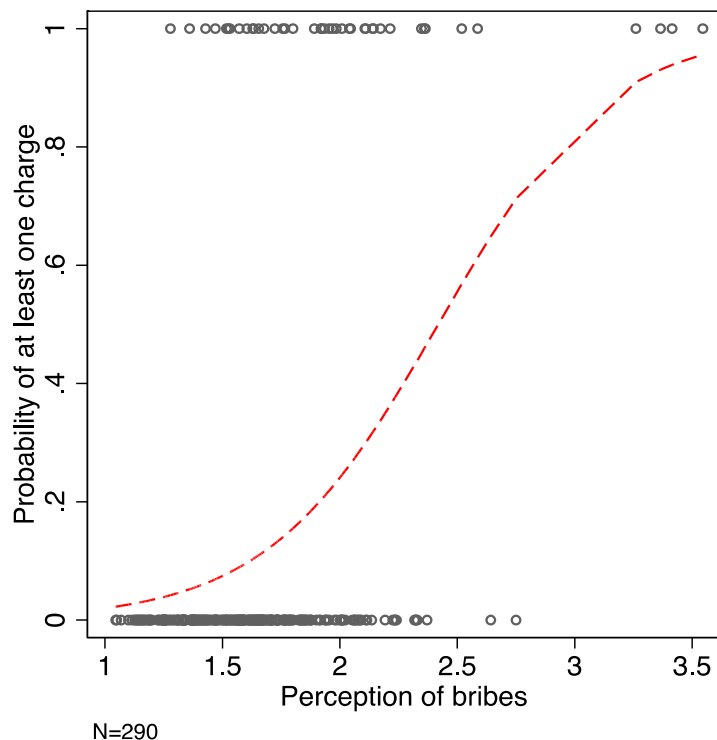
The second reference point is crime statistics. This is an approach with apparent drawbacks, as only discovered corruption will be included in the statistics, but it has been used in earlier research (Meier and Holbrook 1992; Glaeser and Saks 2006; Golden and Picci 2005). We use data from the Swedish National Council for Crime Prevention, a Swedish government agency, on public officials charged with taking a bribe in the years 2010, 2011 and 2012. The raw numbers are of course related to the size of the municipality: the two municipalities where there have been most charges are the two largest cities, Stockholm (14) and Gothenburg (13). However, adjusting for population size is not appropriate either, since the size of the public administration is not directly proportional to the size of the population, as all municipalities regardless of size need to provide a minimum of services. We therefore also use a dummy variable for whether there has been at least one charge against a public official during the time period. The correlations are presented in Table 8.

TABLE 8. CORRELATION BETWEEN BRIBE PERCEPTION INDEX AND BRIBE CHARGES 2010-2012. N IN PARENTHESES.

	Number of bribe charges 2010-2012	At least one bribe charge 2010-2012
Bribe perception index total	0.42*** (290)	0.40*** (290)
Bribe perception index opposition	0.38*** (289)	0.33*** (289)
Bribe perception index majority	0.22*** (290)	0.25*** (290)

Again, there are relatively strong and highly significant correlations, both between the number of charges and with the simple dummy indicator. Similar to the newspaper measure, the opposition's perceptions have a stronger correlation with the external data, but the perceptions of the opposition and majority combined provides the strongest correlation. Figure 3 displays the predicted probability (from a logistic regression) that at least one official will have been charged with taking a bribe as a function of the bribe perceptions index.

FIGURE 4. PREDICTED PROBABILITY OF AT LEAST ONE BRIBE CHARGE AS A FUNCTION OF THE BRIBE PERCEPTIONS INDEX



Taken together, there seems to be a decent correspondence between the bribe perceptions index and external indications of bribery. Even though it is not possible, based on this analysis to ascertain which one of the data sources is closest to the true value, we think it is encouraging that they point in the same direction. Our main conclusion from this section is therefore that the indices suggested in this paper actually tap into a real world phenomenon in a systematic manner and thus merit further attention in empirical studies, even if they can not be interpreted as a perfect indicator of real-world corruption.

Summary

This paper presents data on corruption and impartiality from a unique survey of local politicians in Sweden that includes answers from about 78 percent of the 13 361 politicians active in the 290 Swedish municipalities (Gilljam and Karlsson 2013). On the basis of a number of impartiality and corruption related questions, and after checking for respondent perceptions bias, we construct three indices: one bribery index, one partiality index and one recruitment index. Moreover, the

paper assesses the external validity of these indices, using previous surveys, crime statistics and media reports on corruption.

Our main conclusion after these analyses is that the indices hold water, and thus that it is worthwhile to include them in future, more explanatory studies on both causes and consequences of corruption and impartiality in Sweden.

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