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19 October 2015

Online at <https://mpra.ub.uni-muenchen.de/67331/>
MPRA Paper No. 67331, posted 20 Oct 2015 08:24 UTC

**How much of a nuisance is greasing the palms? A study on job dedication and attitudes
towards corruption reports under answer bias control**

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October 2015

Abstract

This article studies how prior exposure and individual respondent's work attitudes affect the degree to which corruption is perceived as an obstacle to business operations. Survey questions about sensitive topics like corruption are susceptible to answer bias, for which we control by implementing a randomised response technique. The results suggest that corruption tends to be under-reported. Individuals who are more dedicated to their work report corruption as a bigger obstacle. So did respondents who were previously exposed to corruption. This effect becomes significantly stronger once we control for endogeneity issues related to answer bias that affects past experiences with corruption over and above answer bias that affects reports of corruption as an obstacle to business operations. We find that individual experiences, in addition to contextual variables, shape corruption data available from surveys.

Keywords: corruption, work dedication, reticence, random response, Bangladesh, Sri Lanka

JEL: C83, D03, D73, O12

HOW MUCH OF A NUISANCE IS GREASING THE PALMS? A STUDY ON JOB DEDICATION AND ATTITUDES TOWARDS CORRUPTION REPORTS UNDER ANSWER BIAS CONTROL

The adverse effects of corruption on both the entire economy and on firms that are required to pay bribes are well documented (Jain, 2002; Jensen, Li, & Rahman, 2010a; Serra, 2006). Evidence shows that not only certain countries, but also industries and types of firms are more exposed to corruption than others (Clarke, 2011b; Jensen, Li, & Rahman, 2010b; Svensson, 2003). However, even in highly corrupt environments not everybody engages in corruption, is exposed to it or even perceives it as an obstacle. The fight against corruption requires knowledge about the individuals involved. While a lot is known about the contextual factors explaining corruption, little is known about the individuals that pay bribes. Corruption can only exist if people are willing to engage in it. Hence, we are interested in the perception of corruption as an obstacle to business operations of the person that is exposed to it.

The present study analyses business leaders and their experience with government corruption. We propose that whether corruption is viewed as an obstacle depends on several factors that are specific to the respondent. These are the respondent's prior experience with corruption and work-attitude. We expect that these factors are relevant over and above the organisational and environmental context. Understanding the conditions under which corruption is perceived as an obstacle is a precondition for the acceptance of systemic changes for which wider business climate reforms aim (Jain, 2002).

This paper's contribution to the literature will be threefold. First, we will provide a multi-layered perspective on corruption. Aside from contextual factors, we include the respondent's prior exposure to corruption and individual work attitudes to predict the perception of corruption as an obstacle to doing business. Second, field research on corruption often faces a major impediment. It relies on corruption data that is self-reported, which may suffer from answer biases (Coutts & Jann, 2008). Respondents are unlikely to admit engaging in sensitive behaviours. To address this issue the present paper will control for possible survey response bias by a randomised response technique. We use this method not only to control for bias affecting the key variable of interest, but also to control for possible measurement bias affecting prior exposure to corruption as a key independent, yet endogenous variable. Third, aside from a handful exceptions (Thau, Derfler-Rozin, Pitesa, Mitchell, & Pillutla, 2014; Umphress, Bingham, & Mitchell, 2010), very few studies have looked into individual employees' attitudes towards unethical behaviour that is potentially beneficial

for the organisation. Investigating the role of work dedication in this context, will contribute to a relatively novel field of research.

What explains attitudes towards corruption?

We explore when corruption is perceived as an obstacle for business operations. The bulk of the literature focuses on contextual factors at the country and firm level. We will argue that individual effects such as prior exposure to corruption and the dedication of the respondent crucially matter for how corruption is perceived.

What do we mean by “corruption”? According to common definitions (e.g., Meriam Webster online), corruption is described as dishonest or illegal behaviour by someone in power (e.g., government officials), directed at another person for personal gain (e.g., bribes).¹ Academic definitions similarly stress the power-misuse element of corruption (Bendahan, Zehnder, Pralong, & Antonakis, 2014a).

Hence environmental factors that shape power-relationships will also influence the likelihood of corruption. Many economic studies focus on such contextual factors. For instance, country level evidence shows that corruption is lower in wealthier, more democratic societies, whereas political instability increases the levels of corruption. In addition, corruption tends to be higher in rural areas in which government officials are harder to supervise than in urban areas with a more developed institutional infrastructure (Elbahnasawy & Revier, 2012; Serra, 2006). These country level findings are complemented by firm attributes which have also been associated with corruption. For instance, larger firms pay bribes not only more often, but the bribes are also higher in their amount compared to smaller firms. The same holds for younger firms relative to older firms. Exporting firms are more likely to be exposed to corruption than firms that serve the local market, and firms that are foreign and/or privately owned have been reported to pay fewer and less bribes than state-owned enterprises (Clarke, 2011b; Jensen et al., 2010b; Svensson, 2003).

In addition to contextual factors, we assume that the perception of corruption as an obstacle differs across respondents. We argue that it is likely that a person's opinion about corruption as an obstacle to business operations depends on their prior exposure to corruption. This idea originates in the behaviour-to-attitude link, which has been a long standing strand of research in social psychology (Holland, Verplanken, & Van Knippenberg,

¹ See <http://www.meriam-webster.com/dictionary/corruption>, retrieved on 27 Dec. 14.

2002; Zanna, Olson, & Fazio, 1980). It is generally accepted that attitudes might not only guide future behaviour, but can also be inferred from past behaviour. This mechanism can be found in the area of corruption (Lee & Guven, 2013). In a study investigating attitudes towards corruption in over 20 countries, they found that past experience with bribery predicted how people perceived bribery. People who had in the past been offered or requested bribes also perceive bribes as more justified than people who had not. Then again, one may assume that perceiving bribes as justified equates to perceiving bribes as not harmful and therefore not as an obstacle to business operations. Hence, this results goes against the notion that exposure to bribery might have a revealing effect on the perceptions of the related costs.

When it comes to assessing exposure to corruption outside the laboratory, most studies use survey data (Bendahan, Zehnder, Pralong, & Antonakis, 2014b; Lee & Guven, 2013). Corruption questions are typically embedded in business climate surveys that aim at generating estimates of the impact of corruption. This concerns the differences in the effect of corruption on firms, industries and countries. However, relying on survey data has drawbacks. Corrupt behaviour can be a highly sensitive issue, which is why respondents may not answer survey questions truthfully (Coutts & Jann, 2008). False responses and non-responses are indeed a critical source of bias in corruption data (Jensen et al., 2010b). Estimates suggest that survey responses underreport the commission of sensitive acts by 45% on average (Lensvelt-Mulders, 2005).

The third factor that will be looked at to explain the perception of corruption as an obstacle to business operations are the individual work attitudes of the respondent. This study links corruption to 'work engagement', a key psychological characteristic of the manager (Christian, Garza, & Slaughter, 2011; Kahn, 1990). Personal work engagement describes a state in which employees "bring in" their personal selves during work role performances, investing personal energy and experiencing an emotional connection with their work (Christian et al., 2011; Kahn, 1990). Even though work dedication has been linked to various attitudes related to doing business, nothing is yet known about how of work engagement interacts with corruption and whether more dedicated respondents would see corruption more or less as an obstacle. Two different predictions can be made.

For one, giving in to corrupt demands of tax officials, or even offering bribes, could be seen as a particular form of extra-role pro-organisational behaviour, as "unethical pro-organisational behaviour" (Thau et al., 2014; Umphress et al., 2010). Different to other unethical behaviour, giving in to or committing corrupt acts may be directed at the

organisational good. People who are highly engaged in their job are also more willing to go the extra mile for their organisation to 'gets things done' (Harter, Schmidt, & Hayes, 2002; Jensen & Rahman, 2011; Rich, Lepine, & Crawford, 2010; Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2009). Hence, more dedicated respondents might be more likely to respond to corrupt demands for the benefit of their business. Empirical evidence points into this direction (Umphress et al., 2010). They find that people who highly identify with their organisation were more likely to engage in unethical pro-organisational behaviour. In this case, corruption would be an alternative route towards organisationally beneficial outcomes. More dedicated respondents would be less likely to perceive corruption as particular obstacle.

Then again, work-dedication may partly capture of job satisfaction, which was found to be negatively related to unethical behaviour (for a meta-study see (Kish-Gephart, Harrison, & Treviño, 2010). If this is the case, more dedicated respondents might perceive a corrupt environment, i.e. a culture of bribery and corruption, more as an obstacle rather than as an additional route to 'get things done'.

The present study

This study investigates the effect of context, exposure and work dedication on corruption attitude. We use representative data from two establishment level surveys conducted in Sri Lanka and Bangladesh by the World Bank in 2011. These samples provide a unique opportunity to study the link between work engagement and corruption in a developing country context. Both surveys included on individual work engagement in the World Bank Enterprise Surveys, and either country provides a viable setting for corruption studies. The investment climate in both countries suffers from corruption, which provides viable setting for corruption studies. For instance, Transparency International rankings confirm the notion that the public sector in either country both is highly corrupt. In Transparency's 2013 *Corruption Perceptions Index*, corruption values are assigned to 175 countries and territories, ranging from 0 (highly corrupt) to 100 (very clean). With a score of 27, Bangladesh was ranked 136th, while Sri Lanka's ranking was slightly better (91), its score of 37 was similarly low.

One of the difficulties of measuring corruption in surveys is that questions about corrupt behaviour are susceptible to answer bias. Respondents may be reluctant or unwilling to answer sensitive questions, and if they do, they might not answer truthfully. Using such information in regressions is therefore problematic. The estimated coefficients may be

distorted, which needs to be controlled for in order to obtain reliable regression results (Coutts & Jann, 2008; Jensen & Rahman, 2011).

The survey implemented a forced response variant of a random response method, originally designed to incentivise survey respondents to answer specific sensitive questions truthfully (Warner, 1965), to identify answer bias. The presently implemented method was proposed by (Azfar & Murrell, 2009) to capture possible answer bias (see below for a description in greater detail). It has been used to show that answer bias affects sensitive questions, particularly referring to corruption and performance (Azfar & Murrell, 2009; Clarke, 2011b, 2012; T. Clausen, Fagerberg, & Gulbrandsen, 2012; Friesenbichler, Clarke, & Wong, 2014; Jensen & Rahman, 2011).

The novelty of this paper is threefold. First, we consider work dedication as an explanatory factor for reported corruption as a business obstacle. Second, we use the dataset to construct a variable indicating prior exposure to corruption, which to the knowledge of the authors is new to the corruption literature. Third, the data offers a bias control method that has been established in the literature. The bias control method is not applied directly on the corruption variable, but is used to construct a proxy for external factors that serve as instrumental variables capturing measurement bias of the variable for prior exposure to corruption.

Method

That survey covers 588 establishments in Sri Lanka and 1,001 establishments in Bangladesh. Establishments were selected according to a stratified random sampling strategy. The stratification considered i) firm size classes (micro: 1-5, small: 6-19, medium: 20-99, large: >99; large firms were oversampled), ii) regions at the district level, and iii) ISIC Rev. 3.1, 2-digit industries. The sample included all manufacturing sectors according to the classifications of ISIC Rev. 3.1 (group D), construction (group F), Services (groups G and H), transportation, storage and communications (group I), and Information technology (sub-sector 72 in group K). Further information about the implementation, the sampling methodology and the datasets are available from the World Bank on the World Bank's *Enterprise Survey* website.²

² See <http://www.enterprisesurveys.org>, retrieved on 27 Dec. 14.

The questions were answered by senior officials of the establishment, who could have been the owner, the CEO or a senior employee. Some surveys were answered by more than one person. These were excluded from subsequent analysis, leaving a total of 1,737 observations of which 982 were in Bangladesh and 755 in Sri Lanka. Most respondents were male – only 14.2% in Sri Lanka and 1.5% in Bangladesh were female. In Sri Lanka, 45.8% of the respondents owned the establishment, 40.6% were CEOs and 13.6% were other senior employees. In Bangladesh, 24.8% of the respondents were owners, 60% were answered by CEOs and 15.2% by senior employees.

Dependent variable

The dependent variable is the degree to which corruption is perceived as an obstacle to their establishment's operations. The interviewer listed factors that can affect the current operations. Among other factors, respondents were asked to rate corruption as such an obstacle. The choices given were No Obstacle, a Minor Obstacle, a Moderate Obstacle, a Major Obstacle, or a Very Severe Obstacle.

Exposure to corruption

The implemented questionnaire did not contain a direct question whether respondents have had prior exposure to corruption. We therefore use answers on three different items to construct a dummy variable indicating respondents' prior experience with corruption. These items measure corruption at an increasing degree of sensitivity. Two questions refer to requests for informal payments and one question concerns the expected amount of the informal indicating.

The first question was only posed to respondents that were visited by a tax official. It asked if in any of the inspections or meetings a gift or informal payment was expected or requested. The second question was posed to respondents that have not been visited by a tax official. It asked such requests are typically made.

The third, rather general item used to construct the exposure variable asked respondents to quantify the amount that establishments "like this one pay in informal payments or gifts to public officials". The underlying act can refer to various types of interaction with government officials, such as customs, taxes, licenses, regulations or services. We assume that respondents who provide figures were actually making informal payments at some stage.

For each of these three items we create yes-no variables, which we use to construct a dummy for exposure to corruption. If a respondent answers any of these three questions with yes, we label her to have had prior exposure to corruption. Also, labels for missing values were generated for respondents who did not answer any of these questions. In total 10% of the respondents indicated to have been exposed to corruption in the one or other way.

Work dedication

To measure work dedication, the survey used a sub-scale of the Utrecht Work Engagement Scale (Schaufeli, Bakker, & Salanova, 2006). Respondents were asked to answer how often they experience a given state on a Likert-scale ranging from 1 (never) to 7 (always). For instance, one question of the five-item scale is "I find the work that I do full of meaning and purpose". Table 1 lists The internal consistency of this scale was good, with a Cronbach's alpha of 0.83.

Table 1 about here

Individual and contextual variables

Position of respondent in firm. These are dummy variables that denote whether the respondent is the CEO or a senior employee of the firm. The group of firm owners served as the comparison category.

Gender. A dummy variable denotes a female respondent.

Firm age. This variable is defined as the survey year minus the year the establishment began its operations.

Size. The number of employees in full time equivalents (in nat. logs).

Export. A dummy variable denotes whether firms export either directly or indirectly (i.e., sold domestically to third party that exports products).

Family business. Constructing an ownership variable would have reduced the sample size significantly, because ownership information was only available for 498 of the 1,837 observations. However, we were able to construct a dummy denoting if a firm is a family business, which were identified by the question 'Does this establishment rely on one or more family members in decision-making?'. This indicates if firms that are strongly embedded in their respective locality.

Country. A dummy variable denotes firms that are in Sri Lanka.

Industry. A dummy variable denotes manufacturing and trade (retail or wholesale) firms.

Table 2 about here

Identifying answer bias

We used data from a forced response variant of a random response technique (Warner, 1965), as proposed by (Azfar & Murrell, 2009) to capture possible answer bias in the present sample.³ These randomised questions were delivered towards the end of the survey to reduce the likelihood that answers to other questions are affected. In the present application, the interviewer asks a respondent ten sensitive questions unrelated to corruption (e.g., “Have you ever inappropriately hired a staff member for personal reasons?”). The respondent is asked to toss a coin out of sight of the interviewer. If the coin shows heads the respondent is required to answer ‘yes’. If the coin shows tails, the respondent is supposed to answer the question truthfully. If the respondent answers ‘yes’, no one (not even the interviewer), knows whether the respondent is saying that he or she really committed the sensitive act or just that the coin showed heads. This is thought to encourage truthful answers and reduce underreporting of sensitive behaviours (Lensvelt-Mulders, 2005). To give these respondents a chance to answer ‘yes’ without losing face, three less sensitive random response questions were included. These were dropped in the present application, so that the total number of responses used is seven (Azfar & Murrell, 2009).

(Azfar & Murrell, 2009) proposed this procedure to identify respondents that did not answer sensitive questions truthfully. To do so, one needs to specify an “angel assumption”, describing the situation in which no-one would commit any of the acts in question. Then the expected number of no’s can be derived from a binomial distribution with seven coin tosses as the events, a 50% probability of success for each coin toss, and the respective number of successful cases. Put differently, even if respondents never committed any of the acts described (and report the outcome of the coin-throw truthfully), they would still report a number of “yeses” (for the number of heads they throw). The likelihood that not a single head would show up in seven coin tosses is below one in a hundred (in addition to the likelihood that someone never committed any of these acts). Figure 1 illustrates the distribution of

³ The present description of the method draws Azfar and Murrell (2009) and Clausen and others (2010), which provide greater detail on the methodology.

responses that would occur under the angle assumption and compares it to the actual distribution of negative responses. As can be seen, 12% of the respondents of the present sample reported seven no's, considerably more than would be expected under the angel assumption. It is therefore likely that some of those respondents did not answer other questions truthfully (see Figure 1).

Figure 1 about here

Besides following the instructions and answering truthfully, there are several answer strategies respondents might pursue. For instance, even though the respondent knows that the interviewer will not know why they are giving a positive answer (either because the coin showed heads or because they have done the act) some respondents may choose to answer 'no' even when the coin shows heads. In this regard the present data corresponds to previous findings (Azfar & Murrell, 2009; B. Clausen, Kraay, & Murrell, 2010) that show an implausibly high number of 'no' answers to the sensitive random response questions. If the questions would have been answered truthfully and if no one has committed any of the sensitive acts, half of the respondents should answer 'no' to the sensitive questions (see Figure 1 for the sum of no's).

Some respondents may show sophisticated answer behaviour, and seek to avoid long and unlikely sequences of 'no'. To give these respondents a chance to answer 'yes' without losing face, three less sensitive random response questions were included. Following (Azfar & Murrell, 2009), we exclude these questions when calculating the answer bias index. This is methodologically corroborated by (Edgell, Himmelfarb, & Duchan, 1982) who find that forced response method work relatively better with moderately sensitive questions to which most people that are expected to give a positive answer (unreported results, however, show that including these questions does not qualitatively affect the obtained results).

There may be bias also on the other side of the distribution, i.e. the number of positive responses. Assuming that respondents answer truthfully, it is likely that some respondents have committed the sensitive acts. However, some may answer strategically and over-report, i.e. give positive answers when they should answer no. It is not possible to identify those respondents, since there is no information about the actual conduct. This bias seems to be

less relevant, however. Only few respondents answered all (2.5%), or all but one (4.6%) questions with a yes.

We use data from the random-response technique to create a variable indicating "answer bias". To do so we calculate the sum of negative answers as a measure of the likelihood that a respondent misreports. In other words, respondents with a higher sum of negative answers are more likely to show answer bias (Friesenbichler et al., 2014).

Estimation strategy

We use regression analysis to examine how individual characteristics affect reports of corruption as a factor that hampers businesses operations. The key variables are 1) business context, 2) job dedication, and 3) prior exposure to corruption. These variables are used in the first regression. In the second regression, we use the individual characteristics and the contextual setting as control variables. The next two estimations use the same variables as the previous ones, but are estimated as ordered logit regressions with robust standard errors. This method serves as a robustness check that controls for possible distortions of OLS coefficients due to the data structure. The regression outcome is not continuous, but an ordinal variable ranging from 0 (no obstacle) to four (severe obstacle).

These regressions control for answer bias that affects the reported severity of corruption as an obstacle for business operations. However, also the variable that indicates whether respondents have been exposed to corruption might be distorted. This introduces an endogeneity problem due to measurement bias, which we seek to control for with an instrumental variable estimation that can recover causal parameters (Antonakis, Bendahan, Jacquart, & Lalive, 2010).

The idea is to use an external factor, an instrumental variable, that affects the endogenous variable (i.e. prior exposure to corruption) but not the dependent variable 'corruption as an obstacle'. The instrumental variables purge the coefficient of reported exposure to corruption from possible answer bias. We use a two-stage-least-squares estimator (2SLS). In the first stage, we predict the values of the endogenous variable using all other explanatory variables over and above the instrumental variables. In the second stage, we re-estimate the equation of interest, using the predicted values of the endogenous variable.

How do we identify instrumental variables that affect reported exposure to corruption, but not corruption as an obstacle? It is likely that the bias is larger for the exposure variable, since the questions that were used to construct the exposure indicator are more sensitive.

While the dependent variable is a general question, the exposure variable concerns the respondent directly, which is likely to trigger a greater degree of answer bias. This notion is confirmed by missing values. Survey respondents may choose non-response as an answer strategy when questions are sensitive (Jensen et al., 2010a). This implies that more sensitive questions have a higher non-response rate. If both questions were equally sensitive, the share of missing reports should be the same. However, only 2.46% did not rate the severity of corruption as an obstacle to their business operations, while 13.07% did not provide sufficient information to construct the exposure variable. We seek to exploit these differences in the sensitivity of the underlying questions to construct instrumental variables.

Why can we not simply use the indicator for answer bias from the previous regressions? One may assume that the indicator for answer bias also affects the endogenous variable 'prior exposure to corruption', perhaps to a different degree. By definition, the instrumental variable must only affect the endogenous variable and needs to be independent from the regressand. Hence we cannot simply use the answer bias indicator as an instrument. While this procedure produces qualitatively comparable results with the estimation that we ultimately chose, this procedure is indeed rejected by exogeneity tests.⁴

Hence we use the data generated by random response technique to create two instrumental variables measuring answer tendencies that do not consider the individual respondents' answer. The method therefore shifts the focus from self-reported data towards contextual factors. It is also conceivable that these external factors also affect the answer bias. While using the instrumental variables described below on the answer bias indicator is statistically viable, the results remain qualitatively the same, however.

The first instrument used reflects the interviewer's influence on respondent's answering behaviour. Although the quality of the data ultimately depends on the truthfulness of the respondent, it also depends on the competence of the interviewer to create an atmosphere of trust that allows for that. Also, some interviewers may have had respondents that were systemically more truthful than others (although there is no reason to believe in inter-individual variations in truthfulness). We are able to identify the respondents interviewed by a specific interviewer via the interviewer code that is available in the dataset. We then compute interviewer-level measures of answer bias that is external to the respondent. That is, we

⁴ It is also conceivable that such measurement bias affects the answer bias indicator itself. Treating the answer bias as an endogenous variable with the same instruments, we obtain statistically viable results, which however do not qualitatively change the results obtained from the OLS and ordered logit regressions.

calculate the average number of negative answers that an interviewer obtains, but leave out the present observation. The data was collected by 114 interviewers who on average conducted 15.2 interviews, with median of 8.5 interviews and a variance 11.3.

The second instrumental variable captures regional effects. Some regions are likely to be less reticent than others, reflecting unobserved institutional and cultural differences. Again, we omit the respondent's own answer and compute a leave-out-mean of the negative answers at the regional level. This value does not include the respondent's answer, and therefore captures regional characteristics rather than the respondent's. The dataset covers a total of 13 regions, of which four were in Bangladesh and nine in Sri Lanka.

If there were no interviewer and region specific effects, there should be no variance across either dimension. However, both variables show a considerable amount of variance. The mean of the regional indicator is 4.17, with a standard deviation of 0.50, ranging from 2.44 to 5.47. The mean for the instrument reflecting the interviewer's competence is 4.17, with a standard deviation of 0.82, ranging from 1.8 to 7.

Estimation results

Three different types of regression estimations (OLS, ordered logit and 2SLS) are used to examine how individual characteristics and exposure affects reports of corruption as a factor that hampers businesses operations. All analyses include answer bias as one of the predictor variables. For both the OLS and the ordered logit regression, we present two specifications. First we estimate the unconditional effect of job dedication, prior experiences and answer bias on corruption as a perceived obstacle to business operations. We do not consider the specific context. In a second regression, we then add control variables, considering the role of environmental factors. These context variables were also used in the 2SLS regression.

The results from all estimated regressions confirm the notion that more dedicated respondents are more likely to report corruption as a severe problem. This effect becomes bigger when the firm and individual level control variables are added. In line with previous research (Azfar & Murrell, 2009; B. Clausen et al., 2010), we find a negative effect of the answer bias indicator on corruption reports, suggesting that respondents who are likely to have an answer bias are less likely to see corruption as an obstacle (see Table 3). Over and above the respondent's job dedication and individual answer bias, prior exposure to corruption of the respondent has a positive and significant effect on seeing corruption as an

obstacle to business operations. The effect for prior exposure is larger than the effects for work dedication or answer bias.

Table 3 about here

The results for the control variables are in line with our expectations. Respondents in Sri Lanka were less likely to report corruption as an obstacle than those in Bangladesh. Exporting firms are associated with perceptions of corruption as a greater obstacle firms that serve only the local market. Respondents in older firms report corruption as a bigger obstacle. Compared to owners, CEOs and senior employees perceive corruption as a lesser issue.

Controlling for endogeneity

However, also the variable 'prior exposure to corruption' is susceptible to answer bias. The estimates of the 2SLS regression control for this, using answer tendencies specific to both region and interviewer as external determinants of the exposure variable. The picture changes insofar that the coefficient for prior exposure to corruption now dwarfs the effect of the other variables. This indicates that individual experiences with corruption shape much of the corruption data that is available from surveys once answer bias is taken into account. Both instrumental variables used are statistically significant with negative coefficients, which again indicate an under-reporting of prior exposure to corruption.

While dedicated managers are less likely to be exposed to corruption, they are more likely to report corruption as an obstacle. In addition, the coefficient for answer bias in the second stage regression turns insignificant. This is plausible, since the questions used to construct the variable exposure are likely to be more sensitive than the general question about corruption as a business obstacle. The effect of the re-estimated values of prior exposure, i.e. the values that have been purged from answer bias, is likely to override the effect of answer bias that applies to the general question.

The post-estimation statistics confirm the validity of the instrumental variable regression. We reject the null hypothesis that exposure is exogenous (p-value: 0.003). The instruments seem to be sufficiently strong, i.e. they affect the endogenous variable. The Kleibergen-Paap rk LM statistic is significant (p-value: 0.003). A Hansen-J test indicates that the

instrumental variables used are sufficiently exogenous (p-value: 0.753), i.e. we cannot reject the null hypothesis that the instruments do not affect the dependent variable.

Interestingly, the effects of some control variables changed in the instrumental variable approach. For instance, initial results showed that CEOs perceived corruption as a lesser issue. However, this effect disappeared in the instrumental variable estimation. This indicates that owners are less likely to be exposed to corruption than others, and once this is controlled for, the differences in corruption reports between the respondents' positions in the firm disappear. The same effect is obtained for firm age – when controlling for exposure, respondents in older firms are not more likely to report corruption as a larger obstacle. The statistically significant effects that OLS regressions find vanish once differences in prior exposure to corruption are being controlled for.

Discussion and conclusions

This paper analysed individual characteristics that may affect reports about the severity of corruption. While corruption reports have been linked to contextual factors, not all respondents in corrupt environments engage in corrupt behaviour. We study the effect of work dedication and prior experiences with corruption on the perception of corruption as an obstacle to business operations. Since corruption is illegal and might be perceived as unethical by some respondents, questions about corruption are sensitive. Respondents may be reluctant or unwilling to answer, and if they do, they might not answer truthfully. Cognisant of possible answer bias from which sensitive survey questions suffer, we used data from a random response technique as a control. We used various regression techniques on survey data provided by the World Bank which was collected in 2011 in Sri Lanka and Bangladesh. Both countries pose a viable environment to study corruption.

We find that individual as well as context characteristics play a role in how corruption is perceived, but that prior exposure has the biggest influence. The results indicate that respondents who are more dedicated to their job criticise corruption as a bigger obstacle than others. Although giving in to corruption and bribery request might be a way to get things done and constitute an unethical pro-organisational behaviour in that sense (Umphress et al., 2010), it is still perceived as an obstacle.

The largest explanatory factor appeared to be past experiences with corruption. We expected that prior exposure also influences respondents' attitude towards corruption. We

use of indicator for prior exposure as a predictor of the attitude towards corruption, which differs from previous economic corruption literature that considers answer bias, but treats these two factors as independent from each other. According to social-psychological understanding this assumption would not be correct. Rather, exposure and experience with certain behaviours is likely to have a major influence on people's attitude towards them. Our results confirm this - prior exposure *increases* the perception of corruption as an obstacle to operations. Although previous findings (Lee & Guven, 2013) indicate that in cultures with more exposure to corruption paying bribes is generally perceived as more justified, we find that even if corruption in a country is high, it is still perceived as an obstacle, even more so if people are more exposed to it.

This study therefore not only adds to economic corruption literature by considering prior exposure to corruption, but adds to previous research on exposure to corruption (Lee & Guven, 2013) by controlling for possible answer bias. This answer bias might come from issues concerning measuring corruption. Possible bias affects both 'corruption as an obstacle to business operations' and 'exposure to corruption'. Corruption is likely to be underreported, because people might be hesitant to admit that they have been exposed to a bribery request, or are familiar with corruption at all (Kundt, Misch, & Nerré, 2013).

To control for answer bias, the survey employed a randomised response technique that allowed us to identify records with a likely answer bias. We constructed an indicator that controlled for answer bias in the reports about the severity of corruption as an obstacle to business operations. The results confirmed previous findings that corruption is on average underreported. However, also the explanatory variable that measures prior exposure to corruption might suffer from an answer bias, which leads to statistical challenges. We implemented a 2SLS regression to purge the coefficient for previous exposure from possible bias over and above answer bias that affected the attitudes about corruption itself.

By definition, instrumental variables need to be uncorrelated with the dependent variable (perceptions of corruption as an obstacle), but determine the endogenous variable (reported prior exposure to corruption). However, both of these variables are likely to be affected by an answer bias, which was empirically approximated by the indicator based on the random response technique. To identify a viable instrumentation strategy, we draw on differences in the sensitivity of the underlying questions. Prior exposure possibly concerns sensitive, personal behaviour. Hence it seems that 'prior exposure' is more susceptible to answer bias than the general question about 'corruption as an obstacle to business

operations'. Exploring these differences to control for endogeneity issues, we argued that the competences of interviewers and regional response characteristics identify differences in the answer bias itself. This causes non-random measurement error and results in an endogeneity problem. In a 2SLS regression, we used leave-out-averages of the answer bias indicator at the interviewer and the regional level as instrumental variables. After controlling for answer bias in the variable 'prior exposure to corruption', its effect becomes much larger, and also overrides the effect for answer bias concerning the dependent variable.

The 2SLS shows the relationship of work dedication with both exposure to corruption and reports of corruption as an obstacle. Dedicated managers are less likely to be exposed to corruption, which may suggest that they are less likely to pay bribes. At the same time, they are more likely to report corruption as an obstacle. This may suggest that more dedicated managers are less likely to volunteer bribes, and might be more concerned about the consequences of getting caught. This not only shows that corruption is a problem to both firms that pay and firms that do not pay bribes, but also contrasts the notion that engaged managers might not be willing to go the 'extra mile to get things done'.

Controlling for the context of the interview produced the expected results. Respondents in Sri Lanka were less likely to report corruption as an obstacle than those in Bangladesh, which also reflects their respective standing on the 2013 world corruption index by Transparency International.⁵ Exporting firms are associated with perceptions of corruption as a greater obstacle than firms that serve only the local market. Respondents in older firms report corruption as a bigger obstacle.

Interestingly, the effects of some control variables changed in the instrumental variable approach. For instance, initial results showed that CEOs and senior employees perceived corruption as a lesser issue. However, this effect disappeared in the instrumental variable estimation. This indicates that owners are more likely to be exposed to corruption than others, and once this is controlled for, the differences in corruption reports between the respondents' positions in the firm disappear. The same effect is obtained for firm age – when controlling for exposure, respondents in older firms are not more likely to report corruption as a larger obstacle.

Certainly, there are also a number of limitations to the present findings. We are aware that by looking at dedication and exposure as predictors of whether corruption is an

⁵ See <http://www.transparency.org/cpi2013/results>.

obstacle, we only illuminate cornerstones of a multidimensional process. Still, our study shows that including aspects such as individual respondent's attitudes and his or her prior exposure play an important role in people's attitudes towards corruption. Future studies might want to explore the limits and conditions of these relationships. A second limitation of this study concerns the measurement of corruption as a reported obstacle, which was captured by a single item measure only. While this allowed for a general estimate of how people think about the corruption, it does not inform about the specific areas affected by it. A more detailed enquiry into the multifaceted phenomenon of corruption would be an important way forward. Eventually, it needs to be pointed out that the present results stem from a single measurement occasion only. In this sense, conclusions about causality in the present study cannot be made using differences over time. We confront this limitation by applying instrumental variable regressions for the relationship between perceived corruption and prior exposure. In addition, we control for answer bias, and use two different country samples to illustrate the robustness of our findings.

Practical implications and future research

The finding that prior exposure to corruption affects the perception of corruption as an obstacle has practical implications. It seems that exposure to corruption is a bigger issue than a straightforward analysis of survey data would suggest. Respondents underreport corruption, especially exposure to it, to a substantial degree, thereby generating bias in the corruption data. The reported randomised response technique might be one way to control for that. Respondents that report not being exposed to corruption perceive corruption as a less severe obstacle. This might indicate that non-exposure leads to an unrealistically low perception of corruption as an obstacle for the overall economy.

In addition, the results show that corruption seems to be a large obstacle for those who are highly dedicated to their job. Given that dedication is indicative for individual and business performance, it is conceivable that corruption seems to asymmetrically affect firms with more productive, growth oriented firms affected more than others. Those firms might benefit most from action undertaken towards reducing corruption.

Our findings are also relevant to other researchers interested in survey data on sensitive issues. In the present article, we illustrate how answer biases on sensitive issues can be detected and then used to control for endogeneity issues stemming from measurement errors affecting the sensitive variable of interest - in our case, 'prior exposure to corruption'. The idea was to purge coefficients from bias affecting the variable 'prior exposure', thereby obtaining

a more reliable estimate of corruption as a perceived obstacle. The more exposure in the past, the higher corruption as a perceived obstacle becomes. This finding points at a self-enforcing process. However, similar feedback effects are conceivable for work attitudes. The present results from the instrumental variable regression point into this direction. While job dedication is negatively related to exposure to corruption in the first stage, it remains positively associated with the perception of corruption as an obstacle in the second stage. We hope our contribution encourages researchers to study the repeated effect of corruption on work attitudes over time.

Acknowledgements

The data used in this paper are from the World Bank Enterprise Surveys for Sri Lanka and Bangladesh [Enterprise Surveys (<http://www.enterprisesurveys.org>), The World Bank]. We would like to thank John Antonakis, Jeremy Dawson, Chris Stride, Peter Warr and Michael Wong for helpful discussions and comments. Responsibility for all errors, omissions, and opinions rests solely with the authors.

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Tables and Figures

Table 1 – Work dedication scale

Question	Mean	Std. Dev.
I find the work that I do full of meaning and purpose.	5.59	1.18
I am enthusiastic about my job.	5.35	1.15
My job inspires me.	5.22	1.18
I am proud of the work that I do.	5.22	1.20
To me, my job is challenging.	4.78	1.50

Note: This table provides the descriptive statistics for the questions used in the Utrecht work engagement scale (Schaufeli et al., 2006), own calculations.

Table 2 – Descriptive statistics and correlation matrix

	Mean	Std. Dev.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 Corruption (0-4)	1.84	1.41	1.00														
2 Work dedication	5.23	0.94	0.02	1.00													
3 Exposure	0.10	0.31	0.08*	-0.07*	1.00												
4 Answer Bias	4.17	1.76	-0.12*	0.01	-0.03	1.00											
5 Gender	0.07	0.26	-0.13*	0.07*	-0.02	0.02	1.00										
6 Owner	0.33	0.47	-0.07*	0.05*	0.03	-0.07*	-0.03	1.00									
7 CEO	0.52	0.50	0.07*	-0.05*	-0.03	0.01	-0.06*	-0.74*	1.00								
8 Employee	0.15	0.35	-0.01	0.00	-0.01	0.07*	0.12*	-0.29*	-0.43*	1.00							
9 Labour (ln)	2.96	1.23	-0.02	0.18*	0.12*	-0.03	0.09*	-0.19*	0.08*	0.14*	1.00						
10 Age (ln)	2.52	0.78	-0.10*	0.03	0.07*	-0.05	0.10*	0.04	-0.05	0.01	0.19*	1.00					
11 Family	0.38	0.49	-0.13*	0.01	0.07*	-0.02	0.05*	0.10*	-0.06*	-0.06*	-0.07*	0.06*	1.00				
12 Export	0.16	0.36	-0.02	0.02	0.14*	0.04	0.08*	-0.18*	0.06*	0.16*	0.31*	-0.01	0.00	1.00			
13 Manuf.	0.61	0.49	0.12*	-0.16*	0.03	-0.08*	-0.09*	0.18*	-0.07*	-0.14*	-0.07*	0.08*	0.09*	-0.09*	1.00		
14 Urban	0.52	0.50	0.52*	-0.22*	0.08*	0.03	-0.22*	-0.28*	0.23*	0.05*	-0.22*	-0.22*	-0.10*	0.02	0.19*	1.00	
15 Sri Lanka	0.43	0.50	-0.61*	0.17*	-0.05	0.06*	0.25*	0.22*	-0.19*	-0.02	0.10*	0.22*	0.15*	0.02	-0.26*	-0.92*	1.00

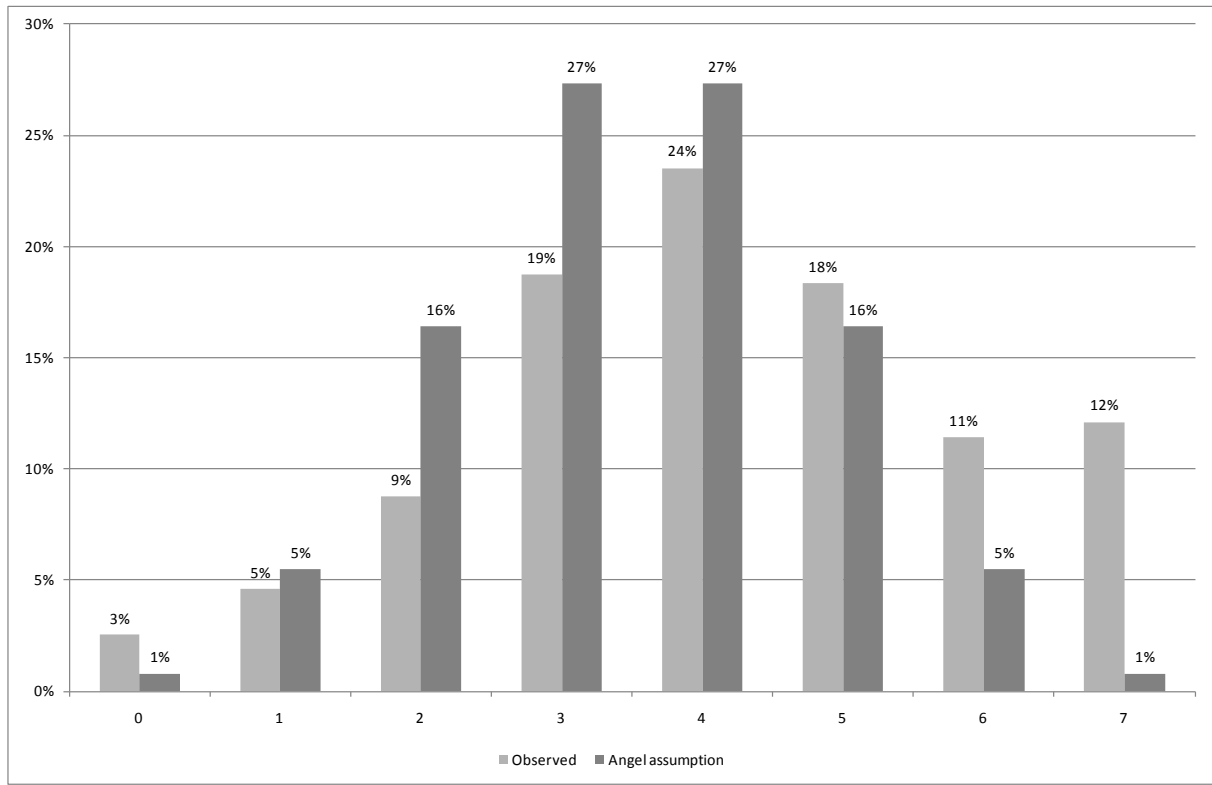
Note: This table provides the descriptive statistics for the variables used. Gender, owner, CEO, employee, family business, export, manufacturing, urban and Sri Lanka are dichotomous; * p<0.05

Table 3 – Regression results – estimating reported severity of corruption

Dep. Var.	(1)	(2)	(3)	(4)	(5)	(6)
	OLS		Ordered Logit		2SLS	
	Corruption	Corruption	Corruption	Corruption	Exposure	Corruption
Dedication	0.14** (0.041)	0.28** (0.037)	0.19** (0.053)	0.53** (0.065)	-0.03** (0.010)	0.37** (0.059)
Exposure	0.40** (0.126)	0.41** (0.117)	0.52** (0.167)	0.84** (0.198)		3.59* (1.431)
Answer bias	-0.09** (0.022)	-0.05** (0.020)	-0.11** (0.027)	-0.08* (0.034)	-0.00 (0.006)	-0.03 (0.031)
Gender		-0.05 (0.139)		0.09 (0.273)	0.06 (0.056)	-0.26 (0.222)
CEO		-0.16+ (0.080)		-0.21 (0.141)	-0.06** (0.023)	0.07 (0.146)
Employee		-0.19 (0.122)		-0.26 (0.203)	-0.08* (0.035)	0.08 (0.211)
Lab (ln)		0.02 (0.032)		0.02 (0.056)	0.04** (0.010)	-0.10 (0.071)
Firm age (ln)		0.09+ (0.048)		0.16+ (0.081)	0.03* (0.013)	0.02 (0.071)
Fam. Biz.		-0.10 (0.073)		-0.05 (0.128)	0.04+ (0.021)	-0.26* (0.119)
Export (Dummy)		-0.08 (0.095)		-0.20 (0.151)	0.12** (0.036)	-0.45* (0.208)
Manuf. (Dummy)		-0.02 (0.083)		-0.03 (0.144)	-0.01 (0.023)	0.04 (0.114)
Urban (Dummy)		-0.21 (0.128)		-0.31 (0.226)	0.25** (0.044)	-0.77* (0.304)
Sri Lanka (Dummy)		-2.09** (0.132)		-3.67** (0.279)	0.18** (0.042)	-2.38** (0.219)
IV: Regional bias					-0.04+ (0.023)	
IV: Interviewer bias					-0.03* (0.015)	
Observations	1,161	1,042	1,161	1,042	1,027	1,027
R-squared	0.03	0.42	0.01	0.17	0.09	-0.06

Note: This table shows the regression results for the reported severity of corruption. The first two columns show OLS results, and columns (3) and (4) show results for the ordered logit regression. Both methods have been estimated with and without control variables. Column (5) and (6) show the results for the 2SLS estimation. Robust standard errors are reported in parentheses; ** p<0.01, * p<0.05, + p<0.1; Constants are not reported; Pseudo R² for ordered logit regressions; centred R² for 2SLS regressions.

Figure 1 – Distribution of negative responses from the forced random response method



Note: This figure shows the observed distribution of negative responses and the distribution that would have been expected according to the angel assumption (people have not committed these acts).