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Corruption along ethnic lines:

A study of individual corruption experiences in 17 African countries

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Abstract: While a growing literature relates macro variation in corruption to ethnic divisions, existing studies have paid little attention to the possible existence of systematic micro variation in corruption along ethnic lines. The present paper examines whether individual corruption experiences vary systematically depending on ethnic group affiliation, and what the nature of this possible variation is. More specifically, it considers the effect of belonging to influential ethnic groups. Empirical findings drawing on data for more than 23,000 respondents in 17 African countries indeed suggest that individual corruption experiences vary systematically along ethnic lines. Belonging to influential ethnic groups – in terms of relative group size or relative economic and political standing – is associated with a greater probability of having experienced corruption. Assuming that belonging to a larger and economically/politically stronger group helps proxy for a greater probability of the corrupt public official being a co-ethnic, this should imply more corruption among co-ethnics, supporting the idea that enforcement mechanisms within ethnic groups could act to strengthen corrupt contracts. The results depend on the type of corruption considered, though; when focusing on a more clearly extortive form of corruption, there is less evidence of collusive behaviour.

1 Introduction

Sub-Saharan Africa is not only the poorest region in the world; it is also home to some of the world's most corrupt and ethnically fragmented countries. Perhaps as a consequence, a growing literature relates corruption and poor quality of government more generally to ethnic divisions (see e.g. Mauro, 1995; Easterly and Levine, 1997; LaPorta et al., 1999; Treisman, 2000; Alesina et al., 2003). However, while existing studies have investigated macro – and to a lesser extent, meso – variation in ethnic divisions and corruption outcomes, there is a lack of work focusing on the possible existence of systematic individual variation in corruption experiences based in ethnic affiliations.

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The present paper explores variation in individual corruption experiences along ethnic lines. Drawing on recent data on over 23,000 respondents in 17 African countries, the aim is to examine whether individual corruption experiences vary systematically depending on ethnic group affiliation, and if they do, what is the nature of this variation. More specifically, it considers the effect of belonging to influential ethnic groups – in terms of relative group size or relative economic and political standing – arguing that this should help proxy for a greater probability that the encountered public official is a co-ethnic. The empirical findings indeed suggest that individual corruption experiences vary systematically along ethnic lines. Belonging to influential ethnic groups is associated with a greater probability of having experienced corruption, seemingly suggesting more corruption among co-ethnics and supporting the idea that enforcement mechanisms within ethnic groups could act to strengthen corrupt contracts. However, the results depend on the type of corruption considered; focusing on a more clearly extortive form of corruption, there is less evidence of collusive behaviour.

Several studies suggest that corruption is more prevalent in more ethnically fragmented countries (Mauro, 1995; LaPorta et al., 1999; Treisman, 2000; Alesina et al., 2003). While one cannot draw causal conclusions based on this cross-country correlation pattern – ethnic fractionalization is likely to pick up omitted factors related to corruption (e.g. level of economic development, see La Porta el al., 1999, and Treisman, 2000) – it is interesting to note that there is within-country evidence also pointing to more corruption in ethnically fragmented locations. In a study on corruption in an Indonesian anti-poverty programme distributing subsidized rice, Olken (2006) finds that areas with higher within-village ethnic fragmentation have a higher likelihood of experiencing corruption. Similarly, considering variation within the U.S., Glaeser and Saks (2006) find higher levels of corruption in more racially fragmented states, controlling for state differences in income, education, population size and degree of urbanization.

Furthermore, some recent studies stress the role of ethnic inequalities and ethnic segregation. Alesina et al. (2012) find that countries with higher levels of ethnic inequality, i.e. economic inequalities across ethnic groups within countries (see also Baldwin and Huber, 2010), tend to have higher levels of corruption. Similarly, Alesina and Zhuravskaya (2011) find that more ethnically segregated countries, i.e. those where groups live more geographically separated, tend to score worse on a number of quality of government indicators, including corruption control.

Observing macro and meso level relationships between corruption and these ethnic dimensions naturally raises the question of whether more ethnically

fragmented/segregated/unequal locations experience higher levels of corruption across the board, or if there is systematic variation in corruption experiences depending on individual ethnic affiliations. I am not aware of any studies exploring the possible links between ethnic affiliations and corruption experiences at the micro level. Hence, the main contribution of the present paper lies in investigating whether individual corruption experiences also vary systematically along ethnic lines and, if so, through what mechanisms.

2 Corruption along ethnic lines: theoretical background

Thinking of corruption as the misuse of public office for private gain (Rose-Ackerman, 1975; Bardhan, 1997), one can assume that the public official weighs the benefits of corrupt behaviour against its costs and then chooses to establish a corrupt relationship when the former outweigh the latter (see the reasoning in Glaeser and Saks, 2006). While the benefits of corruption have to do with the public official's ability to extract resources for personal gain, which is in turn related to the size of the bureaucracy and the level of discretion s/he has over the provision of government goods, its costs originate in the probability of, and the penalties from, being caught (see e.g. Shleifer and Vishny, 1993).

In line with this, it has been suggested that ethnic divisions impact corruption by reducing the popular will to oppose corrupt politicians (see e.g. Glaeser and Saks, 2006; Banerjee and Pande, 2007). The argument is that redistribution across ethnic groups (see e.g. Burgess et al., 2009, and Franck and Rainer, 2011) makes people support candidates from their own ethnic group, even if s/he is known to be corrupt, and by doing so decrease the cost of corruption. Presumably, acceptance of high level corruption – i.e. corruption among elected leaders – could then translate into a greater acceptance of corruption among lower level public officials too. Through these mechanisms related to ethnic divisions, society risks being infested by corruption. However, the suggested increase in corruption might well affect the ethnically divided society across the board; individual corruption experiences need not vary depending on specific ethnic affiliations.

A slightly different (but not mutually exclusive) approach is to argue that the likelihood that a corrupt relationship is established depends on the ethnic affiliations of the individuals involved. While this view suggests that individual corruption exposure should vary systematically along ethnic lines, the predicted nature of this variation is not all clear. Habyarimana et al. (2007) suggest that ethnically homogeneous communities have an

advantage in providing public goods because ethnic groups possess both cooperation-facilitating norms and networks that facilitate the sanctioning of community members who fail to contribute to collective endeavours.[1] A shared culture – language, experience etc. – may make co-ethnics more effective than non-co-ethnics in communicating and working together and in establishing cooperative norms, and a shared membership in a social network may enable co-ethnics to find, and punish, non-cooperators. Viewing ethnic groups as institutions for collective action, this argument can reasonably be extended to a broad range of outcomes that depend on collective efforts (Kimenyi, 2006; Habyarimana et al., 2007).

In the context of corruption along ethnic lines, the relevant question becomes what constitutes the collective endeavour among co-ethnics – upholding corrupt relationships or preventing them? The answer to this question should depend on to what extent the corrupt transactions are extortive or collusive. Extortive, or non-collusive, corruption refers to situations where the government official has the discretionary power to refuse or delay a service that the individual is legally entitled to in order to extract a rent. As such, it can be seen as a form of blackmailing that is beneficial to the bribe-taker but imposes additional costs on the bribe-giver. Collusive corruption, on the other hand, is mutually beneficial to both the bribe-taker and the bribe-giver, meaning that upholding the corrupt relationship lies in the interest of both parties involved (see e.g. Brunetti and Weder, 2003; and Foellmi and Oechslin, 2007). Whereas collusive corruption often refers to situations where the individual is involved in illegal activity (e.g. bribing a tax auditor to overlook a case of tax evasion), extortive corruption suggests no blame on the part of the individual.

Still, the distinction between extortive and collusive corruption is by no means clear-cut and reasonably needs to be judged on a scale rather than as two distinct categories. In particular, even if the individual is in fact legally entitled to the service in question, the bribe could be framed and perceived as mutually beneficial to both the individual and the public official. In order to collect a bribe, the public official may use his/her discretionary power to deny the individual a service (e.g. a government permit) that s/he is legally entitled to. Yet, with widespread corruption and in the presence of pervasive and cumbersome regulations, the corrupt transaction may well be framed as necessary 'speed money' used as a means to cut red tape. In order to collect bribes and reduce the likelihood of being reported, the corrupt public official has an incentive to convince the individual that the corrupt transaction is in

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[1] An alternative explanation to low public goods provision in ethnically diverse societies is that heterogeneous preferences across ethnic groups make it difficult to pull resources together for public projects (see e.g. Alesina et al., 1999).

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their common interest (Bardhan, 1997). This should be easier to accomplish in some instances than in others. In particular, it is arguably easier for the public official to frame the corrupt transaction as collusive if s/he has an informational advantage, e.g. if obtaining the government service involves a non-transparent application procedure that is difficult for the individual to monitor, and if there are economic stakes involved for the individual. In contrast, in a situation where the rights of the individual are more straightforward and behaviour is clearly observable (consider e.g. a police road block), it should be more difficult to present the bribe as something other than extortive.

So, whether co-ethnics uphold or prevent corrupt relationships should depend on the type of corrupt transaction, and in particular on to what extent it could be perceived – rightly or not – to be mutually beneficial to both parties involved. If the corrupt relationship contains an element of collusion, the enforcement mechanisms within ethnic communities – the ability to provide information about and internal sanctions against those who betray their co-ethnics – could arguably act to strengthen the corrupt 'contract' (Treisman, 2000). However, if the corrupt transaction is more clearly extortive, this enforcement mechanism could reasonably work in the opposite direction, i.e. to uphold a non-corrupt relationship. Also, in line with the above discussion, within-group social ties could presumably enable anti-bribery agreements between co-ethnics, and thus strengthen social norms against corruption within the ethnic group.

The above arguments raise some interesting questions. First of all, do individual corruption experiences in fact vary systematically along ethnic lines, and second, what is the nature of this possible variation? In particular, do co-ethnics uphold or prevent corrupt relationships, and does this depend on the type of corrupt transaction? With access to information on individual corruption experiences and ethnic group affiliations, it is possible to address the first question. With respect to the second question, the fact that the dataset has information about the ethnic group affiliation of the individual paying the bribe but not of the bribe-taker requires us to make some assumptions. In particular, it seems reasonable to argue that belonging to an influential group – measured in terms of relative group size or the group's relative economic standing or political influence – should involve a greater probability that the encountered public official, i.e. the bribe-taker, is a co-ethnic. This will be discussed further in the following section.

3 Data and empirical strategy

Being interested in to what extent individual experiences with corruption depend on ethnic affiliations, I use data from the fourth wave of the Afrobarometer, conducted in 2008-2009. The Afrobarometer is a comprehensive multi-country survey project collecting data on political and economic attitudes and behaviour of African citizens. As such, it is uniquely suited to study corruption experiences in a large African multi-country sample. The sample consists of roughly 23,900 respondents from 17 African countries – Benin, Botswana, Burkina Faso, Ghana, Kenya, Liberia, Malawi, Mali, Mozambique, Namibia, Nigeria, Senegal, South Africa, Tanzania, Uganda, Zambia and Zimbabwe.[2] The survey covers a representative sample of each country's adult population[3] and asks a standard set of questions in all countries, thus allowing for cross-national comparisons. The following benchmark probit for the corruption experience $Corruption_i$ of individual I is estimated:

$$prob\left[Corruption_i = 1\right] = \Phi\left(\lambda \cdot Ethnic_i + \mathbf{X}_i\boldsymbol{\beta} + \mathbf{R}_i\boldsymbol{\delta} + \boldsymbol{\gamma}_c\right).$$

That is, the probability that individual i has experienced corruption in the last year is taken to depend on affiliation with an influential ethnic group $Ethnic_i$, individual controls $\mathbf{X}_i$, and regional controls $\mathbf{R}_i$, allowing for country fixed effects $\boldsymbol{\gamma}_c$. $\Phi(\cdot)$ denotes the standard normal cumulative distribution function.

3.1 Dependent variable

In Section 2, corruption was defined as 'the misuse of public office for private gain'. The dependent variable is meant to capture individual experiences with corruption in dealing with public officials. That is, the focus is on individuals' direct experiences with petty corruption as opposed to their perceptions of grand corruption higher up in government. The first dependent variable is a dummy variable taking the value one if, in the past year, the respondent has 'had to pay a bribe, give a gift, or do a favour to government officials in order to get a document or permit'. Those with no experience of the activity during the period – 23

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percent of the full sample – are left out of the estimation (variation in the tendency to apply for documents and permits is investigated in Section 4.2). When a government official collects bribes for providing 'documents and permits', they charge personally for goods that the state officially owns, thereby 'misusing public office for private gain', in line with the above definition of corruption. [4] In the overall sample, of those who applied for a document or permit during the last year, roughly 20 per cent had experienced corruption (Table A1). There is substantial country variation though, with the share ranging from around 1 per cent in Botswana to around 33 per cent in Kenya (country heterogeneity in results is explored in Section 4.2).

Given how the survey question is phrased (asking whether the respondent '*had to* pay a bribe') and what information respondents can be expected to willingly disclose, this indicator should pick up situations where services that citizens are legally entitled to are conditioned upon paying a bribe (see the discussion in Bauhr and Nasiritousi, 2011). However, as discussed in Section 2, in order to collect bribes and reduce the likelihood of being reported, the corrupt public official has an incentive to convince the individual that the corrupt transaction is in their common interest. Hence, even if the individual is legally entitled to the service in question, the bribe paid to the public official could be framed and perceived as beneficial to both parties, e.g. as necessary 'speed money' to cut red tape. An application procedure for a government permit is arguably relatively non-transparent and difficult for the individual to monitor, enabling the public official to frame the corrupt transaction as mutually beneficial. Moreover, documents and permits are not demanded for their own sake, but rather to comply with regulations that restrict economic activity, meaning that there are most likely economic stakes involved for the individual. Having one's permit request put at the top rather than the bottom of a pile of applications could have significant consequences for one's earning opportunities. Against this background, it seems reasonable that the corrupt transactions captured in the documents/permits measure could contain an element of collusion.

To investigate whether this affects to what extent co-ethnics uphold or prevent corrupt relationships, the results using the documents/permits measure will be compared with the findings one gets when using an indicator capturing corruption that is more clearly extortive.

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[4] The perception of what constitutes a bribe is likely to vary across cultures. In some developing countries, gift-exchange is for example customary in business transactions (Bardhan, 1997). However, the survey question asks about situations where the individual was *required* to offer the public official something *in order to get* the service, i.e. before it was provided rather than as a courtesy afterwards. Moreover, the estimations include controls for country variation in the average level of corruption (e.g. originating in different norms of what constitutes bribery) and focus on within-country variation in the same.

Specifically, a dummy variable taking the value one if, in the past year, the respondent has 'had to pay a bribe, give a gift, or do a favour to government officials in order to get water or sanitation services' is used (again, leaving those with no experience of the activity during the period out of the estimation). Unlike applications for documents and permits, which could be difficult for the individual to monitor and which could have important consequences for his/her earnings opportunities, this indicator concerns access to a basic service. Arguably, conditioning basic water or sanitation services upon paying a bribe is more clearly a case of non-collusive, or extortive, corruption. If anything, we should thus expect less corruption among co-ethnics when using this indicator.

3.2 Explanatory variables

The main explanatory variables focus on ethnic group affiliations. Although measures of different ethnic groupings are commonly used in the economics literature,[5] it is important to note that ethnicity is a complex concept that does not lend itself to easy measurement (see e.g. Horowitz, 1985). In the words of Erdmann (2007, p. 11) it 'denotes a historically and socially constructed identity […] that is multifaceted, changeable and has multiple meanings', or as Fearon (2003) puts it – it is a 'slippery concept'. In line with this description, ethnic groups are thought of as socially constructed identities (rather than biologically given entities) originating in a shared culture. While there is not necessarily one right way to specify the set of ethnic groups in a country, implicit in the notion of an ethnic group is the idea that members and non-members recognize the distinction between groups, meaning that a reasonable list of ethnic groups in a country should depend on what people in the country themselves identify as relevant ethnic groupings (Fearon, 2003).

To proxy for ethnic group affiliations, the following question is used: 'Which [Ghanaian/Kenyan/etc.] language is your home language? That is, the language of your group of origin.' While ethnicity and language are not synonymous – several ethnic groups could share a lingua franca or subgroups of the same ethnicity may speak distinct dialects – it is commonly used to capture ethnic affiliations. Presenting the findings of the first round of the Afrobarometer, Bratton et al. (2005, p. 428) argue that 'language remains the best single marker of cultural identity and is used by Africans themselves as a quick and reliable way to

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[5] See e.g. Easterly and Levine (1997) and Alesina et al. (2003) on ethnic fractionalization, Montalvo and Reynal-Querol (2005) on ethnic polarization and, as mentioned above, Alesina et al. (2012) on ethnic inequalities and Alesina and Zhuravskaya (2011) on ethnic segregation.

attribute ethnicity' (see also the discussion in Posner, 2003, and in Cheeseman and Ford, 2007).[6] The rich data material allows for construction of roughly 330 ethnic group dummies. However, these will merely be used to get a rough picture of whether there is in fact systematic variation in corruption experiences depending on ethnic group affiliations (i.e. their individual estimates will not be interpreted).

The estimations of primary interest rather focus on whether the respondents belong to influential groups – in terms of size, economic or political influence – arguing that this should help proxy for a greater probability that the encountered public official is a co-ethnic. Considering relative group size, compared with someone who is a member of a smaller group, the mere fact that the member of a larger group has a greater number of co-ethnics should arguably translate into this individual having a greater probability of encountering a public official who is a co-ethnic. In terms of group size, the main variable of interest is a dummy indicating whether the respondent belongs to the country's largest ethnic group, i.e. the largest language group in the country sample. To investigate whether belonging to the largest ethnic group has a threshold effect on corruption or if corruption experiences vary linearly with group size, the group's population share in the country (i.e. the share of the survey respondents in the country speaking the concerned language) is also considered.

However, the recruitment of public officials may not be neutral. Rather, there is evidence suggesting that nepotism and a tendency of rulers to recruit bureaucrats primarily from their own ethnic group is a common problem in many African countries (Kimenyi, 2006). Moreover, the largest group in the country does not necessarily need to be the group that is closest to the ruling elite. Therefore, being affiliated to an ethnic group that is relatively privileged is used as an additional proxy for a greater probability of the bribe-taker being a co-ethnic. Two variables intended to capture the relative economic and political standing of the respondents' respective ethnic groups are used: a dummy variable taking the value one if the respondent considers that s/he belongs to an ethnic group with better economic conditions than other ethnic groups in the country, and an equivalent dummy indicating whether the

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[6] The alternative would be to use the question 'What is your tribe? You know, your ethnic or cultural group.' However, this question is problematic since some respondents answer in 'non-ethnic' terms (e.g. with respect to age, gender and political affiliations), and because a relatively large number of respondents (over 2,000) either do not answer the question or claim to identify in national rather than ethnic terms. The latter is of course interesting in itself, why a variable focusing on the salience of ethnic identities later will be included, but for the ethnic group affiliations variable it is relevant to consider not only how the respondents perceive themselves, but also how they are perceived by others with whom they might engage in potentially corrupt transactions. Even if you yourself do not identify in ethnic terms, others may see you as a member of their group, and treat you accordingly.

respondent considers that s/he belongs to an ethnic group with more political influence than other groups in the country.

We should control for other factors – not depending on individual ethnic affiliations – possibly affecting the costs and benefits of corruption to the public official, as well for factors affecting to what extent the respondent is exposed to situations where corrupt transactions might take place. Just as the individual being a co-ethnic or a non-co-ethnic could potentially affect the public official's judgment of the costs and benefits of a corrupt transaction (e.g. originating in the perceived likelihood of being reported or in the individual's perceived ability to pay), so could presumably other socio-demographic characteristics of the individual. Moreover, the individual's socio-demographic characteristics presumably also affect to what extent s/he is exposed to situations where corrupt transactions might take place – with respect to the corruption measure in focus, meaning the extent to which s/he applies for 'documents and permits'. Hence, controls for the age, gender, urban/rural residence, level of education, religious affiliation, employment status and economic standing of respondents are included.[7] Considering that the average level of corruption is likely to vary across regions depending on the composition of the population residing there, controls for sub-national regional[8] averages in terms of education, employment, economic standing, rurality (the share of respondents living in rural areas) and religion are also included. Finally, country dummies are included to control for country variation in average corruption levels. For variable descriptions and summary statistics, see Tables A1-A2.

4 Results

This section examines empirically whether individual corruption experiences vary systematically depending on ethnic group affiliations, and the nature of this possible variation. After considering the results of the benchmark estimations, alternative specifications are evaluated.

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[7] Since there may be reverse causality going from the individual's experience with corruption to his/her economic standing and employment status, estimations are run both with and without these controls, exploring the sensitivity of the ethnic affiliation parameters.

[8] The regions refer to the first-order administrative division in a country, in the survey manual denoted 'region/province' (Afrobarometer Network, 2007).

4.1 Main findings

First of all, the empirical findings indeed suggest that individual corruption experiences vary systematically along ethnic lines. Running regressions including the around 330 ethnic group dummies (and control variables), they are clearly jointly important for determining corruption experiences.[9] Performing log likelihood ratio tests where the unrestricted model includes the ethnic group dummies and the restricted model does not, the null-hypothesis that excluding the ethnic group dummies does not affect the explanatory power of the model can be firmly rejected for both corruption outcomes. More interesting for our purposes, however, is that belonging to influential ethnic groups – in terms of relative group size or relative economic and political standing – is seemingly a relevant determinant of individual experiences with corruption.

The first corruption measure considers experience with corruption when applying for documents and permits. Compared with someone belonging to a smaller group, an individual belonging to the largest ethnic group in a country is around 3 percentage points more likely to have experienced corruption when applying for documents and permits in the past year (Table 1). This result remains in the face of both individual and regional controls. Similarly, when considering the group share measure (Table 2, Panel A), individuals belonging to larger ethnic groups to a greater extent tend to have experienced corruption. Hence, there is seemingly not only a threshold effect of belonging to the country's largest group, but also a more general trend suggesting a greater tendency for having experienced corruption in larger ethnic groups. Again, this result remains in the face of both individual and regional controls. If belonging to a larger ethnic group helps proxy for a greater probability of the encountered public official being a co-ethnic, these results thus seem to imply more corruption among co-ethnics.

As discussed in Section 2, however, the fact that the recruitment of public officials may not be neutral and that the largest group in the country need not necessarily be the group that is closest to the ruling elite, we should also consider measures focusing on the groups' relative economic and political standing. As it turns out, though, the results of empirical estimations using these measures have similar implications. In line with the relative group size estimates, they suggest that individuals who belong to an economically better off group or a group

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[9] Not presented, but available upon request. Many ethnic group dummies predict the outcome variable perfectly, meaning that a substantial number of observations have to be dropped from the estimation when these dummies are included.

judged as having more political influence than other groups in their country (Table 2, Panels B-C) are about 2 percentage points more likely to experience corruption. While compared with the group size estimates these parameters are somewhat less precisely estimated, they are positive in all estimations and tend to become more precisely estimated when including regional controls and controls for individual socio-economic standing. Hence, for our first corruption measure, intended to capture corrupt transactions containing an element of collusion, the empirical results as expected seem to suggest more corruption among co-ethnics, i.e. that ethnic ties are used to uphold rather than prevent corrupt relationships.

To investigate whether this result changes when using an indicator capturing corruption that is more clearly extortive, let us consider estimations focusing on whether the respondents have experience of basic water or sanitation services being conditioned upon paying a bribe (see the discussion in Section 3). The results when using this alternative corruption measure (Table 3) suggest no systematic variation in corruption experiences depending on the size of the respondent's ethnic group. Belonging to a group judged as economically better off, on the other hand, is again positively associated with corruption experiences (for groups judged as having more political influence, the positive parameter is not quite statistically significant).[10] Hence, as expected, using an alternative measure intended to capture corruption that is not to the same extent collusive, there is less evidence of more corruption among co-ethnics. If anything, However, the 'influential ethnic group' parameters are still, if anything, positive. Importantly then, whereas the extent to which co-ethnics uphold corrupt relationships seems to vary with the type of corrupt transaction considered, the empirical findings provide no evidence for co-ethnics acting to prevent corrupt transactions.

4.2 Further testing

Our first corruption measure focuses on experiences with corruption when applying for 'documents and permits'. A reasonable worry is that the result that members of larger and more economically/politically influential groups experience more corruption is driven by members of these groups being more economically active and thus more exposed to situations potentially involving corruption. Controls for individual economic standing, employment and education, as well as a number of other socio-demographic variables, are intended to capture variation in the tendency to apply for documents and permits.

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[10] While we control for the economic standing of the individual, it is possible that the bribe-taker's judgement of the individual's capacity to pay is partly based on the individual's ethnic group affiliation.

However, to further explore whether this could be what drives the results, an alternative set of estimations (Table A3) focuses on whether the respondents have in fact applied for a document or permit during the past year. Reassuringly, using a dummy variable indicating whether the respondent never applied for a document or permit as dependent variable, none of the ethnic group parameters come out anywhere near statistically significant.[11] Doing the same for our alternative corruption measure, i.e. considering a dummy variable indicating whether the respondent never attempted to get water and sanitation services in the past year, the findings are again reassuring in that none of the ethnic group parameters are anywhere close to statistically significant (the results are available upon request).

In terms of group size, so far we have considered the respective ethnic groups' relative size within the country. However, it might be that an effect of belonging to a large group operates at a local rather than national level. Hence, in an alternative set of estimations, a dummy indicating whether the respondent belongs to the largest ethnic group in his/her region of residence is used instead (the results are available upon request). While this too comes out positively related to individual corruption experiences as measured by the documents and permits indicator, the marginal effects are not statistically significant at conventional levels (using the alternative water and sanitation corruption measure there is still no effect of belonging to the majority group). However, considering the risk that the survey misrepresents the sub-national spatial distribution of ethnic groups – it is not necessarily representative at the regional level – and the endogeneity concern that arises due to within-country mobility of ethnic group members (see the discussion in Alesina and Zhuravskaya, 2011), these results need to be interpreted with care.

Presumably, the effects of ethnic ties should be more pronounced if people have strong ethnic identities than if they care little about their ethnic backgrounds. However, our main ethnic affiliation variable, indicating whether the respondents belong to their country's largest ethnic group, does not reveal whether people in fact identify in ethnic terms. To explore to what extent the results are affected by the salience of individual ethnic identities, a dummy variable indicating whether the respondent identifies more strongly with their ethnic group

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[11] Moreover, one can note that for several of the socio-demographic controls, the results in this estimation are the mirror image of what can be observed in estimations using corruption experience as dependent variable – that is, variables associated with less corruption are associated with a *greater* probability of never having applied for a document or permit (and vice versa). The ethnic group variables, on the other hand, are significantly related to corruption but not to whether the individual has ever applied for a document or permit, arguably adding support to that we pick up ethnic group variation in corruption rather than in economic activity.

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than with their country is included[12] and interacted with the dummy for belonging to the largest ethnic group (the results are available upon request). While the 'largest ethnic group' and the 'ethnic identity' measures each independently come out positively related to having experienced corruption when applying for documents and permits, the results do not suggest a statistically significant interaction effect between the two,[13] i.e. there is no evidence that the effect of belonging to the largest group varies with the individual's own strength of ethnic identification. With respect to the latter, it is again worth noting that in the context of a corrupt transaction between co-ethnics, even if individuals do not identify themselves in ethnic terms, others may still see them as members of their groups and thus treat them accordingly. And with regard to the independent effect of individual ethnic identity, it is possible that people with strong ethnic identities to a greater extent seek out public officials who are co-ethnics.

For the alternative (water and sanitation) corruption indicator, on the other hand, the results suggest a weakly statistically significant negative interaction effect between belonging to the country's largest ethnic group and having a strong ethnic identity. While we cannot base any strong conclusions on this finding, it is in line with the idea that for extortive corruption, co-ethnics are more likely to prevent corrupt transactions when the respondents have a stronger ethnic identity.

A next step is to explore heterogeneity at the country level. The 17 sample countries are located in Sub-Saharan Africa and have in common that they are relatively young democracies that are usually judged as having comparatively high levels of corruption by international standards. However, it is important to note that they are by no means homogenous, neither with respect to the dependent variable, i.e. the extent to which their citizens experience corruption (see Figures A1-A2), nor as regards the existence, nature and salience of ethnic divisions (see Figures A3-A6). With only 17 countries we are ill-equipped to explore parameter heterogeneity for the main explanatory variables by use of country-level interaction terms. What we can do, however, is consider to what extent the results change when omitting the more extreme cases. Table A4 presents the results of the baseline regression (equivalent to Table 1, estimation 5) run for different sub-samples.

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[12] Based on the question 'Let us suppose that you had to choose between being a [Ghanaian/Kenyan/etc.] and being a [respondent's ethnic group]. Which of the following best expresses your feelings?', with response categories ranging from '1=I feel only (respondent's ethnic group)' to '5=I feel only [Ghanaian/Kenyan/etc.]'.

[13] Moreover, alternative estimations suggest no statistically significant effect of the regional share with ethnic identities, nor an interaction effect between this measure and belonging to the largest ethnic group in the region (as noted, however, this measure is not ideal).

First of all, the size and number of ethnic groups could presumably affect the results. The size of groups should matter for whether they serve as viable bases for political coalition building and is thereby likely to affect the political landscape and the salience attached to group divisions (Posner, 2004). If a country has many ethnic groups and none are large enough to mobilize around politically, the ethnic group divisions need not become politically salient. Moreover, if no group has a clear majority position, this should make the supposed link between belonging to the largest ethnic group and the encountered public official being a co-ethnic less clear. Yet on the other hand, very large groups might be less cohesive than smaller groups; if almost the entire population have the same ethnic background, people may be less inclined to attach importance to ethnic divisions. In Tanzania the largest ethnic group consists of around 18 percent of the population, In Zimbabwe the equivalent figure is 82 percent (Figure A3). It thus seems reasonable to explore this source of heterogeneity.

The baseline regression is first run excluding the five countries whose largest ethnic group is comparatively small (Table A4, Sample 1), and then leaving out the five countries where the population share of the largest group is comparatively great (Table A4, Sample 2). In a similar fashion, the five countries with the highest and lowest number of ethnic groups are excluded (Table A4, Samples 3 and 4, respectively). The positive and statistically significant relationship between belonging to a country's largest ethnic group and having experienced corruption when applying for documents and permits remains in all concerned sub-samples.

Aggregating the ethnic identity measure used above (indicating whether respondents identify more strongly with their ethnic group than with their country), it is possible to explore country variation in the salience of ethnic divisions more directly. Running the baseline regression first excluding the five countries where the smallest share of respondents identify themselves in ethnic terms (Table A4, Sample 5), and second leaving out the five countries where the largest share of respondents do so (Table A4, Sample 6), the main results again stand in both sub-samples. If anything, and somewhat puzzling, the 'largest ethnic group' effect is greater and more precisely estimated when excluding the countries with supposedly stronger ethnic identifications. However, when comparing across countries it is not ideal to use a measure that depends not only on the strength of respondents' ethnic identification but also on their feelings towards their country. Even if citizens in country A identify themselves more strongly in ethnic terms than citizens in country B, the measure could suggest otherwise simply because citizens in country A identify more strongly with their country.

An alternative is to use an indicator measuring the trust people have in members of their own ethnic group relative to members of other ethnic groups in the country.[14] This seems to be a good measure of to what extent transactions between co-ethnics should differ from those among non-co-ethnics. I define a country's 'ethnic trust gap' as the average trust respondents report to have in people from their own group minus the average trust they report to have in people from other groups (for a more elaborate definition, see Figure A5), and then run the baseline regression first excluding the five countries with the smallest trust gap (Table A4, Sample 7) and next leaving out the countries with the largest gap (Table A4, Sample 8). While belonging to a country's largest ethnic group is positively related to experiences with corruption when applying for documents and permits in both sub-samples, as might be expected the effect is larger and more precisely estimated when excluding the countries with smaller ethnic trust gaps.[15]

With respect to the alternative (water and sanitation) corruption measure (Panel B), in sample 3 we can observe a small positive marginal effect of belonging to the country's largest ethnic group. For the remaining seven sub-samples, on the other hand, the results are in line with the full sample estimation, i.e. suggesting no statistically significant effect of belonging to the largest group. Hence, the restricted sample estimations add to the picture that whether co-ethnics uphold corrupt relationships depends on to what extent the corrupt transaction can be framed as mutually beneficial to both parties involved.

5 Conclusions

Sub-Saharan Africa is home to some of the world's most corrupt and ethnically fragmented countries. Whereas a growing literature relates macro variation in corruption to ethnic divisions, existing studies have not examined the possible existence of systematic micro variation in corruption along ethnic lines. Against this background, the present paper investigated whether individual corruption experiences vary systematically depending on ethnic group affiliation and, if so, what the nature of this variation is. More specifically, it considered the effect of belonging to influential ethnic groups – in terms of relative group size

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[14] This variable is based on round 3 of the Afrobarometer rather than round 4, as the rest of the empirical analysis. This leaves us with a sample of 14 instead of 17 countries (Burkina Faso and Liberia are not included in round 3, and the particular set of questions used were not asked in Zimbabwe).

[15] Running estimations for all the different sub-samples in Table A4, but instead of using the 'largest group' measure focusing on whether the individual belongs to an economically better off or politically more influential group (i.e. estimations equivalent to column 5 in Table 3), the results suggest a similar pattern.

or relative economic and political standing – arguing that this should help proxy for a greater probability that the encountered public official is a co-ethnic.

Viewing ethnic groups as institutions for collective action, a shared culture may make co-ethnics more effective than non-co-ethnics in communicating and working together and in establishing cooperative norms. Also, shared membership in a social network may enable co-ethnics to find, and punish, non-cooperators. If co-ethnics have an advantage in terms of collective action, the relevant question with respect to corruption along ethnic lines becomes what constitutes their collective endeavour – upholding corrupt relationships or preventing them? It was argued that the answer to this question should depend on the type of corrupt transaction, and in particular on to what extent it could be perceived – rightly or not – to be mutually beneficial to both parties involved. If the corrupt relationship contains an element of collusion, the enforcement mechanisms within ethnic communities could arguably act to strengthen the corrupt contract. However, if the corrupt transaction is more clearly extortive, this enforcement mechanism could reasonably work in the opposite direction, i.e. to enable anti-bribery agreements and uphold a non-corrupt relationship.

Empirical findings drawing on data for more than 23,000 respondents in 17 African countries indeed suggest that individual corruption experiences vary systematically along ethnic lines. The baseline estimations, focusing on experiences with corruption when applying for documents and permits, suggested that belonging to influential ethnic groups is associated with a greater probability of having experienced corruption. Provided that belonging to a larger and economically/politically stronger group helps proxy for a greater probability of the corrupt public official being a co-ethnic, this should imply more corruption among co-ethnics, supporting the idea that enforcement mechanisms within ethnic groups could act to strengthen corrupt contracts.

Importantly, though, the results depend on the type of corruption considered. In line with the idea that whether co-ethnics uphold or prevent corrupt relationships depends on to what extent the corrupt transaction could be perceived as mutually beneficial to both parties involved, using an alternative corruption measure capturing corruption that is more clearly extortive, there is less evidence of more corruption among co-ethnics. However, whereas the extent to which co-ethnics *uphold* corrupt relationships seems to vary with the type of corrupt transaction considered, the empirical estimations never suggest a negative relationship between 'influential group' affiliation and corruption experience. Hence, the empirical findings provide no evidence for co-ethnics acting to *prevent* corrupt transactions.

In order to be able to effectively tackle corruption we need to understand along which dimensions it varies. In general terms, the empirical findings of this paper highlight the relevance of not only considering systemic differences in corruption levels, but also taking account of within-country variation in individual experiences with corruption. More specifically, they suggest systematic variation in corruption experiences based on ethnic affiliations, and that for corruption containing an element of collusion the ties among co-ethnics could act to uphold corrupt relationships. These relationships could be investigated further with detailed data on ethnic affiliations of both the bribe-giver and the bribe-taker. In the meantime, the results point to the importance of impartiality in the state apparatus, and to the danger of appointing public officials based on ethnic affiliations.

References

Afrobarometer Network (2007) "Round 4 survey manual", Compiled by the Afrobarometer Network February 2007.

Alesina, A, Baqir, R. and W. Easterly (1999) "Public goods and ethnic divisions", *Quarterly Journal of Economics*, vol. 114, pp. 1243-1284.

Alesina, A., Devleeschaauwer, A., Easterly, W., Kurlat, S., & Wacziarg, R. (2003) "Fractionalization", *Journal of Economic Growth*, 8(2), 155-194.

Alesina, A., Michalopoulos, I. S. and E. Papaioannou (2012) "Ethnic inequality", mimeo, march 2012.

Alesina, A. and Zhuravskaya, E. (2011) "Segregation and the quality of government in a cross section of countries", *American Economic Review* 101(5), pp. 1872-1911.

Baldwin, K. and J. D. Huber (2010) "Economic versus Cultural Differences: Forms of Ethnic Diversity and Public Goods Provision", *American Political Science Review*, 104(4), pp. 644-662.

Banerjee A. and R. Pande (2007) "Parochial politics: Ethnic preferences and political corruption", CEPR discussion paper no. 6381.

Bauhr, M. and N. Nasiritousi (2011) "Why pay bribes? Collective action and anticorruption efforts", The Quality of Government Institute, Working paper series 2011:18.

Bardhan, P. (1997) "Corruption and development: A review of issues", *Journal of Economic Literature*, vol. 35 (September), pp. 1320-1346.

Bratton, M., Mattes. R. and E. Gyimah-Boadi (2005) *Public opinion, democracy, and market reform in Africa*, Cambridge: Cambridge University Press.

Brunetti, A. and B. Weder (2003) "A free press is bad news for corruption", *Journal of Public Economics*, 87. pp.1801–1824.

Burgess, R., Jedwab, R., Miguel, E. and A. Morjaria (2009) "Our turn to eat: the political economy of roads in Kenya", mimeo December 2009.

Cheeseman, N. and R. Ford (2007) "Ethnicity as a political cleavage", Afrobarometer working paper no. 83.

Easterly, W. and R. Levine (1997) "Africa's growth tragedy: policies and ethnic divisions", *Quarterly Journal of Economics*, 112(4), pp. 1203-1250.

Eifert, B., Miguel, E. and D. N. Posner (2009) "Political competition and ethnic identification in Africa", *American Journal of Political Science*, 54(2), pp. 494-510.

Erdmann, G. (2007) "The cleavage model, ethnicity and voter alignment in Africa: Conceptual and methodological problems revisited", German Institute of Global and Area Studies (GIGA) working paper no. 63.

Fearon, J. D. (2003) "Ethnic and cultural diversity by country", *Journal of Economic Growth*, vol. 8, pp. 195-222.

Foellmi, R. and M. Oechslin (2007) "Who gains from non-collusive corruption?", *Journal of Development Economics*, vol. 82, pp. 95– 119.

Franck, R. and I. Rainer (2011) "Does the Leader's Ethnicity Matter? Ethnic Favoritism, Education and Health in Sub-Saharan Africa", mimeo January 2011 (forthcoming in *American Political Science Review*).

Glaeser, E. L. and R. E. Saks (2006) "Corruption in America", *Journal of Public Economics*, vol. 90, pp. 1053-1072.

Habyarimana, J., Humphreys, M., Posner, D. N. and J. M. Weinstein (2007) "Why Does Ethnic Diversity Undermine Public Goods Provision?", *American Political Science Review* 101(4), pp. 709-725.

Horowitz, D. L. (1985) *Ethnic groups in conflict*, Berkeley and Los Angeles: Universtiy of Califorina Press.

Kimenyi, M. S. (2006) "Ethnicity, Governance and the Provision of Public Goods", *Journal of African Economies*, vol. 15, AERC supplement 1, pp. 62-99.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A. and R. Vishny (1999) "The quality of government", *Journal of Law, Economics, and Organization*, vol. 15, pp. 222– 279.

Mauro, P. (1995) "Corruption and growth", *Quarterly Journal of Economics*, 110(3), pp. 681-712.

Montalvo, J. G. and M. Reynal-Querol (2005) "Ethnic polarization, potential conflict and civil wars", *The American Economic Review*, 95(3), pp. 796-816.

Olken, B. A. (2006) "Corruption and the costs of redistribution: Micro evidence from Indonesia", *Journal of Public Economics*, vol. 90, pp. 853–870.

Posner, D. (2003) "The Colonial Origins of Ethnic Cleavages: The Case of Linguistic Divisions in Zambia", *Comparative Politics*, 35(2) pp. 127-146.

Posner, D. (2004) "The political salience of cultural difference: Why Chewas and Tumbukas are allies in Zambia and adversaries in Malawi", *American Political Science Review*, 98(4), pp. 529-545.

Rose-Ackerman, S. (1975) "The economics of corruption", *Journal of Public Economics*, vol. 4, pp. 187-203.

Shleifer, A. and R. Vishny (1993) "Corruption", *Quarterly Journal of Economics*, 108(3), pp. 599-617.

Treisman, D. (2000) "The causes of corruption: a cross-national study", *Journal of Public Economics*, 76(3), pp. 399– 457.

Tables

Table 1: Individual corruption experiences: 'Largest group' effect (probit marginal effects)

Dependent variable is *Corruption experience* (dummy)

	(1)	(2)	(3)	(4)	(5)
Largest group	0.028**	0.024*	0.025**	0.025**	0.026**
	(0.014)	(0.013)	(0.012)	(0.012)	(0.011)
Individual controls					
Rural		-0.039***	-0.042***	-0.042***	-0.031***
		(0.010)	(0.010)	(0.010)	(0.009)
Female		-0.067***	-0.065***	-0.064***	-0.064***
		(0.007)	(0.007)	(0.007)	(0.007)
Age		0.005***	0.004**	0.004**	0.004***
		(0.002)	(0.002)	(0.002)	(0.002)
Age squared		-0.000***	-0.000***	-0.000***	-0.000***
		(0.000)	(0.000)	(0.000)	(0.000)
Primary		0.026**	0.032**	0.032**	0.033***
		(0.012)	(0.013)	(0.013)	(0.012)
Secondary		0.059***	0.069***	0.069***	0.071***
		(0.013)	(0.013)	(0.013)	(0.013)
Post-secondary		0.145***	0.169***	0.171***	0.170***
		(0.023)	(0.023)	(0.023)	(0.023)
Part-time			0.028**	0.028**	0.029**
			(0.013)	(0.014)	(0.013)
Full-time			0.010	0.010	0.012
			(0.011)	(0.011)	(0.012)
Poverty index			0.035***	0.035***	0.031***
			(0.004)	(0.004)	(0.004)
Christian				-0.000	-0.004
				(0.015)	(0.014)
Muslim				0.007	0.015
				(0.022)	(0.019)
Regional controls					
Share educated					-0.034
					(0.053)
Av. poverty score					0.052***
					(0.019)
Share employed					-0.040
					(0.059)
Share rural					-0.063**
					(0.030)
Share Christian					0.066
					(0.083)
Share Muslim					0.020
					(0.076)
Country dummies	yes	yes	yes	yes	yes
Observations	17300	17300	17300	17300	17300

Notes: Standard errors (clustered by region) in parentheses; *significant at 10%, **significant at 5%, ***significant at 1%. Observations are weighted using combined within×across country weights. The within-country weights adjust the samples to be nationally representative with respect to gender, region, urban-rural distribution etc. The across-country weights adjust all country samples to the same size (N=1200).

Table 2: Individual corruption experiences: Using alternative ethnic group variables
Dependent variable is *Corruption experience* (dummy). Presenting probit marginal effects

Panel A: Group share effect

	(1)	(2)	(3)	(4)	(5)
Group share	0.069**	0.054*	0.060**	0.060**	0.060**
	(0.033)	(0.030)	(0.029)	(0.029)	(0.027)
Individual controls					
Rural, female, age, education		yes	yes	yes	yes
Employment, poverty			yes	yes	yes
Religion				yes	yes
Regional controls					yes
Country dummies	yes	yes	yes	yes	yes
Observations	17300	17300	17300	17300	17300

Panel B: Belonging to economically better off group

	(1)	(2)	(3)	(4)	(5)
Better ec. group	0.018*	0.015	0.019**	0.019**	0.019**
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
Individual controls					
Rural, female, age, education		yes	yes	yes	yes
Employment, poverty			yes	yes	yes
Religion				yes	yes
Regional controls					yes
Country dummies	yes	yes	yes	yes	yes
Observations	16335	16335	16335	16335	16335

Panel C: Belonging to group with more political influence

	(1)	(2)	(3)	(4)	(5)
More pol. influence	0.020**	0.017*	0.019*	0.019*	0.018*
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Individual controls					
Rural, female, age, education		yes	yes	yes	yes
Employment, poverty			yes	yes	yes
Religion				yes	yes
Regional controls					yes
Country dummies	yes	yes	yes	yes	yes
Observations	16040	16040	16040	16040	16040

Notes: Standard errors (clustered by region) in parentheses; *significant at 10%, **significant at 5%, ***significant at 1%. Observations are weighted using combined within×across country weights. The within-country weights adjust the samples to be nationally representative with respect to gender, region, urban-rural distribution etc. The across-country weights adjust all country samples to the same size (N=1200).

Table 3: Using alternative corruption measure (probit marginal effects)

Dependent variable is *Alternative (water and sanitation) corruption measure* (dummy)

	(1)	(2)	(3)	(4)	(5)
Rural, female, age, educ	yes	yes	yes	yes	
Employment, Ec. standing		yes	yes	yes	
Religion			yes	yes	
Regional controls				yes	
Country dummies	yes	yes	yes	yes	yes
Panel A: 'Largest group' effect					
Largest group	0.003	0.000	0.001	0.001	0.005
	(0.010)	(0.008)	(0.008)	(0.008)	(0.007)
Observations	16604	16604	16604	16604	16604
Panel B: 'Group share' effect					
Group share	0.013	0.003	0.008	0.007	0.015
	(0.023)	(0.021)	(0.020)	(0.020)	(0.020)
Observations	16604	16604	16604	16604	16604
Panel C: 'Better ec. group' effect					
Better ec. group	0.023***	0.020***	0.023***	0.023***	0.023***
	(0.008)	(0.007)	(0.007)	(0.007)	(0.007)
Observations	15687	15687	15687	15687	15687
Panel D: 'More pol. influence' effect					
More pol. influence	0.011	0.009	0.011	0.011	0.012*
	(0.008)	(0.008)	(0.007)	(0.007)	(0.007)
Observations	15386	15386	15386	15386	15386

Notes: Standard errors (clustered by region) in parentheses; *significant at 10%, **significant at 5%, ***significant at 1%. Observations are weighted using combined within×across country weights. The within-country weights adjust the samples to be nationally representative with respect to gender, region, urban-rural distribution etc. The across-country weights adjust all country samples to the same size (N=1200).

Appendix

Table A1: Summary statistics

Variable	Observations	Mean	Std. Dev.	Min	Max
Dependent variables					
Corruption experience	17300	0.202	0.401	0	1
Alternative corruption measure	16604	0.117	0.322	0	1
Ethnic group variables					
Largest group	17300	0.374	0.484	0	1
Group share	17300	0.235	0.240	0.0002	0.819
Better ec. group	16335	0.216	0.412	0	1
More pol. influence	16040	0.230	0.421	0	1
Individual control variables					
Rural	17300	0.610	0.488	0	1
Female	17300	0.488	0.500	0	1
Age	17300	35.533	13.980	18	99
Age squared	17300	1458.048	1219.060	324	9801
Primary	17300	0.352	0.478	0	1
Secondary	17300	0.389	0.487	0	1
Post-secondary	17300	0.120	0.325	0	1
Part-time	17300	0.156	0.363	0	1
Full-time	17300	0.187	0.390	0	1
Poverty index	17300	-0.009	0.999	-1.991	3.829
Christian	17300	0.693	0.461	0	1
Muslim	17300	0.221	0.415	0	1
Regional control variables					
Share educated	17300	0.494	0.234	0.036	1
Av. poverty score	17300	-0.005	0.318	-0.984	1.299
Share employed	17300	0.337	0.171	0.025	0.950
Share rural	17300	0.615	0.291	0	1
Share Christian	17300	0.691	0.305	0	1
Share Muslim	17300	0.223	0.327	0	1

Table A2: Variable descriptions

Dependent variables

Corruption experience: Dummy variable equal to one if, during the past year, the respondent has 'had to pay a bribe, give a gift, or do a favour to government officials in order to get a document or permit' (those with no experience of the activity during the period are left out of the estimation); zero otherwise.

Alternative corruption measure: Dummy variable equal to one if, during the past year, the respondent has 'had to pay a bribe, give a gift, or do a favour to government officials in order to get water or sanitation services' (those with no experience of the activity during the period are left out of the estimation); zero otherwise.

Ethnic group variables

Largest group: Dummy variable equal to one if the respondent belongs to the largest language group in the country sample; zero otherwise. Based on the question 'Which [Ghanaian/Kenyan/etc.] language is your home language? That is, the language of your group of origin'.

Group share: The share of the survey respondents in the country speaking the respondent's language. Based on the question 'Which [Ghanaian/Kenyan/etc.] language is your home language? That is, the language of your group of origin'.

Better ec. group: Dummy variable equal to one if the respondent reports to belong to an ethnic group with better economic conditions than other ethnic groups in the country; zero otherwise.

More pol. influence: Dummy variable equal to one if the respondent reports to belong to an ethnic group with more political influence than other ethnic groups in the country; zero otherwise.

Individual control variables

Female: Dummy variable equal to one if the respondent is female; zero otherwise.

Rural: Dummy variable equal to one if the respondent lives in a rural area; zero otherwise.

Age variables: Age in years and age squared.

Education (based on question about what is the respondent's highest level of education):
Primary: Dummy variable equal to one if the respondent's highest level of education is at primary school level (including those with incomplete primary); zero otherwise. Secondary: Dummy variable equal to one if the respondent's highest level of education is at secondary school level (including those with incomplete secondary); zero otherwise. Post-secondary: Dummy variable equal to one if the respondent's highest level of education is at post-secondary school level (including those with incomplete post-secondary); zero otherwise. Dummy variable equal to one if the respondent has no formal schooling used as reference category in estimations.

Employment: Full-time: dummy variable equal to one if the respondent has full-time paid employment; zero otherwise. Part-time: dummy variable equal to one if the respondent has part-time paid employment, zero otherwise. Dummy for having no employment used as reference category in estimations.

Poverty index: A poverty index with mean zero and standard deviation one within each country, higher values imply that the respondent is poorer. Constructed as the first principal component of the answers to, 'Over the past year, how often, if ever, have you or anyone in your family gone without: (a) enough food to eat, (b) enough clean water for home use, (c) medicines or medical treatment, (d) enough fuel to cook your food?', with response categories ranging from 0 for 'never' to 4 for 'always' for each item.

Religion (based on question 'What is your religion, if any?'): Christian: Dummy variable equal to one if the respondent reports to be Christian; zero otherwise, Muslim: Dummy variable equal to one if the respondent reports to be Muslim; zero otherwise. Having another religious affiliation or not being religious is used as reference category in estimations.

Regional control variables: Sub-national regional (first-order administrative division in each country) averages.

Share educated: Share in region who have some secondary school or more education.

Av. poverty score: Average poverty index score in region.

Share employed: Share in region who have paid employment (full-time or part-time).

Share rural: Share in region who live in rural areas.

Share Christian: Share in region who are Christian.

Share Muslim: Share in region who are Muslim.

Country dummies: Dummies for the 17 countries in the sample.

Table A3: Tendency to apply for documents and permits (probit marginal effects)

Dependent variable is: *Never applied for document or permit* (dummy)

	(1)	(2)	(3)	(4)	(5)
Rural, female, age, educ		yes	yes	yes	yes
Employment, Ec. standing			yes	yes	yes
Religion				yes	yes
Regional controls					yes
Country dummies	yes	yes	yes	yes	yes
Panel A: 'Largest group' effect					
Largest group	-0.000	0.000	0.001	0.000	-0.000
	(0.016)	(0.016)	(0.016)	(0.016)	(0.015)
Observations	23312	22982	22677	22542	22542
Panel B: 'Group share' effect					
Group share	0.006	0.010	0.009	0.009	0.011
	(0.043)	(0.041)	(0.041)	(0.042)	(0.040)
Observations	23312	22982	22677	22542	22542
Panel C: 'Better ec. group' effect					
Better ec. group	-0.004	-0.003	-0.002	-0.002	-0.002
	(0.013)	(0.013)	(0.014)	(0.014)	(0.013)
Observations	22262	21971	21705	21581	21581
Panel D: 'More pol. influence' effect					
More pol. influence	-0.004	-0.003	-0.003	-0.002	-0.003
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)
Observations	21788	21512	21262	21141	21141

Notes: Standard errors (clustered by region) in parentheses; *significant at 10%, **significant at 5%, ***significant at 1%. Observations are weighted using combined within×across country weights. The within-country weights adjust the samples to be nationally representative with respect to gender, region, urban-rural distribution etc. The across-country weights adjust all country samples to the same size (N=1200).

Table A4: Individual corruption experiences in different sub-samples: 'Largest group' effect (probit marginal effects)

Panel A: Dependent variable is *Corruption experience* (dummy)

	(Sample 1)	(Sample 2)	(Sample 3)	(Sample 4)	(Sample 5)	(Sample 6)	(Sample 7)	(Sample 8)
Largest group	0.028**	0.033**	0.044***	0.030**	0.026**	0.043***	0.030**	0.022*
	(0.012)	(0.014)	(0.012)	(0.014)	(0.013)	(0.011)	(0.013)	(0.012)
All individual controls	yes	yes	yes	yes	yes	yes	yes	yes
All regional controls	yes	yes	yes	yes	yes	yes	yes	yes
Country dummies	yes	yes	yes	yes	yes	yes	yes	yes
Observations	11177	13013	10943	12470	12274	11442	13433	11141

Panel B: Dependent variable is *Alternative (water and sanitation) corruption measure* (dummy)

	(Sample 1)	(Sample 2)	(Sample 3)	(Sample 4)	(Sample 5)	(Sample 6)	(Sample 7)	(Sample 8)
Largest group	0.006	0.005	0.016**	-0.000	0.003	0.010	0.001	0.007
	(0.007)	(0.010)	(0.007)	(0.010)	(0.008)	(0.006)	(0.009)	(0.008)
All individual controls	yes	yes	yes	yes	yes	yes	yes	yes
All regional controls	yes	yes	yes	yes	yes	yes	yes	yes
Country dummies	yes	yes	yes	yes	yes	yes	yes	yes
Observations	10677	12577	10408	12044	11750	11010	13010	10670

Notes: Standard errors (clustered by region) in parentheses; *significant at 10%, **significant at 5%, ***significant at 1%. Observations are weighted using combined within×across country weights. The within-country weights adjust the samples to be nationally representative with respect to gender, region, urban-rural distribution etc. The across-country weights adjust all country samples to the same size (N=1200).
Sample 1 excludes the five countries whose largest ethnic group is comparatively small (Tanzania, Kenya, Uganda, Liberia, South Africa);
Sample 2 excludes the five countries whose largest ethnic group is comparatively large (Zimbabwe, Botswana, Senegal, Burkina Faso, Namibia);
Sample 3 excludes the five countries with the highest number of ethnic groups (Ghana, Uganda, Zambia, Nigeria, Tanzania);
Sample 4 excludes the five countries with the lowest number of ethnic groups (Zimbabwe, Botswana, Senegal, South Africa, Benin);
Sample 5 excludes the five countries where the smallest share of respondents identifies in ethnic terms (Tanzania, Liberia, Ghana, South Africa, Kenya);
Sample 6 excludes the five countries where the largest share of respondents identifies in ethnic terms (Burkina Faso, Benin, Mali, Uganda, Nigeria);
Sample 7 excludes the five countries with the smallest ethnic trust gap (Namibia, Botswana, Senegal, Benin, Tanzania);
Sample 8 excludes the five countries with the largest ethnic trust gap (Mali, Malawi, Uganda, Kenya, South Africa);

Figure A1: Country shares with document/permit corruption experience in the past year (dummy = 1)
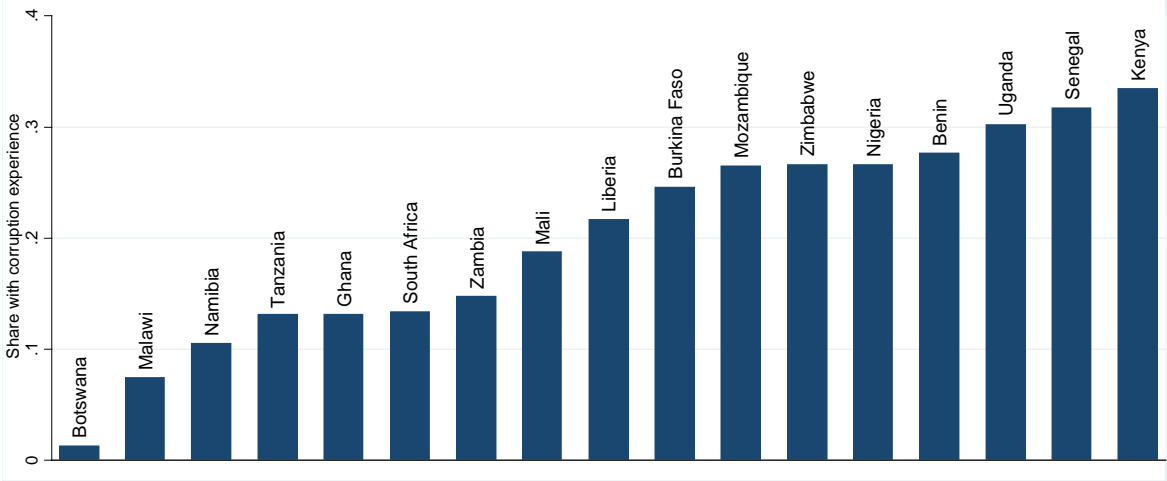

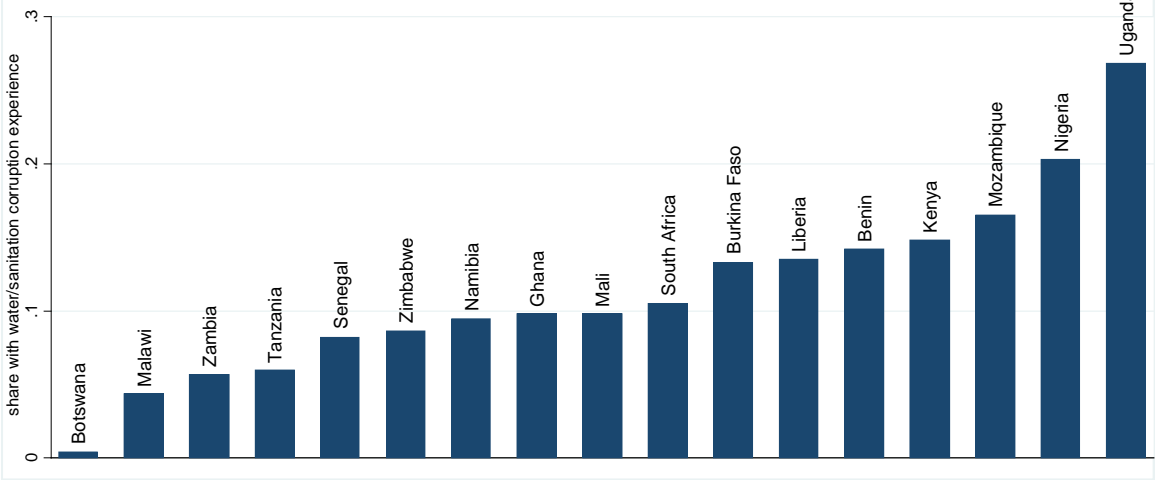Figure A2: Country shares with water/sanitation corruption experience in the past year (dummy = 1)

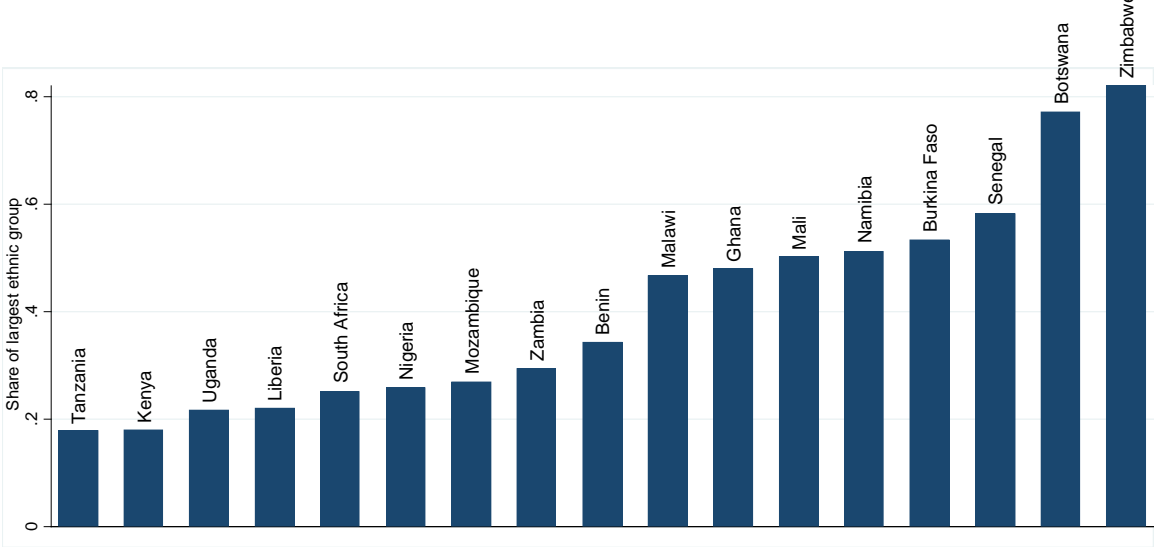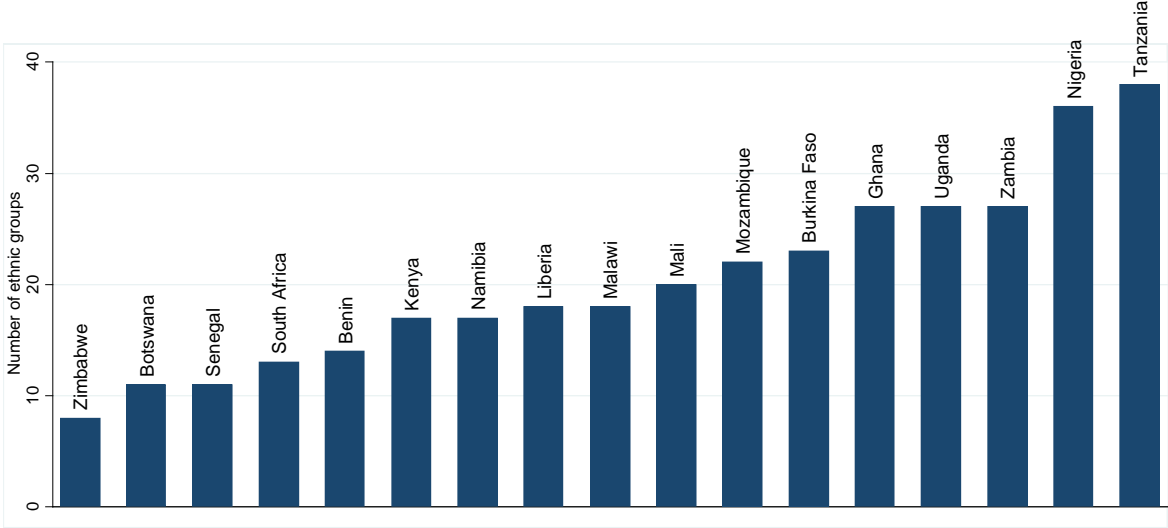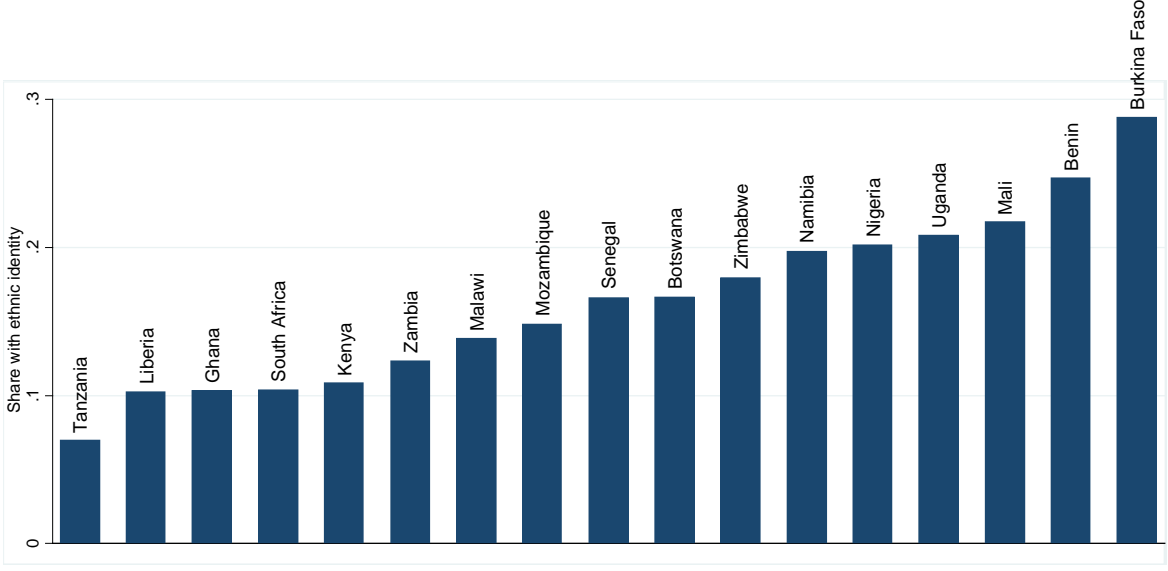Figure A3: Share of largest ethnic group, by country

Figure A4: Number of ethnic groups[1] by country

[1]Based on the question 'Which [Ghanaian/Kenyan/etc.] language is your home language? That is, the language of your group of origin'

Figure A5: Share with strong ethnic identities[1] by country

[1]Those who report to identify more with their ethnic group than with their country

Figure A6: Ethnic trust gap[1] (trust in members of own group – trust in members of other groups), by country
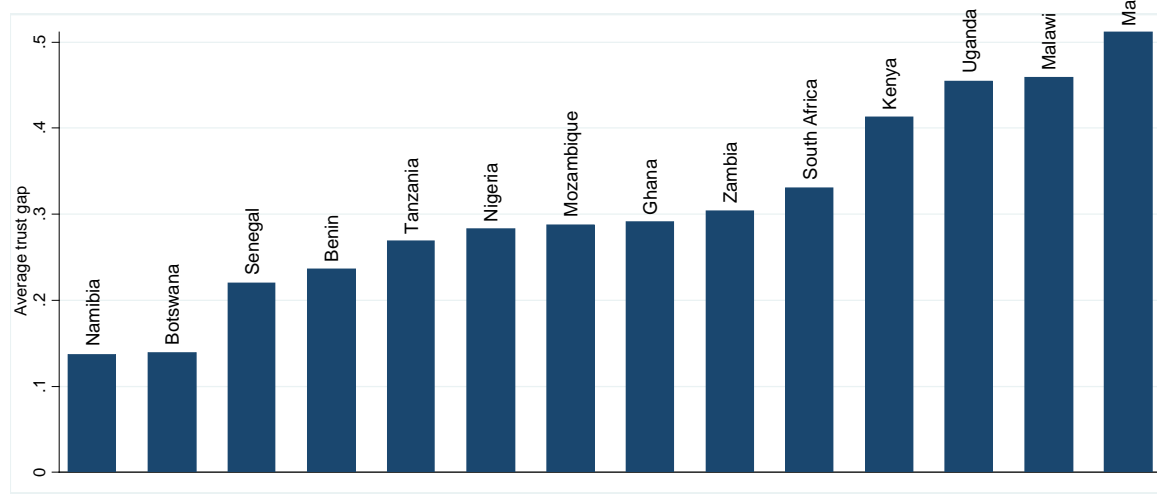
[1]Based on the question 'How much do you trust each of the following types of people: a) People from your own ethnic group? b) People from other ethnic groups?' (response categories: 0=Not at all, 1=Just a little, 2=Somewhat, 3=A lot) from the Afrobarometer round 3. The trust gap is defined as the average trust in people from own group – the average trust in people from other groups. The question was not asked in Zimbabwe, and Burkina Faso and Liberia are not included in the Afrobarometer round 3.