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► **To cite this version:**

Cecilia Strand, Mathias Hatakka. Mobile Phones as a Citizen-Controlled Anti-corruption Tool in East Africa - A Literature Review. 14th International Conference on Social Implications of Computers in Developing Countries (ICT4D), May 2017, Yogyakarta, Indonesia. pp.753-764, 10.1007/978-3-319-59111-7\_61 . hal-01650050

**HAL Id: hal-01650050**

**<https://inria.hal.science/hal-01650050>**

Submitted on 28 Nov 2017

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# Mobile phones as a citizen-controlled anti-corruption tool in East Africa - a Literature Review

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**Abstract.** Despite agreement amongst donors, business and political leaders concerning the negative effects of corruption, levels have not fallen in East Africa. The continued high levels of corruption, reassert the need for a better understanding if mobile phones, if prolific enough, can be an effective tool against corruption. Through a literature review of ten years M4D and ICT4D research on mobiles as a citizens-controlled tool for a) accessing government information either directly or through citizens' crowd-sourcing of information and b) mobilization to demand greater government transparency, as well as, c) instantaneous reporting of corruption in East Africa; this study attempts to gauge the status of this research field. The review included the ten highest ranking open access ICT4D journals, and six journals from parent disciplines; information system and development studies, as well as conference proceedings from the M4D conferences, and the SIG Globdev Workshops. The review concludes that earlier optimism around mobiles' potential to support citizens' counter-corruption actions, has not resulted in a significant body of research. Nor does the literature provide any substantive clues as to why this urgent topic has not been explored more fully.

**Keywords:** Mobiles, Corruption, Transparency, Accountability, East Africa.

## 1 Introduction

Corruption levels in East Africa, with the notable exception of Rwanda have not fallen despite significant donor attention, negative business community reviews, and repeated commitments across the political spectrum to forcefully address corruption [1]. Corruption can take on different forms, such as bribe-soliciting, where public officials demand payment in return for administrative advantages, or introducing unofficial fees for basic services that should be free [2]. It can take on more hidden forms, such as when officials skim a portion of development assistance or government funding. Corruption also exist in the shape of nepotism, i.e., favors to ethnic or clan co-patriots. Regardless of form, corruption threatens the very core of societies as it erodes citizens' trust in institutions and willingness to contribute to them, as well as defend the same institutions. Furthermore, corruption does not affect all citizens equally. The poorest

citizens, who cannot afford alternative service providers, and thus are the most dependent on basic services, are also the most likely to pay a bribe [3]. In a region with many of the Millennium Development Goals still unmet [4], and half of the population living below the poverty line, corruption thus hits hard.

Across the region, citizens convey frustrations with high and even increasing levels of corruption [5]. The 2015 East Africa Bribery Index analysis, covering five sectors (police, judiciary, registry and licensing services as well as tax services), from 2010 to 2014, found that the core institutions meant to uphold the rule of law (the police and court system) sadly were the most bribe prone institution across the region [5]. The 2015 East Africa Bribery Index, mirror outcomes from other surveys, such as the World Bank's Ease of Doing Business, the Mo Ibrahim Index on Africa Governance, and the Transparency International's Africa report [5].

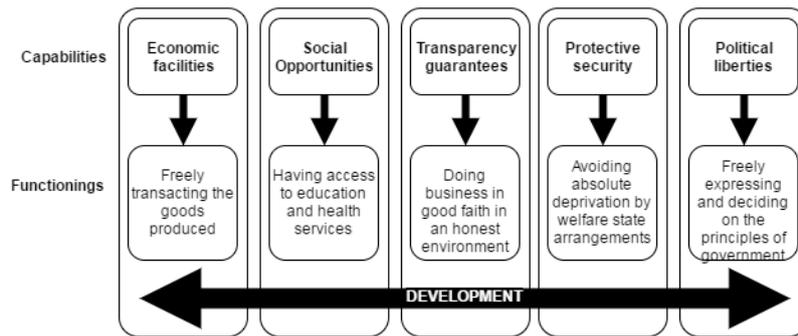
All countries in the region are signatories to international and regional instruments to combat corruption such as UN Convention against Corruption and the African Union Convention on Preventing and Combatting Corruption. The 2015 East Africa Bribery Index report concluded that the existence of a legal framework and emergence of rudimentary anti-corruption institutions appear to have had little impact on corruption levels. This failure to deliver on past pledges to stamp out corruption and proceed with institutional reforms related to anti-corruption, with the exception of Rwanda, indicates a lack of genuine political will. Failures to deliver on past commitments and implement policies has also resulted in citizens losing faith in governments' interests in addressing corruption [5-6].

The continued high levels of corruption across the region and government failures to respond, renews the need for a better understanding of mobiles as a citizen-controlled tool to push Governments to address corruption. In short, can mobile phones, or under what specific conditions, can they be an effective citizen-controlled anti-corruption tool? Through a literature review of the past ten years (2006-2016) of ICT4D and M4D research on mobiles as a citizen-controlled tool against corruption in East African; i.e. Burundi, Kenya, Rwanda, Tanzania, and Uganda; this study attempts to gauge the status of this research field. Furthermore, as corruption hits the poor the hardest, this study focuses on corruption in basic services, as opposed to corruption in connection with skimming in development assistance programs, or bribes in connection with international or domestic tender processes and business transactions.

## **2 Corruption erodes capabilities and functionings**

Curbing corruption is pivotal to development. Our theoretical understanding of development is rooted in the concept 'development as freedom' by Amartya Sen [7]. Sen argues that development entails individuals' having the freedom to choose the life that they have a reason to value [7]. This can either be achieved by making new freedoms available or by removing 'unfreedoms'. The main concepts in the approach is capabilities and functionings. Functionings are the doings and beings of individuals and the realized achievements of individuals' choices. Capabilities are a set of potential functionings that individuals can choose from and hence, represent the extent of individual's

freedoms [8]. Sen lists five interlinked and interdependent instrumental freedoms that help advance the general capabilities of an individual: i) political freedoms, ii) economic facilities, iii) social opportunities, iv) transparency guarantees, and v) protective security [7]. In relating the five instrumental freedoms to the concept of capabilities, functionings and development, Andrade and Urquhart [9] developed the framework presented in fig. 1 below.



**Fig. 1.** The complementary nature of capabilities and functionings to attain development [9, p.284].

*Economic facilities* which is the opportunity for individuals to freely sell the goods and/or services they produce. Taking part in economic activities is essential to enjoying a sustainable livelihood. Corruption create ‘unfreedoms’ in that the commercial activity becomes limited by the need to pay bribes to get access to the market, to get permits to conduct trade and so on. Market access and economic success, in the sense that seller makes a profit, is no longer correlated to quality and price factors.

*Social opportunities* can be effected by corruption in that individuals are excluded from public goods and welfare systems based on unjust premises. Services that should be available to all individuals can be ‘hidden’ behind illegal fee- systems. For example, fees will improve access and priority to health care, education opportunities, faster transaction times for services such as to get a permit.

*Transparency guarantees* are the most apparent example where corruption effects individuals. According to Andrade and Urquhart [9] transparency guarantees means that individuals can do business in good faith and in an honest environment, and “making transactions visible and represent a safeguard against corrupt practices and dishonest behavior, generally of government officials” (p.285). Corrupt systems thus create ‘unfreedoms’ and inequalities if the business environments and arrangements depend on social relations and bribes.

The *protective security* is individuals’ ability to avoid destitution by relying on arrangements made by the welfare state. This relates to the “state to look after their citizens when they face ominous situations as a consequence of, say, unemployment or natural disasters” [9, p.285]. Corruption in relation to protective securities results in relief funds not reaching the poor and marginalized, or that they have to pay for aid that

they are entitled to. Unreliable safety nets typically results in parallel kin-based systems that requires constant resource input.

*Political liberties* relate to individuals' ability to enjoy freedom of speech and assembly as well as partake in governance process by participating in various decision making processes or by periodical voting. Nepotism and cronyism, erodes government's institutions' ability to be responsive to all its citizens, and political liberties may become empty concepts.

As these instrumental freedoms are both interlinked and interdependent, government needs to deliver in all sectors to enhance citizen's capabilities. With a responsive government with a clear understanding of its status as an agent to the principle agent- the citizenry- citizens only intermittently evaluate government performance through elections. The next two sections explore how mobiles can assist citizens in performing oversight and both detect corruption and its threat to instrumental freedoms, as well as enhance citizens' ability to demand better performance and hold their government accountable.

### **2.1 A citizen-controlled (anti-corruption) tool in each pocket**

As a result of governments' policies and active strategies of offering mobile network licenses to the highest-bidding private investors to establish a backbone infrastructure, East Africa has seen impressive growth in mobile phone access since 2000 and access rates range from 46% in Burundi to 80% in Kenya [10]. Even if the mobile phone market is controlled by commercial entities and operated on commercial grounds, relatively cheap smart phones have allowed for lower income groups to own mobile phones [11]. So despite access remaining unequally distributed for the foreseeable future, the proliferation of mobile technology even in lower income brackets shows the importance placed on mobile phone access and usage across income groups [11]. From an anti-corruption perspective, access rates indicate that also the citizens most adversely affected by corruption in East Africa, are increasing connected. In short, they have access to a tool that at least, in theory, could facilitate access to government information either from government directly or through citizens' crowd-sourcing of available information and opportunities to protest and report poor service delivery.

### **2.2 Enlisting mobiles in the expansion of freedoms**

The importance placed on transparency as a tool for improved accountability in development efforts, was clearly articulated through the 2008 launch of the International Aid Transparency Initiative, an online open access platform created by bilateral and multi-lateral development partners to ensure greater transparency around fiscal flows and supply development partners with the necessary information to hold governments and implementers accountable [12]. Access to government information was seen as a key component in improving receiving partners and ordinary citizens' ability to hold their government accountable.

Similarly, it was suggested that mobiles could play a key role. A Swedish Development Agency report argue that there “is big potential in using mobile phones for increased participation, holding governments’ accountable and promoting transparency” [13, p.53]. U4/Transparency International echoed similar sentiments, “Mobile technologies offer remarkable opportunities for promoting good governance, increasing accountability and fighting corruption allow rapid data collection and access to information and offer innovative avenues for social mobilisation and participation” [14, p.1]. World Bank together with African Development Bank [15], highlight the many and diverse expectations placed on emerging platforms and applications, when they call on African governments to take advantage of “the power of social media and exploit it to their advantage, in particular to reinforce democratic processes, drive efficiency, foster innovation, empower public sector workers and expose corruption.” [15, p.17].

The basic rationale behind the techno-optimist was that mobiles would facilitate information flows and thus equip citizens with new opportunities to recognize corruption and mobilize around corruption, as well as provide opportunities to at a minimal cost instantaneously report absences of services or if the public officials requested an unlawful fee. The development industry’s rhetoric resulted in significant investments into citizens’ reporting through various free hotlines and text-based reporting platforms, such as World Bank’s Integrity App [16], Ureport in Uganda, and Kenyan website “I paid a bribe”, to mention a few [1].

Research on mobiles as a tool against corruption includes similar propositions arguing that one of mobiles’ key contribution is its power to increase access and decentralizes information and thereby diminish the opportunities for public servants to engage in corruption secretly. With improved transparency citizens simply knows what type of services they are entitled to and to what cost. Increased transparency is seen as an effective anti-dote to corruption as it addresses the traditional information asymmetry between government and the citizenry [17-18]. Mobiles can directly challenge government’s traditional information monopoly and “corruption prefers the shadows and abhors transparency” [19, p.337]. Gaskin [20] argues that access to Internet significantly impact corruption through increased transparency, but that the diffusion of mobiles have a, although statistically significant, weaker impact on transparency. Although mobiles have a weaker impact on transparency, the study found a connection between diffusion of mobiles and a reduction in corruption. Zanello and Maassen [21] argues that although ICTs have not yet reached its full potential in East Africa, based on the predicted growth of mobile phone access, information is more readily available than ever before to those who want it, and thus provide new opportunities for demanding accountability.

Mobiles as an anti-corruption tool, have also been connected to its ability to facilitate citizens taking action once they discovered corruption by providing new opportunities to report it. Bailard’s [19] suggests a direct and significant correlation between higher mobile phone penetration and lower levels of corruption in Africa. The study showed, by examining 46 African countries, from 1999 to 2006, that there is validity to the claim that mobile phones have reduced corruption levels in Africa, or at least the perception of corruption. Bailard argues that corrupt officials weigh the benefits of the corrupt act against the potential cost, such as being detected and reported. Before the diffusion of

mobile phones, there were very few tools in the hands of ordinary citizens that would allow them to report corruption anonymously and bring the information outside their community.

Improved opportunities to report corruption does however not automatically compel citizens to take action. A report from iHub [22] states that even if mobile applications may lessen the fear of reporting corruption, such citizen action is significantly hampered by governments' unresponsiveness and unwillingness to investigate and punish corrupt public servants. Transparency International [1] similarly finds that although almost a third of the respondents (28 %) across East Africa, identified reporting corruption as the most effective action to take to tackle corruption, only 12 per cent admitted having reported paying a bribe. Fear of the consequences, such as self-incrimination and that lack of visible outcome, i.e. government reaction and punishment of the culprit, made reporting less likely, even if modes of reporting was known and easy.

In summary, we argue that corruption creates unfreedoms for individuals in relation to all five instrumental freedoms and that mobiles *could* function as a tool to remove unfreedoms. We understand the causalities around mobile phones as a viable tool against corruption, as centered on their ability to a) facilitate citizens' access to government-related information, either by direct access or through citizen horizontal crowd-sourcing information, b) mobilize around poor service delivery once it has been recognized, and c) facilitate reporting corruption if it occurs and thus function as a technology for accountability. Mobiles also function as a deterrent for corruption as it increases the risk of detection.

With this basic conceptual framework in place, the next question is; how has the ICT4D and M4D research field, explored and expanded the understanding of mobile phones as an effective anti-corruption tool?

### 3 Methodology

The objective with a literature review is to synthesize prior research and support the advancing of knowledge in a particular research domain [23]. This paper utilizes the leading journals-procedure and departs from Heek's [24] ranking of open source ICT4D journals. The list was slightly adjusted to better fit the geographical focus of this study and subsequently one journal covering Asia was replaced by the next journal on the list. The final list comprised ten journals (Table 1).

By applying the Boolean search phrase: corrupt\* OR bribe AND Mobile\* OR Cell phone\* OR ICT AND Africa, each ICT4D journal were scanned for articles that contained items on mobiles as a tool for anti-corruption between 1st January 2006 to 30th June 2016, in Sub-Saharan Africa. After a manually scanning of 71 articles, none were found meet our inclusion criteria, i.e. mobile phones as a tool for anti-corruption in East Africa (preferably) or sub-Saharan Africa. A schematic analysis of the disqualified articles showed that most articles contained references to corruption as a general development challenge, but failed to connect it to mobile phone access, usages and practices in the focused region. As the initial literature review did not generate enough research

articles, the scope of literature was expanded to cover journals which are ICT4D’s “parent disciplines,” namely Development and Information Systems [24]. By using the SCImago ranking, the three top ranked development journals and information system journals covering international social science aspects of IS were added to the literature review (Tables 2 and 3). The same Boolean search was applied. Most articles in this second sample in the parent disciplines were multi-country studies, in particular in the parent discipline Development. However, several articles in Development journals turned out to be ineligible as they focused on mobile as mobility of people, goods and services, as opposed to the intended reference to mobile phones.

Finally, to further expand the scope of the review, two peer-reviewed conference proceedings were included in the review: The M4D Conferences and the annual SIG Globdev Workshops. Both conferences, was instituted in 2008 and were thus able to provide a sufficient historical record of ICT4D and M4D research.

## 4 Results

Despite including ten years of research on mobile phones and corruption in the ten highest ranking open access ICT4D journals (Table 1) and expanding the review to include six journals from parent disciplines; development and information systems (Table 2 and 3), result in terms of number of articles remained very small.

**Table 1.** Heeks ranking of ICT4D journals

Name of journal	Boolean search	*Papers
Information Technologies and International Development	16	0
Electronic Journal of Information Systems in Developing Countries	0	0
Information Technology for Development	33	0
African Journal of Information and Communication	n/a	0
Int. Journal of Education and Development Using Information and Communication Technology	10	0
Journal of Health Informatics in Developing Countries	0	0
Information Development	5	0
International Journal on Advances in ICT for Emerging Regions	1	0
African Journal of Information & Communication Technology	1	0
South African Journal of Information Management	5	0

\*Papers fulfilling search criteria of addressing mobiles and anti-corruption in Sub-Saharan Africa

**Table 2.** Parent discipline: Information systems

Journal name	Boolean search	Papers
MIS Quarterly	4	0
Information Systems Research	0	0
Journal of Service Research	1	Sub-Saharan Africa: [26]

**Table 3.** ICT parent discipline: Development

Journals	Boolean search	Papers
Journal of Development Economics	6/3	0
World Development	57/44	Multi-country study: [25]
Economic Development and Cultural Change	4/0	0

As indicated by the number of hits based on Boolean search in table 1, 2 and 3; corruption is frequently featured. But corruption is not related to mobiles or the ICT initiative that was many articles' main focus, but rather appears as a judiciously covered background factor. Furthermore, a third of the articles from the ICT4D journal sample make general statement around unspecified ICTs' potential to combat corruption by increasing citizens' access to information. But these statements are not elaborated on in the sense that the features of platform or service are divulged, or how information would support citizens' anti-corruption actions. None of the articles engage with the opportunities connected with the last five years rapid diffusion of mobiles or its potential as a citizen- controlled tool along previously explored causalities. The review of the ICT4D sample thus indicates that the topic is neglected, at least within the core ICT4D journals.

Surprisingly, it was the parent disciplines' six journals that generated some input with two articles (article in last column Tables 2 and 3). Even if the number is small, and unable to provide a substantively deeper understanding of mobile phones as a citizen- controlled anti-corruption tool; the two articles highlight a common theme, namely transparency as an anti-dote to corruption. Asongu and Nwachukwuy [25] argued that after analyzing 49 Sub-Saharan nations using World Bank data, that mobile phone penetration has a positive effect on good governance and that mobile phones help reduce information asymmetry and monopoly which traditionally provide elite actors with conducive conditions for bribe-soliciting and minimal risk of detection of mismanagement of public funds. In short, mobile phones removed important conditions for corruption: namely, secrecy and low risk of detection. Martin and Hill [26] echoing the issue of transparency in their study of the relationship between saving and well-being at the base of the pyramid, i.e., the 3 billion people who live on less than US\$2.50 per day. They argue that digital financial services, often in the shape of m-banking for the poor, made financial flows visible and traceable and thus should result in "safer and speedier transactions and less corruption and theft" [26, p.415]. Both studies thus appeared to argue that mobiles address information asymmetries and secrecy, which are key conditions for corruption.

Although the body of research did more than double with the inclusion of conference proceedings the academic output remained at low levels (Table 4 and 5). Furthermore, The M4D Conference included one of the earliest contributions to the field [27]. The piece argues, "there is great potential for the use of mobile technology to deliver social protection, but that active partnerships between governments and private sector partners will be required" p.1). In techno-optimistic manner it fails to analytically engage with exactly how mobiles can address the leakages' and corruption connected with middlemen administrating 'cash in transit' in Lesotho.

**Table 4.** M4D Conferences: 2008, 2010, 2012, 2014 and 2016

Year	No. of conf. entries	Boolean search	Papers
2008	17	1	Sub-Saharan Africa: [27]
2010	21	0	0
2012	62	2	Sub-Saharan Africa: [28] Multi-country study: [29]
2014	28	0	0
2016	19	1	0

Thinyane and Coulson’s [28] article describes how MobiSAM polling stations were intended to support citizens’ involvement in municipality affairs and facilitate social auditing of service delivery, as well as encourage whistle-blowing and reporting of corruption. They however concluded that without political leadership at the municipal level and political will to genuinely include and engage with citizens; ICT4D and M4D interventions have little chance to deliver. The MobiSAM project was substantially revised due to structural and contextual constraints. Talukdar [29] raise similar hopes when arguing that mobiles, “can directly fight corruption through ensuring increased civic participation and promoting systematic transparency in governance and development process, and holding governments increasingly accountable” (p.250). Talukdar thus appears to suggest that mobile phones could have a key role to play in supporting civic education to build better corruption awareness and civic overseeing systems.

**Table 5.** SIG Globdev Workshop: 2008- 2015

Year	No. of conf. entries	Boolean search	Papers:
2008	23	0	0
2009	19	0	0
2010	18	0	0
2011	21	1	Sub-Saharan Africa: [30]
2012	18	0	0
2013	22	1	Sub-Saharan Africa: [31]
2014	8	0	0
2015	13	0	0

The early years of SIG Globdev output wrongly gives the impression that the area of ICT and corruption is entirely missing. Although none of the WS papers 2008-2010 engage with the topic of mobiles as an anti-corruption tool in Sub-Saharan Africa; corruption itself is mentioned as a crippling barrier to development of ICT4D related interventions. Twinomurinzi and Ghartey-Tagoe [30] explores citizens from 11 sub-Saharan countries perception of their role and ability to fight against corruption. The study finds that although citizens recognize a duty to act, citizens are concerned about their personal security and question their ability to successfully challenge the powerful groups that control government. The article thus highlights an important caveat. Understanding the user’s faith in the technology’s ability to function as a power leverage against political and bureaucratic corruption is essential.

In 2013, A submission on the MobiSAM project [28] appears as a slightly reworked article. MobiSAM mobile platforms were planned to support citizens' oversight, which would lead to improved accountability of municipal employees as well as providing evidence that could be used for corrective action [31]. The project failed as local municipal employees had little interests in supporting the development of a system that ultimately removed their discretionary powers in local affairs. The article thus highlights the formidable resistance vested interest will produce when their interests are being challenged.

## 5 Discussion

Following our argument that corruption creates unfreedoms for individuals, and that mobile phones can be used to combat corruption; empirical evidence is essential to move our assumptions from the realm of what is theoretical possible to what can be verified. Sadly, our review of mobiles as a citizen-controlled tool for fighting corruption in East Africa, did not provide us with enough research to systematically verify or discard earlier claims or hopes connected with mobiles. The "result" is thus; not much is known about the real effects of mobile phones on corruption in the region.

Consequently, it could be argued that the lack of research is indicative of mobiles inability to deliver in this field. We, however argue that it is still too early to conclusively write off mobiles as an anti-corruption tool. The functions provided by a mobile phone can undoubtable be used for anti-corruption, but are not used for those purposes at any significant scale. Following Sen's reasoning that individuals are active agents of change [7], we suggest greater attention should be directed towards understanding users' interpretation of mobiles in relation to their contexts. All action for change, including using a phone for anti-corruption purposes takes place in a context which contains both constraints and opportunities defined by the existing institutional arrangements and distribution of political power. Individual and collective agency are thus confined the 'political opportunity structures' [32]. According to Kitschelt [32] social actors need to discern an opportunity to mobilize for social change. A crucial dimension of political opportunity structures are thus the perceived openness or closeness of state institutions to inputs from other actors, as well as the institutional capacity to advance change. Approaching mobiles' from this perspective would move us away from technical solutions and mobiles' technical potential, which undoubtedly are plentiful, into the situated user-perceived potentials. Some studies, highlight this dimension in particular, i.e., mobile's ability to counter corruption is intimately intertwined and dependent on the degree of government responsiveness and political will address corruption [1, 22, 31].

More research is needed to explore citizens' evaluative mapping and interpretations of their agency in relations to the perceived opportunities to understand under which contextual conditions a mobile with its portability, simplicity, and affordability is transformed into a viable tool to fight corruption. A mobile phone, just like a Swiss army knife can theoretically be used for many different things, but it may also never be used for any of these. This study reminds us all of the dangers in prematurely assuming that a technological potential in itself will produce a particular behavior.

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