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Who bears the burden of bribery?
Evidence from Public Service Delivery in Kenya

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Abstract

This paper empirically examines how an individual's economic, social and political capital affe

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1. Introduction

The theoretical debate on who bears the cost of bribery in public service delivery has culminated with two contrasting hypotheses. One line of argument posits that the burden of bribery is borne by the rich and those who are politically connected, as they can afford to 'grease the wheels' and circumvent costly bureaucratic red tape. Bribery is perceived to be an outcome of a rational process which enhances efficiency, especially in countries with weak institutions and accountability mechanisms (Leff, 1964; Rose-Ackerman, 1978). However, a competing argument postulates that the burden of bribery is borne by the poor as they significantly depend on public services due to income constraints and costly exit options to alternative private suppliers (Myrdal, 1968; Hirschman, 1970). Bribes are therefore perceived to 'sand the wheels' and generate adverse welfare implications (Meon and Weill, 2010; Deininger and Mpunga, 2005). Reconciling these conflicting arguments on who bears the burden of bribery remains challenging and disappointing, despite its importance in the design of sound anti-corruption reforms. At the theoretical level, most studies are grounded on a uni-dimensional approach in economics, sociology or political science. At the empirical front, micro-level data which matches the incidence of bribery with public service delivery and income levels is largely unavailable. This paper reconciles this debate by providing empirical evidence which takes into account these diverse dimensions.

The objective of this paper is twofold. First, it examines how economic, social and political factors affect an individual's likelihood to pay a bribe in exchange for public services such as health, education, water, security and permits in Kenya. The main emphasis is pl41(o)1l(n)1155 Td[( )] TJ3chec

bribery

Kenya show that bribery has steadily soared over the past years, resulting in

services for less than the official price, implying that both rich and poor individuals are better off bearing the burden of bribery.

The third prerequisite relates to the level of accountability, which to a large extent depends on the strength of political and legal institutions - as they determine the probability of detection and sanction. Theoretical predictions argue that when politicians are elected by local constituents, the degree of accountability is high as public officials have the incentives to provide public services in an honest manner, given that their career prospects hinge directly on the local citizens and not on the central government (Wallis and Oates, 1988). In addition, the close proximity between citizens and bureaucrats enhances accountability by reducing information asymmetry since the costs of monitoring the behaviour of bureaucrats are low (Bardhan and Mookherjee, 2000). In fact, Seabright (1966) argues that due to repetitive interactions, local citizens are able to correctly infer strategic behaviour of bureaucrats and use such information to sanction or reward them in democratic elections. The possibility of sanctioning in turn

courts, facilitating media reports about corrupt acts or officials, or by using violence, threat, or organized campaigns against corrupt officials' (p.426). Such countervailing strategies can deter corruptive behaviour by increasing the probability of detection and sanction. Empirical evidence by Kneller et al. (2007) and Reinikka and Svensson (2004) suggest that high levels of information dissemination can improve accountability by informing citizens about bureaucratic procedures and the cost of public services.

2.2. Theoretical propositions on who bears the burden of bribery

2.2.1 Rich individuals: The economist argument

The mainstream approach dominating the literature argues

to act

On the other hand, political networks are associated with increased propensity to promote self-interest motives as opportunistic individuals can interact with well-connected politicians to influence bureaucratic decisions. Grounded in the works of Portes (1998) and North et al. (2009), political contacts are associated with limited access order, as personal relationships form the basis for social interaction. As a result, political networks are perceived as special interest groups whose preferences are misaligned with institutional and social norms. The adverse effect of political networks is exacerbated when politicians have influence on government bureaucrats. Kaufmann and Wei (2000) show that in most African countries, politicians can sanction bureaucrats by transferring them to remote locations or impeding their career advancement, making them vulnerable to capture. Even worse, Arrow (1972)

member of the society is corrupt, not engaging in bribery turns out to be an irrational strategy, leaving one worse off. This in turn generates a societal norm and culture of bribery, culminating

which depends positively on current wages (w), bribes received (b), as well as the function p (w, b) which represents the probability of holding a public office, V^p captures the expected future utility and   denotes any accountability mechanisms which constraints the bureaucrat from engaging in corruption.

However, according to the theoretical propositions by Rose-Ackerman (1978), Olson (1982) and Putnam (1993), a key attribute affecting the parameter *b*

willingness to bribe. In light of these additional factors, the conceptual framework advances the following testable hypotheses;

I.   The likelihood of paying bribes to access public services is borne by poor individuals and depends on the type of public service;

II.   The likelihood of paying bribes decreases for individuals with social networks;

III. The likelihood of paying bribes increases for individuals with political networks;

IV.   Strong accountability mechanisms reduce the incidence of bribery.

4. Empirical Methodology

4.1 Data

The data used to test the above hypotheses is obtained from the 5th round of the *Afro-barometer* survey, a cross sectional individual-level survey on the quality of democracy and governance in Kenya. The survey was conducted between November 2011 and November 2012 using a standard questionnaire translated into 7 different languages (English, Kiswahili, Kikuyu, Luo, Kamba, Kalenjin and Luhya) by trained enumerators from the University of Nairobi. The unit of observation and analysis is the individual and survey respondents are restricted to those above 18 years old. The sample consists of 2400 individuals located in 44^2 local government counties, thus being a nationally representative survey. However, due to missing values, the sample slightly reduces to 2305 individuals. The sampling frame is based on the 2009 National Population and Housing Census conducted by the Kenya National Bureau of Statistics while the sample design is a 'random, clustered, stratified, multistage area probability sample' (Carter, 2012, p. 2). The

such as religious or voluntary/community groups. The definitions of the main variables used in the empirical model are summarized in Table A1.

4.2 Empirical Model

In order to examine who bears the burden of bribery, the baseline specification which estimates the probability of an individual paying a bribe conditional on prevailing economic, social and political factors is denoted by

$$y_{ij} \quad _0 \quad _{1j}Z_{ij} \quad _{2j}S_{ij} \quad _{3j}P_{ij} \quad _{4j}B_{ij} \quad _{5j}X_{ij} \quad _i \quad _{ij}$$

rather than their poverty levels. It also improves on the income measures used by Hunt (2007) as respondents are more likely to underestimate their income and wealth in survey data.

5. Results

5.1 Descriptive Statistics

Descriptive statistics on the perception of bribery in the country's main institutions is depicted in Table A3. The data reveals that bribery is perceived to be high and prevalent, especially in institutions at the county level. At least 90% of the respondents claim that local government councillors, bureaucrats, members of parliament and the police are corrupt. Among these, 31% claim that the entire police force is corrupt, while this magnitude is 15.6% for councillors and 13% for members of parliament, perhaps reflecting the degree of discretionary powers exercised by such officials or due to prior experience. Less than 10% of the respondents perceive corruption to be non-existence, a finding consistent with TI (2015). Table A4 presents the distribution of bribe payments, disaggregated by poverty quintile, where the 1st quintile represents the poorest individuals while the 5th quintile represents the richest. The results show that while the burden of bribery is distributed across all groups, a substantial number of individuals who paid bribes fall in the middle of the distribution. Thus, bribery seems to be a major problem affecting both rich and poor individuals. Out of 2305 respondents, 56.2% paid a bribe to access a permit while 54.1% paid a bribe to avoid problems with the police. According to the Paul (1992), these reflect the type of public services which the bureaucrats possess monopoly in their provision and thus more likely to exhibit higher bribery rates.

Table A5 reports the frequency of bribe payments across all the public services. The results show that the frequency of bribery is high for police and permits, services which are only provided by bureaucrats. For instance, 6.8 % of the respondents pay bribes regularly when seeking permits while 20.3% of the respondents have at least paid a bribe once or twice. The pairwise correlation matrix in Table A6 shows that paying bribes is positively and significantly correlated with an individual's poverty level as well as social and political capital. Individuals who have contacted politicians are more likely to pay bribes while old respondents, especially females, are associated with lower propensity to bribe, given their limited contacts with bureaucrats or demand for public services.

5.2 Estimating the determinants of paying bribes

Tables 1-2 report the determinants of bribe payment in exchange for public services across the 44 local counties. As a starting point, Table 1 presents the results of a linear probability model (LPM) corresponding to the baseline specification. In column (1), the binary dependent variable equals 1 if an individual paid a bribe to access at least one type of public service and zero otherwise, while in columns (2) through (6), the dependent variable is disaggregated in order to examine whether the

bribes in exchange for public services. This result is robust across the different public services, even after controlling for individual-level characteristics and county fixed effects. In column (1), the coefficient of poverty implies that a 1 unit increase in poverty multiplies the odds of paying a bribe by a factor of exp (0.067) = 1.069. In other words, with all other factors held constant, the probability for a poor individual to pay a bribe increases by 6.9%. This result is in line with the theoretical claims by Peiffer and Rose, (2014) that bribery has adverse distributional consequences and does not constitute an elite problem in most African countries. Consistent with the LPM results, the likelihood of paying a bribe also depends on the type of public service. Poor individuals in pursuit of health services are more likely to face bureaucratic corruption (the odds increase by 8.5%) while the odds of those seeking public education increase by 3.6%. This could perhaps reflect the possibility that the rich use the exit option and opt out of public health or education, while the poor who continue to depend on such services bear the cost of bribery. In sum, the estimates from both LPM and logistic regression are consistent with the pairwise correlations in Table A6 and provide consistent evidence to support hypothesis 1: compared to rich individuals, the poor are more likely to pay bribes to bureaucrats in exchange for public services.

The empirical results in Tables 1-2 also underpin social capital and informal networks as key determinants of bribe payment. In line with

and police services (16.1%). As argued by Tanzi (1995), in weak states, localization of public service may 'promote personalism and reduce professionalism and arm's length relationships as bureaucrats value individual citizens needs and disregard public interests' (Shah, 2006. p. 17). This finding seems to be in line with a case study by Khaunya et al. (2015), where the authors find evidence of collusion between local politicians, bureaucrats and elites due to increased cohesiveness at the county level. In line

$$\left(\dfrac{}{}\right) = \log\left(\dfrac{}{}\right) = \tau^{(j)} - (\beta_{1j}Z_{ij} + \beta_{2j}S_{ij} + \beta_{3j}P_{ij} + \beta_{4j}B_{ij} + \beta_{5j}X_{ij} + \gamma_i + \varepsilon_{ij})$$

<div align="center">Equation (3)</div>

where the dependent variable has 4 ordered categories denoted by $j = 1, \ldots 4$, $\tau^{(j)}$ are the 3 thresholds between each category and probabilities $\pi = P(Y_i \leq j)$.

Consistent with the previous findings, not only are the poor more likely to pay bribes, but they make such payments more frequently than the rich and well-off. Across the different public services, the coefficient of poverty turns out to be positive and statistically significant at the 1% level, even after the inclusion of several control variables and local county fixed effects. In column (1) of Table 3, the odds of paying bribes for poor individuals is in exchange for permits is multiplied by a factor of exp $(0.105) = 1.1107$. This is equivalent to stating that, controlling for the other explanatory variables, a 1 unit increase in the poverty index is associated with an 11.07% increase in the odds of giving a response that indicate higher frequency in paying bribes in exchange for permits. The empirical results further show that despite an even distribution of the frequency of bribe payment across the different public services, the magnitude is stronger

Table 3: Ordinal Logistic Regression

Dependent variable: Bribe paid	(1) Permits	(2) Water	(3) Health	(4) Police	(5) Education
Poverty	0.105^{***}	0.141^{***}	0.147^{***}	0.059^{***}	0.115^{***}
	(5.99)	(7.12)	(10.83)	(4.05)	(7.12)
Religious group member	-0.007	-0.103^{*}	-0.018	-0.114^{***}	0.001
	(-0.15)	(-1.82)	(-0.33)	(-2.65)	(0.02)
Voluntary group member	0.024	0.188^{***}	0.096^{**}	0.154^{***}	0.118^{**}
	(0.52)	(4.52)	(2.17)	(2.95)	(2.45)
Contact with local councilor	0.199^{***}	0.060	0.125	0.056	0.125
	(3.09)	(0.70)	(1.63)	(0.87)	(1.35)
Contact with MP	0.021	0.121	0.197^{**}	-0.050	0.128
	(0.28)	(1.43)	(2.28)	(-0.59)	(1.45)
Contact with gov. agency	-0.047	-0.172^{*}	-0.123	0.010	-0.180^{*}
	(-0.74)	(-1.75)	(-1.46)	(0.22)	(-1.88)
Contact with political party	0.035	0.130	-0.078	0.240^{**}	0.016
	(0.46)	(1.25)	(-0.90)	(2.52)	(0.18)
Control variables	Yes	Yes	Yes	Yes	Yes
N	2305	2305	2305	2305	2305
Pseudo R^2	0.041	0.055	0.052	0.042	0.038

z statistic in parentheses. Robust standard errors used. Significant at * 10%; ** 5%; *** 1%.

5.4 Estimating the role of accountability mechanisms

In line with the political agency model elaborated in the conceptual framework, this section examines how countervailing accountability mechanisms such as voice and exit can cushion the poor from bribery by altering bureaucrat's opportunistic behaviour and increasing the levels of political awareness. To analyse this link, an interaction term between proxies for accountability and poverty are introduced into the baseline specification which is estimated using a binary logistic model. Due to data availability, the analysis is only restricted to the use of voice as an instrument for enforcing accountability. Following Alam (1995), the strength of civil society movements and a free and independent media are used as proxies for

and

and the intercept term as well as all variables excluded from the interaction are denoted by *A*. By taking derivatives, the effect of poverty on bribe payment is given by $_1$ $_3(Accountability)$, where it is conditional on the strength of existing accountability mechanisms. Table 4 reports the results corresponding to civil society movements, and the interaction term is negative and statistically significant across most specifications. The empirical estimates in column (1) show that the effect of poverty on bribe payment is 0.104-0.015*(civil society). Intuitively, this implies that when the civil society is weak (civil society = 0), the odds of a poor individual paying a bribe in exchange for a publia9

6. Robustness

To ensure the reliability and accuracy of the main findings, three potential concerns are addressed. The first one relates to differences in the interpretation of bribery across respondents from different cultures in the different counties. However, such effect can be argued to be minimal given that the survey was conducted in local languages. The second concern appertains to

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Wallis, J and Oates, W. 1988. Decentralization in the Pub[(-)] .>ETBTorruptiS.042 TJETBT3009(88.)-32(D)5a

Appendix

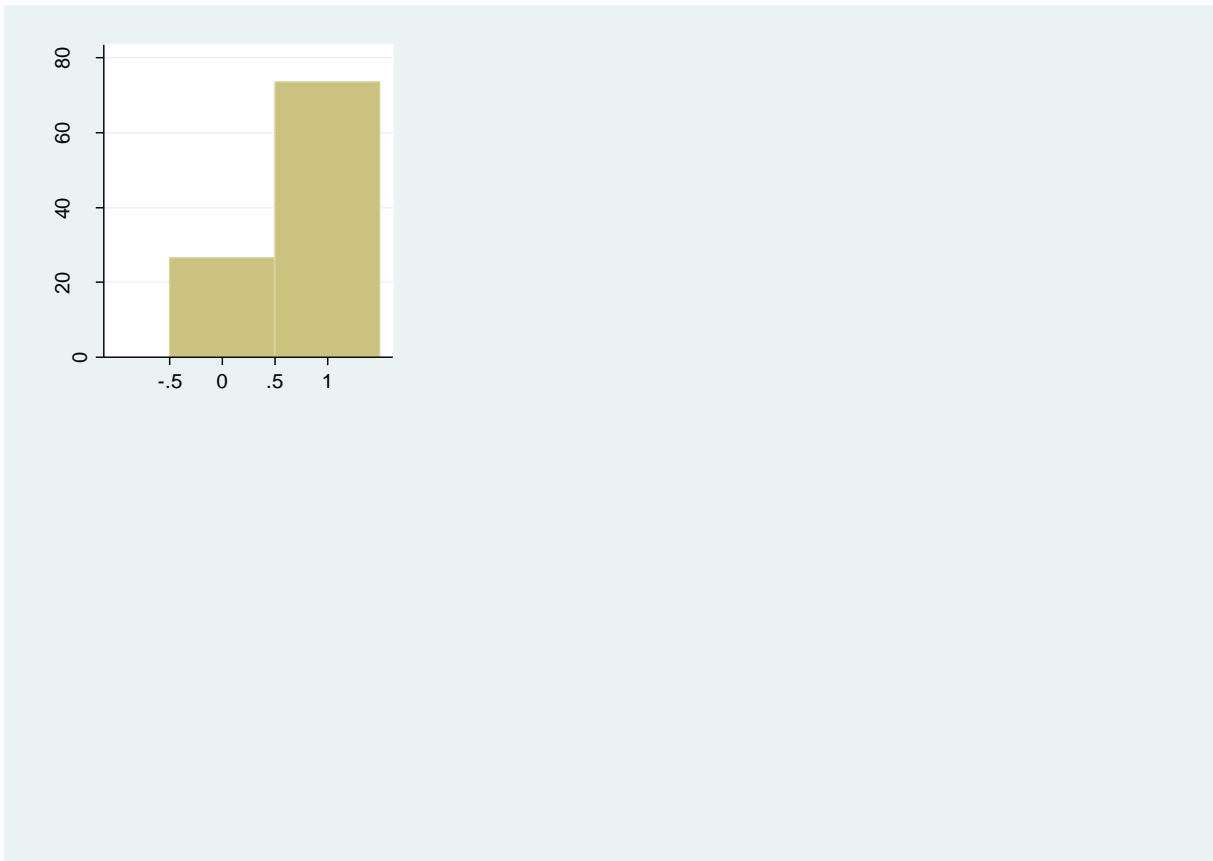**Figure 1: Distribution of poverty index**
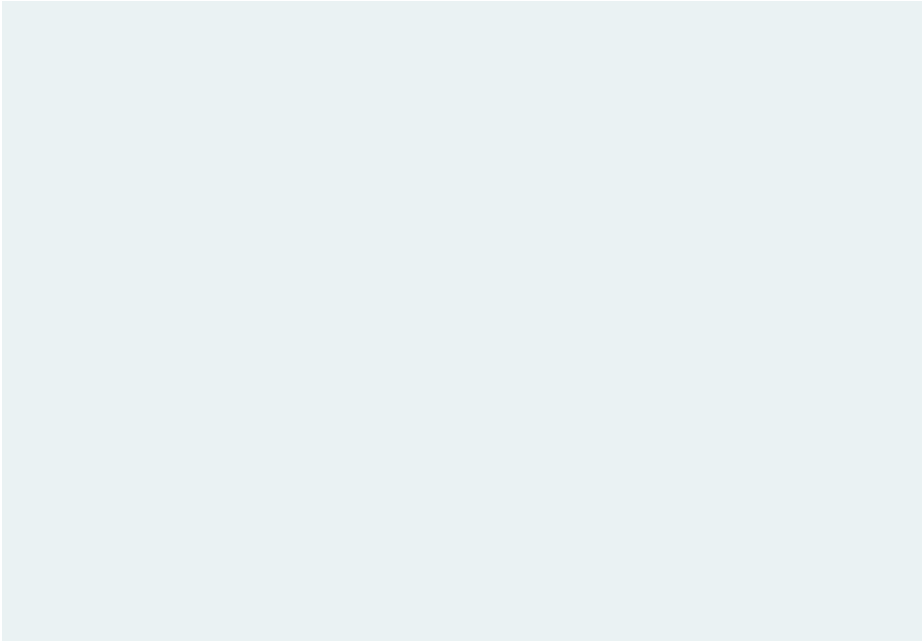
Source: own calculation from Afro-barometer survey (2011).

Figure 2: Distribution of the response variable (disaggregated by each public service)

Source: own calculation from Afro-barometer survey (2011).

Table A1: Variable Description

Variable	Question number in the survey	Description [*]	Expected sign

Table A2: Pairwise Correlation (components of the poverty index)

	Fuel	Water	Medical care	Cooking fuel	Cash income
Fuel	1				
Water	0.461**	1			
Medical care	0.474**	0.485**	1		
Cooking fuel	0.409**	0.428**	0.431**	1	
Cash income	0.408**	0.305**	0.414**	0.323**	1

** Significance at 5%.
Source: own calculation from Afro-barometer survey (2011).

Table A3: Distribution of the number of individuals (in %) who perceive different institutions as corrupt

	all of them	most of them	some of them	none of them	don't know
Members of parliament	13.1	36.8	41.0	2.3	6.8
Government officials	12.4	40.1	39.4	1.6	6.4
Local government councillors	15.6	34.7	41.0	2.9	5.9
Police	31.0	39.3	23.0	2.4	4.9

Source: own calculation from Afro-barometer survey (2011).

Table A4: Distribution of the number of individuals (in %) who paid a bribe, disaggregated by quintiles of the poverty index

						Number of people who		number of respondents
	1st	2nd	3rd	4th	5th	paid bribes	did not pay bribes	
Permits	11.7	11.76	10.2	13.15	9.5	1296	1009	2305
Water or sanitation services	8.5	8.8	6.3	10.02	7.2	940	1365	2305
Treatment at local health clinic	7.3	7.6	6.2	10.4	7.8	905	1400	2305
Police	12.1	12.1	8.2	12.2	9.5	1247	1058	2305
Placement in primary school	8.7	8.2	5.6	8.9	6.7	876	1429	2305

Source: own calculation from Afro-barometer survey (2011).
Note: The quintiles are constructed using the poverty index as outlined in section 4.

Table A5: Distribution of the number of individuals (in %) who paid a bribe, disaggregated by frequency of payments

	Often	a few times	once or twice	no experience within last past year
Permits	6.8	11.8	20.3	18
Water or sanitation services	2.6	7.4	7.6	23.3
Treatment at local health clinic	4.2	11	12.8	11.8
Police	8.2	10.8	12.7	22.6
Placement in primary school	2.4	5.6	9.1	21

Source: own calculation from Afro-barometer survey (2011).

Table A6: Correlation Matrix

	Bribe index	Poverty	Religious group member

Table A9: Robustness results: Ordered regression - correction for social desirability bias

	(1) Permits	(2) Water	(3) Health	(4) Police	(5) Education
Poverty	0.097***	0.153***	0.142***	0.071***	0.144***
	(6.54)	(7.66)	(8.61)		