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Assessing the Potential of ICTs for Participatory Development in Sub-Saharan Africa with Evidence from Urban Togo

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Abstract As mobile phones are rapidly spreading across Sub-Saharan Africa, scholars and development practitioners are becoming increasingly interested in participatory, information and communication technology (ICT)-enabled initiatives to address the challenges of governance in the region. For such efforts to succeed, ICT interventions need to be custom-tailored to the characteristics of the politically marginalised groups they seek to empower. To advance the generation of the necessary empirical data, we surveyed 1498 respondents in Togo. Findings suggest that sociodemographic factors limiting political participation partially overlap with factors that limit access to ICT and the development of digital skills. Based on these findings, we formulate policy recommendations for the design of ICT-enabled projects that proactively seek to increase the participation of marginalised groups.

Keywords Communication for development · ICT diffusion · Political participation · Sub-Saharan Africa

Information and communication technologies (ICTs), particularly mobile phones, have revolutionised the communication sector in Africa. At the beginning of the millennium, there were less than ten million landline phones across the continent. With an average penetration rate of just over 1 %, phones were exclusive to offices and the richest households (World Bank, 2012). With the rapid expansion of mobile phones through generally less extensive infrastructure

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requirements, conditions changed dramatically. By 2012, in several sub-Saharan African, more people had access to a mobile phone than electricity (ITU, 2015; World Bank, 2015), and at the beginning of 2015, there were 910 million mobile subscriptions in Africa (Ericsson, 2015). Although Africa's individual subscriber-based (either through personal computers or mobile devices) internet penetration rate of 21 % still lags considerably behind rates in Europe (78 %) and elsewhere (ITU, 2015), it is estimated that by 2019, between 50 and 75% of mobile phones in Africa will be smartphones with internet access (The Broadband Commission, 2013; Ericsson, 2015; GSMA 2015).

Since the ability to access the internet with the help of mobile phones extends the benefits of the internet to people who do not have access to desktop computers and fixed line internet connections, it has important implications for the organisation of collective action and the production and sharing of political knowledge. Mobile phone users are not constrained by physical location and become thus able to search for information about social and political issues wherever and whenever they wish to. They are also enabled to upload and share politically and societally relevant content almost instantaneously, thus allowing others to discuss events in real time as they unfold, provided those skill sets are likewise developed across users (Horner, 2011; The Broadband Commission, 2013).

In recent years, several remarkable crowd sourcing projects that draw on the social power of groups that are now at least potentially connected have originated from Africa. Certainly the best-known example is Ushahidi, an open source project that enables local observers to submit reports using their mobile phones or the internet, while simultaneously creating a temporal and geospatial archive of events. Originally developed for mapping reports of post-electoral violence in the aftermath of Kenya's disputed 2007 presidential election, Ushahidi has since been deployed in more than 100 countries and 10,000 projects, including for example the coordination of humanitarian crisis relief following the earthquakes in Haiti (2008) and Chile (2010), election monitoring in Burundi (2010 and 2015) and mapping pharmacy stock outs in several East African countries. Another example is the Map Kibera project. Kibera, Nairobi's largest slum, was designated as 'wooded area' on official maps until 2009, when young Kiberans decided to create a free and open digital map of their community. Using OpenStreetMap, an open source mapping software, volunteers plot locations and roads in their neighbourhood. Using QGIS, an open source geospatial information system, volunteers then analyse and supplement this information to produce specialty maps on services available to residents of the area.

In the light of such examples, ICT-based crowd sourcing is increasingly discussed as a potential approach to address the dynamic challenges of governance faced by many of the sub-Saharan region's fragile states. Scholars and development practitioners argue that ICT-enabled collective action could constitute a new, participatory and decentralised modality of governance particularly in areas where the state's capacity to govern is weak (Livingston and Walter-Drop 2012; Snow Bailard, 2009; World Bank, 2015).

This idea aligns neatly with the growing popularity of participatory development (PD) approaches in international development cooperation which aim at empowering local populations through more inclusive decision making. Over the past decade, PD approaches have gained considerable importance as instruments of channelling development assistance. The World Bank's lending for such projects has risen from $2 billion in 2003 (Mansuri and Rao, 2004) to $30 billion in 2012 (Wong, 2012). In 2012, the World Bank supported approximately 400 PD projects in 94 countries and the largest number of these projects was located in Africa (Wong, 2012). This trend has largely been motivated by the

recognition of decentralisation and democratic local governance as key to sustainable development. Particularly for Africa, PD is seen as an opportunity to achieve a shift from unjustified centralisation towards the devolution of authority and resources to lower levels of government (Nganje, 2013; Crawford, and Hartmann, 2008).

The concept of strengthening institutions through more inclusive decision making processes that seek to engage and empower local populations lies at the heart of PD interventions (NECA 1990). However, several critics have noted that empirical evidence of a sustained positive impact of PD interventions on inclusion considerably lags behind the rate at which such projects are implemented (Mansuri and Rao, 2004; Oakley and Clegg, 1998). In her review of 17 World Bank PD programmes, Wong (2012) found that these programmes frequently fail to effectively target marginalised groups and increase social inclusion. A meta-analysis of almost 500 studies on participatory development projects by Mansuri and Rao (2013) comes to similar findings, where the authors indicate that these projects are frequently socially biased in that participants tend to be '[…] wealthier, more educated, of higher social status (by caste and ethnicity), male, and more politically connected than nonparticipants' (Mansuri and Rao, 2013, p. 5).

Thus, contrary to their declared inclusive and transformative aims, in some contexts, PD projects have actually reinforced the inequitable conditions for the marginalised groups they set out to empower (Cornwall, 2003; Eversole, 2010). In essence, researchers agree that the effectiveness of PD projects frequently suffers from insensitivity to local differences and insufficient appreciation of local context in project design (Cornwall, 2003; Mansuri and Rao, 2013). Agrawal and Gupta (2005) for instance recommend to more carefully considering the design and implementation of PD interventions 'so that participation can be biased in favour of the poor and the marginal' (Agrawal and Gupta, 2005, p. 1111).

Clearly then, if ICT-enabled development interventions are to contribute to more inclusive, participatory and decentralised governance in Africa, their design will have to be custom-tailored to the needs and abilities of those population groups that they seek to empower, that is those that are typically marginalised from political participation. However, the empirical data that are needed to do so are still scarce. First, the available literature on factors contributing to participation inequalities in sub-Saharan Africa is still incipient. To date, most of what is known about the individual level determinants of political participation on the African continent is informed by cross-national comparative research based on Afrobarometer data that focuses on electoral participation (Coffe and Bolzendahl, 2011; Isaksson, Kotsadam, and Nerman 2014; Kuenzi and Lambright, 2005; Resnick and Casale, 2011). Second, with few exceptions such as Snow Bailard (2009), sociodemographic differences in access to ICTs and digital skills in sub-Saharan Africa have not been systematically and quantitatively explored for their participatory implications thus far.

This study therefore proceeds by briefly outlining Togo's historical and contemporary political conditions as well as the extant state of its media and communication systems.

Precarious Democratic Transition: Contextual Limitations to Citizen Participation in Togo

Numerous studies dealing with the determinants of political participation have pointed to the importance of contextual factors such as the institutional, political and cultural environment (Desposato and Norrander, 2009; Inglehart, Norris, and Welzel, 2002; Marien, Hooghe, and

Quintelier, 2010; Tarrow, 1998). Togo belongs to the impoverished fragile states according to OECD criteria and has been classified as 'partially free' according to the Freedom House index of political rights since 2008. The incumbent president, Faure Gnassingbé, has been in power since the death of his father, Gnassingbé Eyadéma, who assumed the presidency through a coupe d'état in 1967 and ruled as Togo's authoritarian head of state for 38 years.

Following the unexpected death of Eyadéma in 2005, his son Faure Gnassingbé was unconstitutionally installed as new head of state by the armed forces and won a hastily organised election to confirm his position. His disputed victory triggered a wave of violence that caused several hundreds of deaths and forced roughly 40,000 Togolese to flee to neighbouring countries (UNHCR, 2005). Giving in to international pressure, in 2006, the country's rival political factions signed an agreement that formed a government of national unity and created an independent electoral commission. In the first free parliamentary elections held in 2007, Faure Gnassingbé's Rally of the Togolese People (RPT), founded by his father in 1969, secured 50 out of 81 National Assembly seats.

Observers of the country's political scene since that time have noted a decrease in voter participation and attribute that to general frustration over lack of reform. Beyond voting in national level elections, opportunities for citizen engagement in political activities are severely limited by the stagnation of the country's decentralisation process. Following a favourable report of the EU observer team on the conduct of the parliamentary elections in 2007, the European Union decided to resume its development cooperation with Togo. During the consultations leading up to the renewed cooperation agreement, the government pledged to put efforts towards decentralisation and local authority enhancement on top of its reform agenda (del Biondo, 2011). To date, however, the process of decentralisation has not gone beyond the stage of legislative announcements (UCLG, 2015).

The last municipal elections were held in 1987. Municipal councils consist of 11 members designated by the Head of State who are charged with managing the daily business of the municipalities until new elections are held (Amlalo, 2007). Not being democratically elected, they suffer from insufficient legitimacy among their constituencies (Gnamke, 2015). The government's strategy to delay local elections time and again under the pretext of lacking financial resources and infrastructure is largely interpreted as a lack of political will of the ruling elite to devolution of power to the local level (Kohnert, 2015; Togo Breaking News, 2014; Gnamke, 2015). Furthermore, Togo's municipal councils coexist, and at times compete, with two other types of legally recognised local authorities, namely traditional chieftaincies and neighbourhood development committees (Comités de Dévéloppement du Quartier)—whose competences are only vaguely defined by law.

The role of traditional chiefs in the process of decentralisation is unclear given their position at the intersection between the local and the central level and parallel structures of formal and informal institutions. Article 143 of the Togolese Constitution recognises the traditional chieftaincy as 'guardian of tradition and customs'. Depending on local customs, the institution of chiefs is either hereditary or by popular election from among a group of local notables (Republic of Togo, 2007). As elsewhere in Francophone Africa, in Togo, the institution of 'modern' traditional chieftaincy resulted from the process of colonial state building (Casentini, 2010; von Trotha, 1996). Still, chiefs continue to play an important role as brokers between the state and local populations and their most important function resides in their legal role as conciliators on civil and commercial matters at the local level (Gardini, 2012).

Finally, and further complicating the Togolese local political milieu, citizen neighbourhood committees (CDQs) are the main development structure that exists at the municipal level. The

declared purpose of the CDQs, whose creation was brought about by the Ministry of Social Affairs and endorsed by the International Monetary Fund (IMF) and World Bank (Dogbé, 2012), is to 'enable local populations to take charge of their own development' (CIDR, 2008, p. 42). However, the ability of the CDQs to live up to their envisaged role as grassroot organisations 'focused on fighting poverty through a participatory process' (IMF, 2014, p. xiv) is limited given the poor legal definition of their competencies and insufficient budget allocation (PASCRENA, 2014). According to a presidential decree of 2012 that set out the attributions, organisation and functioning of the CDQs, their members must be elected by the residents of the neighbourhood. However, they are often co-opted and strongly influenced by local chiefs and notables. Where this is not the case, conflict between traditional chiefs and CDQs often arises from the fact that they have overlapping competences but different sources of legitimation. While by law women and youth may be members of CDQs, they reportedly rarely allowed to participate in decision making and are mainly mobilised for activities relating to community sanitation and maintenance (CIDR, 2008).

Summarising the above, it can be said that legal dispositions in Togo theoretically provide citizens with different points of access to non-electoral participation at the municipal level. In practice, however, their effective participation remains constrained by diverse contextual factors including lack of political will of the ruling elite to devolution of power to the local level, parallel structures of formal and informal institutions as well as age and gender discrimination.

Market Concentration, Costs and Unreliability in Togolese Telecommunications

Beyond social and political conditions, the Togolese telecommunication market is highly concentrated and characterised by state-owned Togo Telecom's monopoly over the infrastructure. The resulting lack of competition in this sector has resulted in prices which are relatively high in regional comparison, as well as a poor quality of wired broadband connections (including cable-dependent Wi-Fi). Frequent power cuts add to the unreliability of the network. Still, GSM mobile phone networks cover 75 % of Togo's territory and according to the International Telecommunications Union (ITU) in 2013, mobile phone penetration was at 62 % of which 99 % of Togolese use prepaid plans instead of monthly billing plans. Practically all small retail shops sell airtime credit, and credit is also regularly sold by ambulant street vendors at bars and restaurants. Recharges are available from as little as 200 CFA (0.30 €).

In 2010, Togocel launched the country's first 3G mobile broadband internet service, but today, the network barely covers the capital Lomé and some of the biggest regional cities. Unlike many other providers in the region which offer a free 3G connection, Togo's citizens are charged an additional 25.000 CFA (38 €) for a connection kit. The cost of a monthly mobile internet subscription with Togocel is 15.000 CFA (22.87 €) which amounts to 54 % of the monthly GNI per capita (Togocel, 2015; World Bank, 2015). Given the high entry and connection costs, mobile internet remains a luxury for the average Togolese.

According to the ITU, by the end of 2013, only 4.8 % of the national populations were using the internet (ITU, 2013). Adding to problems of affordability, the quality of mobile internet connection remains poor. Network breakdowns are frequent and sometimes last for several days. Consequently, Togocel's announcement to launch a 4G network over the course of 2015 was met with bemusement by many critics who argued that the current 3G was inadequate at best, and efforts should be made to improve 3G before even considering 4G (Dunbar, 2015; Telegeography, 2015). Summing up, it can be said that access to ICTs remains

limited due to problems and affordability and underdeveloped infrastructure. The concentration of the telecommunication sector has proved inefficient on penetration rates and on the diversity and quality of services offered (IMF, 2014).

In light of all of the considerations outlined thus far, the empirical aims of this study are twofold: First, we seek to narrow the described research gap by examining how factors that have been identified as fostering inequalities in electoral participation across sub-Saharan African nations apply to citizens' non-electoral political participation in urban Togo. In doing so, we also identify both access to ICTs and the cultivation of digital skills among groups of citizens, including those that are marginalised from participation. Second, we respond to the demand for an empirically informed and context-sensitive design of PD initiatives by formulating policy recommendations for the design of ICT-enabled governance interventions in sub-Saharan Africa.

In order to move forward towards these goals, this study continues by posing and then exploring the following research questions:

RQ1: Which groups are marginalised from non-electoral political participation in urban Togo?

RQ2: What levels of (a) access to mobile and internet do certain populations have, and what levels of (b) digital competencies do they report?

Methods

The survey data analysed in this paper constitute the baseline for a larger, ongoing study that accompanies and consults an ICT-based citizen feedback crowd sourcing system implemented by the German Kreditanstalt für Wiederaufbau Development Bank (KfW) in the context of a decentralisation and good governance programme in Togo. Insights gained from the accompanying research study will serve to continuously adjust the design of the crowd sourcing system to the needs of local context, as well as monitoring its implementation and assessing its impact.

Consequently, the sample of the household survey conducted in March 2015, 6 months prior to the launch of the crowd sourcing system, was constructed to be representative of the target population of the KfW intervention, specifically citizens aged 15 years and older from the intervention's three target cities Sokodé, Tsévié and Kpalimé, plus the city of Atakpamé, which will serve the function of a non-treatment control city in the design of the larger research project. In order to guarantee adherence to the 'do no harm' principle,[1] the three target cities of KfW's intervention were not chosen randomly but based on clearly defined criteria. Namely, while they are similar in population size and economic situation, they vary with regard to geographic location as well as ethnic and religious composition of their populations.

The sampling procedure for the survey followed a randomised three-stage cluster design modelled after the example of the Multiple Issue Cluster Surveys (MICS) that UNICEF has carried out in over 100 developing countries since the mid-1990s (UNICEF, 2006). These

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[1] Since the 1990s, 'do-no-harm' has become a guiding principle in international humanitarian aid and development co-operation. According to this principle, donors must ensure that they 'do no harm' and consider both the intended and unintended consequences of their interventions.

efforts resulted in a sample of 1498 total respondents, with 280 respondents from Tsévié, 400 from Kpalimé, 460 from Sokodé and 358 from Atakpamés.

Findings

Previous research has shown that individual background characteristics of people who engage in non-electoral political participation differ from individual factors driving electoral participation (van Laer, 2011; Norris, Walgrave and van Aelst, 2005). To answer RQ1: 'Which groups are marginalised from non-electoral political participation in Togo?', we constructed the dependent variable 'participation' by first combining four binary questions into one scale of the extent to which respondents reported participating in politics. Here, these items (where no = 0 and yes = 1) were simply added together to produce a metric with a total range where zero demonstrated no political participation and four was full political participation. The questions posed asked if respondents had participated in a protest march or demonstration, if they signed a petition, belonged or donated money to a community or political organisation and if they attended a meeting of the development committee of their neighbourhood or other public meetings in which community affairs are discussed.

Before moving on to more detailed analyses, it is worth pointing out that 66.7 % of all respondents reported having not participated in any of the political activities identified, and only three (of all valid responses) showed having participated in all four activities. For this reason, this variable was converted into both a binary scale of 'no' and 'some' political participation as well as a scale from 'none' to participation in one, two and three or more political activities, which was considered 'full' participation. When examined along these parameters, just 33.3 % of all respondents showed any political participation and the average level of those activities was 0.47 (SD = 0.75) activities on a scale that ranged from 0 to 3.

Cross-national analyses of the gender gap in Africa find that patterns in the region generally mirror those of western democracies: While there are no to small gender differences in electoral participation, substantial gaps are observed in less institutionalised collective forms of participation (for example Coffe and Bolzendahl, 2011; Isaksson, Kotsadam and Nerman, 2014; Kuenzi and Lambright, 2005). Evidence from this survey also reflects this pattern. When comparing any observable differences across gender, it was clear that more males (44.9 %) showed some engagement in non-electoral political participation, which was statistically significantly ($\chi^2(df: 1) = 80.00$, $p < .001$) greater than that of females (23.1 %). This same pattern was also observable when comparing the average levels of political participation. Males, on average, participated in .66 political activities which was significantly more ($t(1236.03) = 9.41$, $p < .001$; equal variances not assumed) than the average participation level of .30 shown among females.

Age has been shown to be an important factor in shaping political participation. For instance, in their cross-national analysis of 19 African countries, Resnick and Casale (2011) found African youth to be less likely to vote and have a partisan affiliation than their older compatriots. Evidence from our survey suggests similar findings. Here, age was measured as a continuous variable and then divided into four categories, which demonstrate a statistically significant difference ($\chi^2(df: 3) = 16.12$, $p < .001$) among age groups, where the highest percent (41.5 %) of those aged 45–64 participated in politics, followed by 25–44-year-olds (32.6 %) and then individuals 65 years and older (29.9 %) with the youngest cohort of 15–24-

year-olds showing the fewest participants (27.8 %). Comparisons of average political partic-ipation over age groups showed the same statistically significant differences ($F(3, 41.14) = 8.04, p < .001$, equal variances not assumed) where the 45–64-year-olds demonstrated the highest levels of average participation ($M = 0.62$). This ranking was followed by the average participation of those 65 and over ($M = 0.47$), the age group of 25–44-year-olds ($M = 0.46$) and again the youngest cohort being the least politically active on average ($M = 0.34$).

Socioeconomic status (SES) has been shown to be positively related to electoral participa-tion in western industrialised nations (for example, Brady, Verba and Schlozman, 1995; Verba and Nie, 1972). Interestingly, in a cross-country study of ten African nations, Kuenzi and Lambright (2005) find a reverse pattern whereby citizens with lower incomes are more likely to vote than those with higher incomes. To explain this finding, they suggest that poor citizens may be more susceptible to clientelistic promises made by campaigning politicians due to their precarious economic situation. However, evidence from our survey suggests that a different logic applies to non-electoral participation.

To measure SES, we used a Likert-scaled item that asked the respondent to give an assessment of the economic situation of his household. Response options included the following: (0) we have severe financial difficulties and have to incur debts (or borrow money from friends or family) to pay for food, housing and bills; (1) sometimes, we find it difficult to pay for food, housing and bills and our income is spent before the end of the month; (2) our income is just sufficient to pay for food, housing and bills but we cannot make any savings; and (3) we have no problems to pay for food, housing and bills and can make some savings. In examining the relationship between respondents' economic situation and political participation, there were statistically significant differences at both the frequency ($\chi^2(df: 3) = 13.14, p < .01$) and average levels ($F(3, 633.34) = 3.92, p < .01$, equal variances not assumed) of comparison. In this instance, respondents with a financial surplus were most involved in politics (40.9 % and $M = 0.60$) than other financial groups, with a generally downward trend especially towards those with severe financial difficulties (25.2 % and $M = 0.36$).

Education was measured by five categories that ranged from (1) no schooling, (2) non-formal schooling (alphabetisation programme, Koranic school and so forth), (3) primary school, (4) secondary school and (4) postsecondary education. As might be expected, more highly educated individuals were seen to participate in politics more. Here, an even 60.0 % of respondents with postsecondary education had at least some participation. For all other educational groups, the percentage dropped nearly in half, to 34.6 % among those with a secondary school education and declining to just 21.8 % of those with no schooling ($\chi^2(df: 3) = 54.33, p < .001$). Likewise, when comparing average participation levels across education levels, there were statistically significant differences ($F(4, 178.79) = 10.70, p < .001$, equal variances not assumed) that showed the most educated respondents ($M = 0.87$) were drastically more participatory than less educated individuals, with a downward trajectory to the lowest average levels of political participation ($M = 0.30$) among respondents with no schooling.

The impact of religious life on individual involvement in public affairs is contested in political science literature. Although the argument is disputed, some scholars have singled out Islam as a religion that reinforces gender norms which negatively affect female participation (Inglehart and Norris, 2003). However, cross-national analysis in Africa found religious affiliation—regardless of which faith—to imply modest increases in electoral participation and a marked increase in collective action for both men and women (Isaksson, Kotsadam and Nerman, 2014; Resnick and Casale, 2011). Among participants in this survey, we observe a

slightly different pattern. To explore the impact of religious affiliation on political participation, respondents were asked to indicate their religion with response options that included claiming an affiliation as Muslim, Christian, Customary (traditional/animist), some other organised religion and no religious affiliation.

Here, it could be observed that 40 % of Muslims participated in politics, followed by 32.4 % of Christians, 21.8 % of those with Customary beliefs, 20.7 % that reported some other religious affiliation and just 16.0 % of those with no identified religion reported some participation in politics ($\chi^2(df: 4) = 26.53$, $p < .001$). The same statistically significant ($F(4, 136.02) = 9.27$, $p < .001$, equal variances not assumed) pattern emerged when comparing average levels of political participation, where Muslims ($M = 0.61$) and Christians ($M = 0.43$) were most active and those from other ($M = 0.27$) or no religious ($M = 0.20$) affiliation having participated in the fewest political activities.

When political participation across religious affiliations was separated along gender lines, the same religious groups showed the highest levels of participation as the overall distribution. Specifically, 30.1 % of Muslim women and 52.4 % of Muslim males reported some form of political participation, which were the greatest percentages among both females ($\chi^2(df: 4) = 18.75$, $p < .001$) and males ($\chi^2(df: 4) = 18.33$, $p < .001$). Both religion and gender were also then considered in a factorial ANOVA with summed political participation, and there was no statistically significant interaction, but there were main effects for both gender ($F(1, 1484) = 11.26$, $p < .001$) and religion ($F(4, 1484) = 10.81$, $p < .001$). Again, for both females ($M = 0.39$) and males ($M = 0.87$), political participation was highest among Muslims, though it was clear that overall males participated more than females, with the exception of non-religious respondents.

Finally, participation in political life was examined through regression modelling, which set participation as a binary proposition. Respondents either indicated having never participated in politics or with having engaged in at least one (or more) activities. Across the entire dataset, there were several important findings that shed additional light on the relative importance of factors that shaped this sort of political participation in Togo. In this analysis, being female decreased the likelihood of participation by almost half ($Exp(B) = 0.63$, $p \leq .001$), whereas each year of additional age increased that likelihood just marginally ($Exp(B) = 1.02$, $p \leq .001$). Other significant personal factors include higher education levels ($Exp(B) = 1.27$, $p \leq .05$) as well as being Muslim ($Exp(B) = 1.99$, $p < .05$), compared to other religions with 'other' religious affiliation as a baseline.

In terms of media factors, respondents that showed more developed skills in using mobile phones and the internet were 1.25 times ($p \leq .05$) more likely to participate for each additional skill acquired (on a scale from 0 to 3). In addition, those that sought to inform themselves about events and political news more often were indicated being more likely to participate in politics offline ($Exp(B) = 1.25$, $p \leq .001$). In terms of information channels, those that preferred to listen to the radio were 1.70 ($p \leq .001$) times more likely to participate, and those that indicated a preference for newspapers that were 3.33 (at $p < .10$) times more likely to participate in politics. In addition, those with higher internal ($Exp(B) = 1.42$, $p \leq .001$) and external ($Exp(B) = 1.40$, $p \leq .001$) efficacy also showed a greater likelihood to engage in politics, all of which is summarised in Table 1.

Perhaps somewhat surprisingly, when only the respondents that were generally marginalised from political participation—those that reported no participation or having engaged in just one offline event—were analysed, nearly all the exact same predictor variables remained significant, except having more developed digital skills ($Exp(B) = 1.14$, $p = .339$).

Table 1 Logistic regression models for the likelihood of political participation among all respondents and those reporting no or very limited participation

Participation	All respondents		Marginalised	
	Odds ratio	Standard error	Odds ratio	Standard error
Gender (female)	.6260555***	.088508	.6626031**	.1033472
Age	1.02032***	.0048164	1.012201*	.0053041
Income	1.045478	.0777092	1.03588	.086146
Employed	1.224756	.1648348	1.124596	.1676135
Education	1.26522*	.1251039	1.291079*	.1422506
Literacy	.8785614	.1116247	.8882318	.1229512
Non-religious	.9638582	.6254962	.9634909	.6897645
Christian	1.294208	.3612193	1.460044	.4518045
Muslim	1.988908*	.5769002	1.803496[#]	.5855286
Customary religion	.9113791	.3639966	.8200034	.380813
Digital skills	1.26796*	.1543881	1.136681	.1521462
Information freq.	1.250926***	.0633571	1.235399***	.0698176
Info. word mouth	1.194028	.2175738	1.189944	.2405355
Info. radio	1.695283***	.2646251	1.565777**	.2693801
Info. newspaper	3.333719[#]	2.280544	3.947958*	2.800681
Info. television	1.027007	.1662837	1.027706	.1867942
Info. internet	.7026502	.3353183	.4490939	.287351
Internal efficacy	1.41627***	.0855697	1.302912***	.0873727
External efficacy	1.402739***	.0910069	1.232499**	.088922
Constant	.0160469***	.0075688	.0242979***	.0127203
Pseudo R-squared	.1649		.1063	
N	1402		1235	

* $p < .10$, ** $p < .05$, *** $p < .01$, **** $p < .001$

These results are summarised below in Table 1 but also signal how similar the features are that predict political participation from marginalised to non-marginalised groups and, how at the moment, digital resources and skills are not bringing marginalised groups into the participatory fold.

This study next proceeded to explore RQ2: *What levels of (a) access to ICT do certain populations have, and what levels of (b) digital competencies do they report?* To measure access to ICTs, respondents were asked ('yes' or 'no') if they owned a mobile phone, and if respondents answered 'yes', they were then shown pictures of a basic cell phone and a smartphone and asked to indicate which type of phone they owned. In addition, respondents were asked (again, 'yes' or 'no') whether they had used the internet over the past 6 months. If the answer was yes, they were then asked to indicate the frequency of their internet use as either (0) 'only occasionally', (1) 'at least once per month', (2) 'at least once per week' or (3) 'every day'.

In terms of access, it is clear that many respondents personally own mobile phones, with 81.6 % indicating that they do. Yet of those that report having their own mobile phone, a majority of them report that they own a basic (60.1 %), as opposed to smartphone (39.9 %). When comparing mobile phone to internet access, just 13.3 % of this sample reported having used the internet in the last 6 months and of those that did use the internet, only 17.5 % indicated using the internet every day, with 41.0 % using it at least once per week, 14.0 % at least once per month and 27.5 % having gone online only occasionally.

Digital access of course does not always facilitate the development of digital skills—or in other words, the fact that individuals own mobile phones or can access the internet does not automatically imply that they can adequately use those resources. For example, of those that own mobile phones, 35.8 % report not knowing how or never having sent or received a text message, just a small fraction (12.1 %) report having connected a mobile phone to a Wi-Fi internet connection, and only 10.7 % have downloaded and installed applications to a smartphone.

To measure respondents' competence in the use of mobile phones, they were asked to rank, on a scale of 0 to 3, their confidence in being able to (1) make a call, (2) send and receive text messages, (3) connect a smartphone to Wi-Fi and (4) download and install applications on a smartphone. In the same fashion, to measure their skills in using the internet, respondents were asked about their perceived ability to (1) find information online using a search engine like Google or Yahoo, (2) use email to communicate with others and (3) use social networking sites like Facebook or Twitter to communicate with others. To assess overall digital competence, the four mobile phone skills and the three internet skills were set as binaries (either [0] 'had not' or [1] 'had' successfully completed each task) and then summed into a scale with a possible range of 0 to 7.

Once added, 84.7 % of all responses were in the range of zero to two skills, and less than 6 % of all respondents demonstrated having either three, four, five, six or seven skills. In order to maximise the variance and still retain real-world representativeness, the scale was adjusted to follow a 0 to 3 metric, where the 'full' digital skill set was effectively three or more competencies. Once compiled into this measure, there were only 10.2 % of all respondents that had no digital competencies, 15.3 % reported having a full range of three or more digital competencies and the average level of for this skill set was 1.63 (SD = 0.86).

In examining access and skills across gender, there was a higher percentage of males (89.9 %) that personally owned mobile phones, had smartphones (44.9 %) and used the internet in the past 6 months (22.0 %) than females (with 74.2 % owning mobile phones, 34.5 % having smartphones, and 5.7 % accessing the internet, respectively). All of those differences were statistically significant, with owning a mobile phone reporting ($\chi^2(df: 1) = 60.90$, $p < .001$), smartphone ownership ($\chi^2(df: 1) = 13.94$, $p < .001$) and internet access ($\chi^2(df: 1) = 86.79$, $p < .001$). Somewhat interestingly, there was no statistically significant difference in the frequency of males ($M = 1.45$) or females ($M = 1.60$) using the internet on the zero- to three-point scale of 'only occasionally' to 'every day' ($t(198) = -0.81$, $p > .05$). There was, however, a significant difference ($t(1486.52) = 15.87$, $p < .001$; equal variances not assumed) in the level of digital competencies reported by males ($M = 1.98$) and females ($M = 1.33$). Altogether, it seems clear that males have greater access to mobile phones and online resources than do females, who also show lower levels of digital skills.

When looking at age and its relationship to mobile phone and internet access, there were again clear differences. Specifically, the highest percentage (86.2 %) of those aged 25–44 owned a mobile phone, followed by 45–64-year-olds (83.5 %) and then

individuals from the youngest cohort of 15–24-year-olds (73.9 %), with those 65 years and older (71.0 %) showing the relatively lowest percentage of mobile phone owner-ship (χ^2(df: 3) = 32.07, $p < .001$). Comparisons of the type of mobile phone were more favourable towards younger users, with the highest percentage (47.7 %) of 15–24-year-olds having reported owning a smartphone, which declined among to 41.9 % for 25–44-year-olds, 31.0 % for those 45–64 and increased slightly to 31.6 % among those 65 and over.

Use of the internet in the past 6 months was likewise skewed towards younger users, from 23.8 % of the youngest cohort to 13.8 % among 25–44-year-olds, 5.7 % for 45–64-year-olds and just 0.9 % (one respondent) 65 or over (χ^2(df: 3) = 65.59, $p < .001$). Similarly, average digital competencies over age groups showed the same—statistically significant differences ($F(3, 423.03) = 105.81$, $p < .001$, equal variances not assumed) where those from younger age groups demonstrated the highest levels of digital skills acquired, in this case an average of 2.08 skills among those aged 15–24 years. This ranking was followed by the average digital competencies of 25–44-year-olds ($M = 1.72$), 45–64-year-olds ($M = 1.27$), with those 65 and overreporting the fewest digital skills ($M = 0.87$).

Now, when transitioning to examine the relationship between income and digital access and skills, there were statistically significant differences at both the frequency of mobile phone ownership (χ^2(df: 3) = 18.01, $p < .001$), smartphone ownership (χ^2(df: 3) = 59.36, $p < .001$) and having used the internet (or not) in the last 6 months (χ^2(df: 3) = 70.80, $p < .001$). In all of these comparisons reported here, respondents with 'sufficient' incomes or with 'no income problems and the ability to make financial savings' demonstrated higher levels of ICT access. This finding was mirrored in the average levels of frequency of internet use ($F(3, 194) = 5.83$, $p \leq .001$) as well as digital competencies ($F(3, 635.19) = 34.40$, $p < .001$, equal variances not assumed). Across both these measures, respondents with sufficient financial means or a financial surplus reported using the internet more frequently and had higher levels of digital skills than other financial groups, particularly those with severe financial difficulties.

In continuing this overview, education was examined across groups to measure its rela-tionship with more and less developed access to and skills with digital media. Findings show there was a clear difference in mobile phone ownership, smartphone ownership and internet access. As expected, those groups with increasingly higher levels of education consistently reported increasingly higher levels of mobile and smartphone ownership ((χ^2(df: 4) = 75.22, $p < .001$); (χ^2(df: 4) = 78.37, $p < .001$)) and internet access (χ^2(df: 4) = 285.50, $p < .001$). These differences were most pronounced in terms of having used the internet in the last 6 months, where not one respondent from either groups with no schooling or non-formalised schooling answered the affirmative, compared to 58.2 % of those with postsecondary educa-tion that did.

Along these lines, the frequency of average internet use did not vary significantly ($F(2, 10.66) = 3.64$, $p = .06$, equal variances not assumed) across education levels, in part because among the just 200 respondents that reported using the internet, the average for primary school through postsecondary school groups all ranged between 'at least once per month' and 'at least once per week'. While this observation suggests almost no one uses the internet 'every day', the distinction in digital skills across education is more pronounced ($F(4, 178.84) = 34.40$, $p < .001$, equal variances not assumed). Respondents with no schooling averaged less than one skill ($M = 0.63$), which increased incrementally across education to an average of 2.58 skills (quite nearly the 'full' complement) reported by postsecondary individuals.

As with the previous section on political participation, digital skills were examined in greater detail through regression modelling. In this case, the dependent variable of digital skills was examined with a the range of 0 to 3, and so ordinary least square (OLS) regression was applied to the entire dataset and then separately to only women, who were clearly less active users of digital media with a less developed skill set (along with lower levels of political participation). Here, when modelling all respondents, it was clear that there were a number of key factors that were influential in development of increasing digital skills in Togo. Namely, being female was related to a decrease in the acquisition of digital skills ($B = -0.19, p \leq .001$), and each additional year of age was related to a marginal decrease in those skills ($B = -0.01, p \leq .001$). Additional factors that were significant included greater income ($B = 0.06, p \leq .001$) and education levels ($B = 0.15, p \leq .001$).

When looking at mobile phone ownership ($B = 0.33, p \leq .001$) and having used the internet in the last 6 months ($B = 0.92, p \leq .001$), it was clear that both were crucially important in contributing to the development of increasing digital skills among the Togolese. There was also a positive relationship with greater literacy ($B = 0.25, p \leq .001$) and being Christian ($B = 0.08, p \leq .10$) or Muslim ($B = 0.09, p \leq .05$) but no other factors showed statistical significance, as is summarised in Table 2.

In modelling the factors that were related only to females developing greater digital skills, nearly all of the same factors emerged with the same directional relationship. Except in this case, Christian and non-religious (but not Muslim) women showed more digital skills ($B = 0.13, p \leq .10$ and $B = 0.29, p < .10$). Also, external efficacy showed a negative relationship to

Table 2 OLS regression models for the development of digital skills among all respondents and among only females

Digital skills	All respondents		Females	
	Coefficient (β)	Standard error	Coefficient (β)	Standard error
Gender (female)	−.1891801***	.0257976		
Age	−.009196***	.0008337	−.0104476***	.0012898
Income	.0566737***	.0133746	.0463438*	.0200631
Employed	−.0101407	.0247023	−.017947	.0365027
Education	.1517702***	.0173343	.1550002***	.0241713
Literacy	.2531223***	.0225206	.2528935***	.0316229
Non-religious	.1199798	.1047201	.2850422[#]	.1744593
Christian	.0846812[#]	.0471107	.1300886[#]	.0680067
Muslim	.0975973*	.049447	.1124544	.0711244
Customary religion	.0317451	.067342	.3357597***	.1069982
Own mobile phone	.3326107***	.0324124	.3357597***	.0411187
Use internet	.9224809***	.0366701	.9956014***	.0761804
Information freq.	.0025961	.0096179	.0089703	.0151706
Internal efficacy	.0152526	.0107738	.0029106	.016917
External efficacy	−.0084533	.0117312	−.030623[#]	.0178437
Constant	.8471407***	.0720486	.7136979***	.0972961
Adjusted R-squared	.7462		.6880	
N	1404		733	

* $p < .10$, ** $p < .05$, *** $p < .01$, **** $p < .001$

digital skills ($B = -0.03$, $p \leq .10$) among women. Mobile phone ownership ($B = 0.34$, $p \leq .001$) and having used the internet within the last 6 months ($B = 1.00$, $p \leq .001$) remained the two most noteworthy factors in digital skill development among females, which is again summarised in Table 2 and re-identifies certain pathways towards digital skills that could well contribute to all citizens, but especially females to develop further, which could eventually relate positively to political participation, most notably among groups such as females that are currently marginalised from a participatory standpoint.

Discussion and Conclusion

Digital ICTs, particularly mobile telephony, have expanded dramatically in Africa over the past decade. Scholars and practitioners in international development have become increasingly interested in the potential that this trend holds for addressing the problems of governance faced by many of the region's countries. It has been argued that ICT-based crowd sourcing of citizen feedback could contribute to a new participatory and decentralised modality of governance that would help to improve social inclusion. At the same time, a critical stock taking of conventional (that is non-ICT-enabled) PD interventions which have been conducted over the past decade has shown that PD projects often fail to effectively target marginalised groups and increase social inclusion. Due to insufficient appreciation of local context in project design, PD projects have in several cases reinforced the inequitable conditions for the very population groups they set out to empower by unintentionally promoting the participation of privileged elites.

We have argued that in order to avoid such unintended effects of elite capture, the design of ICT-enabled PD projects around governance interventions will need to be custom-tailored to the needs and skills of the population groups whose inclusion they seek to promote, namely those that are typically marginalised from political participation. To help towards the generation of the empirical foundation needed for a context-sensitive project design of ICT-enabled development interventions that seek to improve the quality of governance in Africa, we analysed data from a representative survey of 1498 households in four Togolese middle cities. Specifically, in the first section of this study, we analysed the sociodemographic determinants of non-electoral participation and in the next section we analysed the impact of significant sociodemographic characteristics on access to ICT and digital skills. In this final section, we discuss and interpret these quantitative findings by complementing them with qualitative data from over 80 interviews and focus group discussions gathered by a team of participatory action researchers.

Regarding participation, we found general levels of non-electoral political participation in Togo to be very low. One possible explanation for this is the country's relatively recent experience of authoritarian rule. Respondents in qualitative interviews repeatedly stated that given the public, non-anonymous nature of such participation, many citizens socialised under the authoritarian Eyadema regime fear repression if found engaging in such activities. Furthermore, regression results revealed three major sociodemographic factors that appear to determine non-electoral participation, namely male, older and better educated individuals being significantly more likely to participate. While these findings largely mirror patterns observed in western developed democracies, they may also, at least partially, be driven by factors specific to the Togo's political context.

Scholars investigating the effect of gender on participation have argued that the diffusion of global norms about female political equality has encouraged female participation in elections

and formal politics in many African countries, thus contributing to a situation where institutionalised forms of participation are 'safer' arenas for women to participate compared to less formalised forms of participation (Kuenzi and Lambright, 2005). This finding appears to be also the case of Togo where local politics are dominated by government-appointed municipal authorities and competing institutions of local traditional chieftaincies and neighbourhood committees which have been reported to not only structurally disadvantage the participation of women but also of youth. Our qualitative interview data confirm the existence of multiple discrimination barriers to community participation in the cities under study. When asked about their participation in meetings of their neighbourhood committees or at their local chief's place, respondents repeatedly stated female gender, young age and poverty as factors limiting their ability to influence community decisions, as illustrated by the three following interview excerpts:

'Normally, when a woman wants to express her point of view during a meeting she is disregarded. There are men who say: you woman, what are you doing here? Your place is not here, it's in the kitchen! And this is why women are discouraged and lose interest in the development of the community' (interview with a housewife, Sokodé).
'My age also is an impediment [to participation in meetings]. Because when I talk about development people tell me that I'm just a little girl and they will listen a lot more to people who are older than me' (interview with a young female hairdresser, Sokodé).
'It's because of poverty that I cannot influence the development of the community [...] In this community if you have money you'll be listened to. But if you are poor you will not be considered because you are not connected' (interview with a female street vendor, Kpalimé).

In addition, we observed a positive relation between religious affiliation and participation for both males and females which indicates that rather than reinforcing traditional gender norms detrimental to female participation, religiosity implies access to social networks that foster participation. Interestingly, the positive impact of religious affiliation on participation was most pronounced for respondents of Muslim faith. In additional, qualitative interviews Muslim religious leaders were reported to regularly provide religious interpretations of local developments during Friday prayers which may act as incentives for their followers to become more engaged politically.

Regarding the relation between media factors and political behaviour, we found individuals who are more digitally skilled to be more active politically offline, as are those who regularly seek to inform themselves about politics and prefer doing so by reading newspapers and listening to the radio. However, we also found that as of the moment, digital resources and more developed digital skills are doing little to foster the participation of politically marginalised groups. This finding is possibly best explained by the combination of internet penetration and affordability specific to the case of Togo. Given the high entry and connection costs, the use of the internet remains unaffordable for the average Togolese. Although the 13.3 % internet penetration within our sample is relatively high when compared to the national average of 4.8 %, the number of internet users still appears to be smaller than the critical mass needed for the internet to become a networking resource relevant for the mobilisation of participation. In an open question option included in our survey, several respondents indicated the 'lack of correspondents' as a reason for not using the internet. In a qualitative interview, a young, digitally literate man summarised his difficulties in using the internet as a means of communication as follows:

'It is simply frustrating if you go to an internet café, have to wait 30 minutes for the browser to open your mail account, and end up having to pay 200 CFA (0.30 €) only to find that nobody has written to you anyway'.

Regarding access to ICTs, mobile phone penetration (81.6 %) and internet penetration (13.3 %) in our sample resulted to be considerably higher than the national averages of 62 and 4.8 %. Furthermore, 39.9 % owned a smartphone which is also high compared to the regional estimate of 17 to 18 % (GSMA 2015; IT News Africa, 2013). From our sample being representative of the population aged 15 years and older of four Togolese middle cities, the conclusion can be drawn that mobile phone-based development interventions in Africa stand good chances of reaching out to a sizeable majority of urban target groups, while purely internet based interventions would certainly fail to do so.

That being said, we also found that access to ICTs does not necessarily facilitate the development of digital skills. In the sample reported here, 36 % of mobile phone owners are unable to use SMS and even less know how to connect a mobile phone Wi-Fi (12.1 %) or to download and install applications (10.7 %), which clearly identifies that an overwhelming majority of basic cell phone and even smartphone owners are unable to profit from the more progressive functions of their devices. Regression analysis further revealed that some of the sociodemographic characteristics that stand in the way of political participation also reduce individuals' likelihood of being able to effectively use digital resources. Specifically, we found gender, education and income to significantly impact the acquisition of digital skills with women, as well as less educated and poorer individuals having lower levels of digital competence. However, this relationship is the inverse for age. That is, while younger people were less likely to participate in offline politics, we found them to be significantly more likely to have access to mobile telephony and to be more digitally skilled.

The above findings hold important implications for the project design of ICT-enabled development interventions in urban African communities. Certainly, the clearest advice is to keep things technologically simple and socially sensitive. In order to maximise project outreach among urban communities, ICT-enabled interventions should be primarily mobile phone based. This caveat is particularly important with projects in the governance sector that aim at increasing the participation of marginalised groups. While web pages and social networking sites could be useful addendums to inform about project achievements and progress, governance interventions should forego reliance on internet-dependent apps, widgets and social networking sites when it comes to the collection of citizen feedback in order to minimise the risk of elite capture.

Over the past years, open source frameworks for automated data collection and processing by means of text messaging (for example RapidSMS or FrontlineSMS) have been employed successfully for the crowd sourcing of citizen reports and feedback in the context of humanitarian crisis management, as well as for participatory projects in the health and education sector. However, our findings indicate that in the context of governance, interventions even such basic solutions could unintentionally reinforce existing participatory biases related to gender and education, which are factors that also determine the ability to use SMS services.

In order to avoid this risk, SMS-based crowd sourcing systems should either be complemented with components that allow citizens to give oral feedback such as call centres and interactive voice recording (IVR) solutions or digital literacy initiatives. Ideally, mobile phone-enabled PD governance interventions would adopt a blended design that combines the opportunity for citizens to provide feedback using SMS and call centre hotlines with offline deliberative meetings. Without measures explicitly directed at marginalised groups, mobile phone-

enabled PD interventions are unlikely to achieve the assumed benefit of ICT in increasing the level of inclusiveness. However, it needs to be considered that such additional project components are cost intensive which, in turn, raises questions about the relative efficiency of ICT-enabled PD interventions compared to conventional PD interventions.

Thought also needs to be given to the question who controls and influences an ICT-enabled PD intervention, i.e. who drives and controls the project design, who decides on the issues and questions that will be submitted to public debate and scrutiny via digital technologies, and who controls the use of the outcomes. Prior research has found that the efforts of international donors to 'inject' community participation and public accountability into local policy making processes are frequently frustrated by organisational and institutional obstacles (Waisbord, 2008). ICT-enabled PD interventions strongly depend on the support of opinion leaders at the local level. Thus, such interventions face trade-offs between context adaptation (i.e. 'having important actors on board') and transformative power (i.e. 'challenging important actors') as outlined in greater detail by Wesselink, Hoppe and Lemmens (2015). In the case of Togo, this problem manifests itself in the role of the traditional chieftaincy and the neighbourhood development committees. On the one hand, their strong influence in local politics makes it unlikely that any PD intervention could succeed without their support. On the other hand, as our interview data show, both institutions de-incentivize the participation of women, youth and the poor.

An ICT-enabled PD intervention could therefore only develop truly transformative power if it complemented existing mechanisms of participation in a way that facilitates the circumvention of these institutions. Preliminary scoping studies for participatory PD interventions should thus pay careful attention to local influence networks and power relations in order to allow for a project design that strikes the balance between the necessary context adaption and transformative power. And finally, the question of costs needs to be considered. Given that access to and effective use of ICT are positively related to income, the participation of the poorer population segments can only be ensured if citizens are given the possibility to provide feedback either free of cost or at least at a minimum possible cost. The development of alternative funding strategies to cover the cost of mobile citizen communication will hence be crucial for ensuring the financial sustainability of such projects beyond donor funding.

Compliance with Ethical Standards

Informed Consent Informed consent was obtained from all individual participants included in the study.

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