Intersections between civic technology (civic tech) and governance in Nigeria and South Africa

Melissa Zisengwe
Programme Associate, People Powered, Cape Town
https://orcid.org/0000-0002-1363-9714

Abstract
This study explores the drivers and impact of the civic technology ("civic tech") ecosystems in Nigeria and South Africa, with a focus on civic tech actors' engagement with governance matters in the two countries. Framed by a social accountability conceptual framework and based on data collected from an African civic tech database and interviews with civic tech players in both countries, the research explored the work of 26 initiatives in each country. Based on the content in the civic tech database, it was found that, in both countries, civic tech initiatives' foci could be grouped into five categories: (1) citizen engagement and participation; (2) accountability and transparency; (3) service delivery and government responsiveness; (4) improving and/or helping government; and (5) policy. The emphases among these foci were found to be largely similar between the two countries, with the exception of the fourth category of focus—improving and/or helping government—which was significantly more prominent in the work of the South African initiatives than in the work of their Nigerian counterparts. A similar difference was identified in the findings from the interviews with Nigerian and South African civic tech actors. The South African interviewees identified, to a greater extent than the Nigerian interviewees, a collaborative ethos that was bringing government entities and civic tech actors together to jointly implement projects, including projects that had been fully integrated into the operations of government departments.

Keywords
civic technology (civic tech), governance, digitisation, social accountability, open data, Nigeria, South Africa

DOI: https://doi.org/10.23962/ajic.i33.18883

Recommended citation
Zisengwe, M. (2024). Intersections between civic technology (civic tech) and governance in Nigeria and South Africa. *The African Journal of Information and Communication (AJIC), 33,* 1-26. https://doi.org/10.23962/ajic.i33.18883

1. Introduction

Civic technology ("civic tech") is a phenomenon that can be said to manifest when a networked civic community adopts digital and related approaches to improve governance (Gilman, 2017; Rumbul et al., 2018). Harnessing digital tools and platforms, civic tech actors are able to participate in governance by, inter alia, enabling citizen engagement focused on improved accountability and transparency of government activities.

The civic tech community emerged in the early 2000s and was influenced by open governance and information freedom advocacy networks, and by the shifts in democratic governance fostered by digital technology (Chatwin & Mayne, 2020; McGee et al., 2018; Rumbul et al., 2018; Skaržauskienė & Mačiulienė, 2020). According to Zhang et al. (2022), the civic tech ecosystem is international, cross-industry, and interdisciplinary. The international civic tech community has grown rapidly in varying contexts, with over 7,500 initiatives documented in the international Civic Tech Field Guide (Stempeck, 2023). In the African context, the African Civic Tech Atlas online database, collated and hosted by the Civic Tech Innovation Network (CTIN), currently documents over 240 initiatives from 30 African countries (CTIN, n.d.).

While an increasing number of studies are exploring civic tech, the research often focuses on Western contexts. (Aragón et al., 2020; Duberry, 2022; Sun & Yan, 2020). There is limited research focused on understanding the evolution of civic tech in Africa. The study on which this article is based was an attempt to contribute to filling this research gap. This article provides findings from a study of civic tech's contribution to governance in Nigeria and South Africa. This study's core research question was: How does the emergent civic tech community contribute to governance in Nigeria and South Africa?

2. Background and context

Governance is a process that includes relationships, collaborations, and activities entered into by government institutions, civil society organisations (CSOs), and other stakeholders to improve citizens' lives. Good governance requires efficient, accountable institutions that promote development, human rights, and respect for the rule of law, and that also ensure citizen participation and engagement in issues affecting them (Keping, 2017; Kaur & Sitlhou, 2017; Makara, 2018; Nyaranga et al., 2019; Waddington et al., 2018; Yimer, 2015). Governance has gained prominence due to the complexity of societal challenges and the realisation that other stakeholders can help governments address these challenges. Government institutions and other actors have recognised that outside knowledge and expertise are required to deal with ineffectiveness and inefficiencies in governance caused by weaknesses in government (Makara, 2018).

In contemporary society, digital technologies offer the potential to increase efficiency, transparency, responsiveness, and public trust, directly impacting the quality of governance. Digitalisation and the data revolution create opportunities for non-governmental actors and citizens to engage and improve governance (Bjerde & Demirgüç-Kunt, 2021). According to Gritsenko and Indukaev (2021), using digital technologies in democratic governance is commonly associated with promises of increased administrative efficiency and citizen empowerment. Asongu and Nwachukwu (2016) contend that improved governance is achieved through digital technologies that enable social convergence for better participation and information-sharing.

The last two decades have witnessed a wave of technologists, CSOs, NGOs, communities, and other actors innovating for governance and societal issues. These actors have been building websites, portals, platforms, and mobile apps to enable citizens across the globe to organise campaigns, sign petitions, monitor their representatives, track parliamentary activities, propose ideas, and draft legislation or constitutions (Poblet & Plaza, 2017). These actors are often at the forefront of open government advocacy and "open data" strategies to promote citizens' participation and increase transparency.

Narrowly and clearly defining civic tech can be contentious due to its broad scope of stakeholders, focus areas, and forms, and because the civic tech phenomenon can also go by other names, including civic innovation, tech for good, civic crowdsourcing, and community technology (Knutas et al., 2023). Many scholars offer conceptions of civic tech (see, for example, Chatwin & Mayne, 2020; Duberry, 2022; Gilman, 2017; McGee et al., 2018; McNutt et al., 2016; Poblet & Plaza, 2017; Rumbul et al., 2018; Skaržauskiene & Mačiulienė, 2020; Yoshida & Thammetar, 2021; Zhang et al., 2022). For this study, civic tech was conceived of—based on both the available literature and the findings of the study—as the creation, adoption, and use of digital technologies and other methodologies by non-governmental actors (such as CSOs, NGOs, social enterprises, civic hacker groups, and individuals) to enhance democratic governance through focusing on one or all of the areas: citizen engagement and participation; accountability and transparency; service delivery and government responsiveness; improving and/or helping government; and policy. This study's conception of what constitutes a civic tech initiative was also broad, as it included initiatives that had resulted from collaborations and learning between civic (tech) actors and government institutions, and even government-run initiatives inspired or provoked by civic tech actors.

Civic tech can help with many facets of civic life, like community organising, public participation, crowdfunding, transportation, and social equity (Network Impact, 2015). Civic tech organisations have developed reporting and data-sharing platforms to facilitate accountability and transparency, citizen empowerment, and participation in governance, and to enable grassroots advocacy.

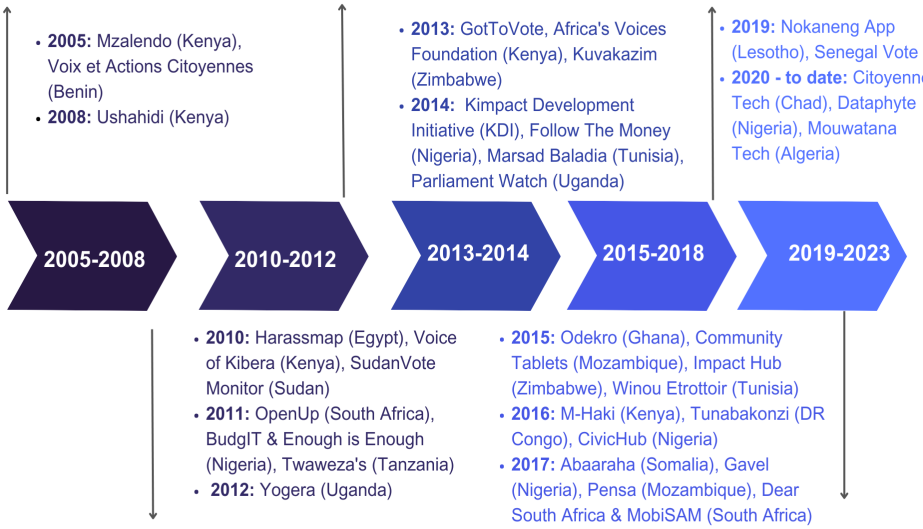
The earliest African civic tech initiatives, such as Mzalendo in Kenya and Voix et Actions Citoyennes in Benin, were launched in 2005. But the movement's rise to prominence is usually traced to 2008, when Kenyan bloggers and software developers created Ushahidi, an online platform for active citizens to report post-election violence in that country (Couve et al., 2018, p. 5; Rotich, 2017). The Arab Spring in North Africa, and other online movements that followed, further catalysed civic tech in Africa. Ushahidi remains one of the most critical developments, as it engendered and benchmarked the African civic tech movement (de Rochegonde, 2020).

Between 2005 and 2017, many African countries saw the introduction of civic tech platforms, with notable developments in North Africa (Egypt, Tunisia, Algeria), West Africa (Benin, Nigeria, Senegal, Ghana, Burkina Faso), Central Africa (Democratic Republic of the Congo, Chad), East Africa (Kenya, Uganda, Somalia Sudan), and Southern Africa (South Africa, Mozambique, Zimbabwe, Lesotho).

South African civic tech only began picking up around 2014 (Bosch & Roberts, 2021). Since then, there has been an increase in civic tech organisations, with the establishment of notable initiatives and organisations such as MobiSAM, amandla.mobi, OpenUp, Grassroot, GovChat, Lungisa, and Wazimap (Roberts, 2021). Through partnerships between civic tech organisations and government entities, South Africa has implemented open data projects including Vulekamali and Municipal Money.

In West Africa, Nigeria leads the civic tech community. Key Nigerian civic tech organisations and initiatives include BudgIT, Enough is Enough (EiE), Connected Development's Follow The Money (FTM) and Uzabe initiatives, CivicHub, Dataphyte, the Centre for Journalism Innovation and Development's Udeme initiative, the Public and Private Development Centre's Budeshi initiative, Shine Your Eye, iTakeActions, and Gavel.

Figure 1: Key developments in African civic tech, 2005-2023



Note. Source: Researcher.

Rumbul (2015) points out that large foundations often support civic tech actors, and trusts are interested in supporting a burgeoning sector focused on using technology for the public good. African civic tech projects use and create a variety of technological tools for their initiatives, ranging from low-tech options such as USSD, to online platforms like WhatsApp, Facebook, and Twitter, to high-tech solutions like artificial intelligence (AI) and blockchain.

African civic tech is often transnational. For example, civic tech organisations OpenUp, Open Cities Lab, Code for Africa, Charter Africa, and BudgIT work in several countries. Tech hubs such as Co-Creation Hub (ccHub) (Nigeria, Rwanda), Ihub (Kenya), Impact Hub (Zimbabwe), and Wennovation (Nigeria) play an enabling role in the movement, as they often incubate and support civic tech projects (Mbugua, 2018). In recent years, the African Union's Women, Gender, and Youth Directorate (WGYD), in collaboration with GIZ and the African Union, has supported 29 civic tech organisations through the African Union Civic Tech Fund (AU, 2024; CTIN, 2024).

3. Conceptual framework: Social accountability

The social accountability framework was found to be suitable for this study because it can enable an understanding of the relationship between civic tech and governance. Almén and Burell (2018) and Brummel (2021) contend that social accountability is often rooted in development discourse focused on citizenship embedded in alternative and participatory democratic models. Often, social accountability stems from citizen engagement, and citizen demands for accountability and improved governance (Ruppen & Brugger, 2022). Social accountability involves actions that citizens can take beyond elections to increase accountability; it relates to notions of voice, political participation, and empowerment; and it relies on citizen engagement.

Social accountability is a concept that can be positioned as connected to the fields of both governance and civic tech. For instance, Khene et al. (2021), in their case study of South Africa's MobiSAM civic tech initiative, use the social accountability concept to explain the power and knowledge dynamic involved in civic tech projects focused on citizen engagement and participation, and accountability. Wakabi and Grönlund (2015) use a social accountability framework in their Ugandan study of motivations for engagement between citizens and government officials using digital technology. Pade-Khene et al. (2017) discuss the push to use digitally innovative approaches to help developing countries monitor social accountability, with these approaches often including civic technologies.

Brinkerhoff and Wetterberg (2015) argue that social accountability can be viewed in either normative or instrumental terms. In this study, I chose the instrumental perspective, based on the three instrumental goals that Brinkerhoff and Wetterberg set out: "increasing the effectiveness of service delivery, improving the quality of governance and democracy, and increasing citizen empowerment" (Brinkerhoff & Wetterberg, 2015, p. 275). Consideration of these three goals assisted me in my interpretation of the data in the civic tech database, in my interviewing, and in my interpretation of the data from my interviews.

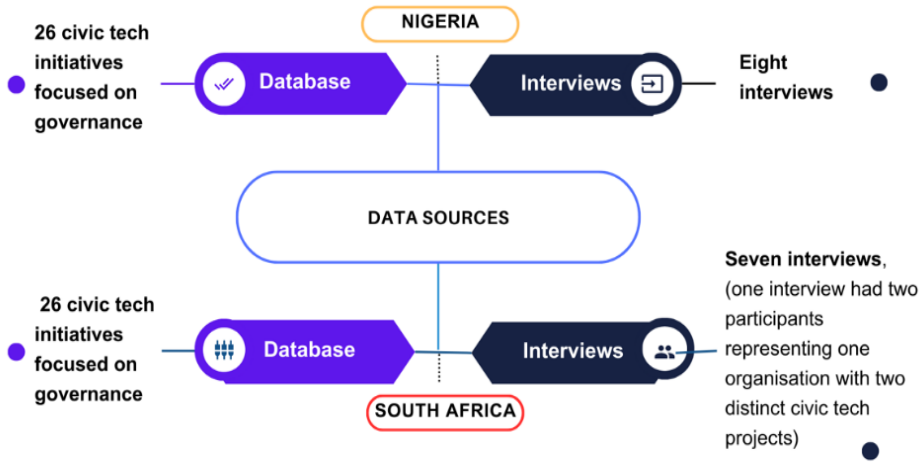
4. Methodology

This research adopted a qualitative approach. Data was collected in the period August 2022 to January 2023 from the contents of the aforementioned African Civic Tech Atlas database and from semi-structured interviews with civic tech actors in Nigeria and South Africa. CTIN, the entity that runs the African Civic Tech Atlas database, is a project of the School of Governance, University of the Witwatersrand (Wits), Johannesburg. The database began in 2018 as an online, publicly available directory of civic tech South African projects and innovators, and was expanded in 2019 to include the rest of Africa.

Twenty-six civic tech initiatives focused on governance were identified in each country, and I interviewed 15 civic tech actors representing 15 organisations: eight in Nigeria and seven in South Africa (Figure 2). I used a non-probability purposive sampling method to select the participants. The database was used to identify and recruit experts. I also used snowball sampling, whereby I asked confirmed participants to suggest additional possible respondents for me to contact. All the interviews were conducted remotely, via Zoom, according to an interview guide (see Appendix). Two of the South African participants were interviewed together.

The interview transcripts were coded using the ATLAS.ti qualitative data analysis software. To provide uniformity and anonymity, participants were assigned codes. The Nigerian participants were coded as NI01 to NI08, while South African participants were assigned the codes SA01 to SA07.

Figure 2: Data sources



The themes set out in the findings sections below emerged from consideration of the literature, the database contents, and the interview transcripts.

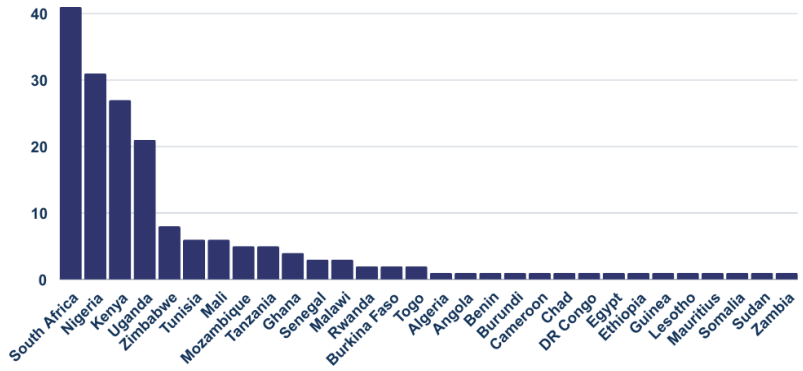
5. Findings

The findings are now presented in three sub-sections: (1) the African civic tech movement; (2) Nigerian civic tech and governance; and (3) South African civic tech and governance.

The African civic tech movement

At the time of my analysis in 2023, the African civic tech database contained 189 projects working across 30 countries. Figure 3 shows the 30 countries represented in the database.

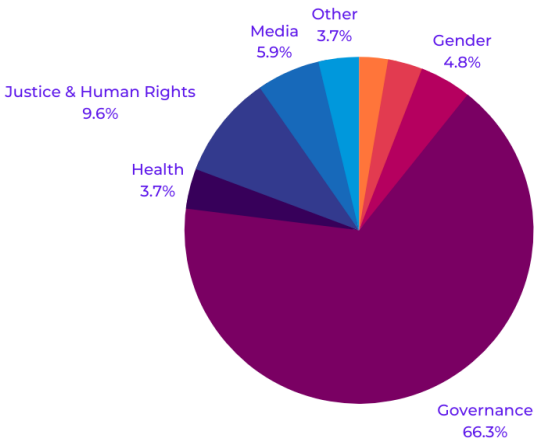
Figure 3: African countries with a civic tech presence



Note. Source: Researcher, based on data in African Civic Tech Atlas database.

A significant majority (66.3%) of the initiatives in the database were found to have, in general terms, a focus on governance matters (Figure 4).

Figure 4: African civic tech projects' general focus areas



Note. Source: Researcher, based on data in African Civic Tech Atlas database.

I then sought to determine the core issues present in the work of the civic tech entities focused on governance matters. Four broad issue areas were identified (Figure 5): government failure; lack of, or poor, service delivery; lack of transparency and accountability; and lack of platforms and tools.

Figure 5: Governance issues addressed by African civic tech

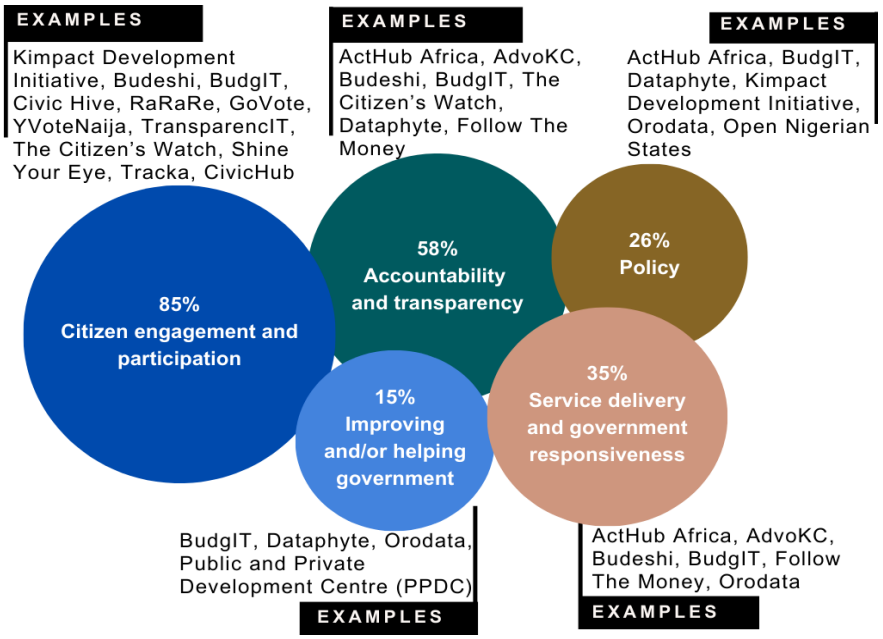
Note. Source: Researcher, based on data in African Civic Tech Atlas database.

Nigerian civic tech and governance

Focus areas

Analysis, via the database, of the descriptions, missions, and vision statements of the 26 identified Nigerian initiatives found that their work was primarily focused on five governance elements (see Figure 6 below): citizen engagement and participation (85% of the initiatives); accountability and transparency (58%); service delivery and government responsiveness (35%); improving and/or helping government (15%); and policy (26%). Most of the initiatives were focused on two or more of these elements.

Figure 6: Governance foci of the 26 Nigerian civic tech organisations



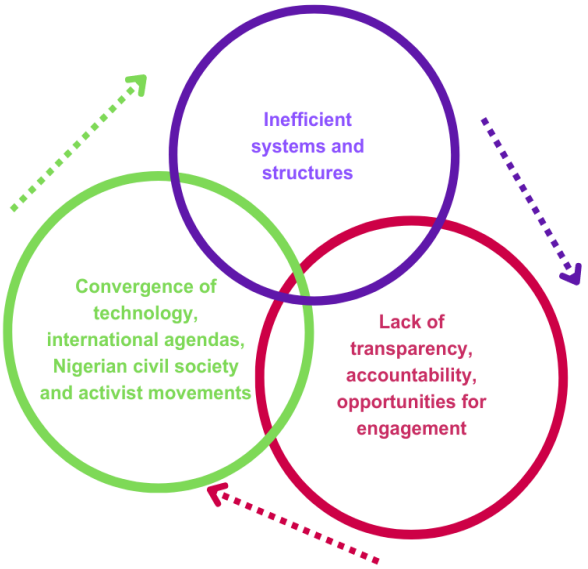
Note. Source: Researcher, based on data in African Civic Tech Atlas database.

Drivers of Nigerian civic tech's work on governance matters

In the Nigerian participants' interview responses, the drivers of the country's civic tech organisations' work on governance matters fell into three interconnected core themes (Figure 7):

- inefficient systems and structures;
- lack of transparency, accountability, opportunities for engagement; and
- convergence of technology, international agendas, Nigerian civil society, and activist movements.

Figure 7: Drivers of Nigerian civic tech's work on governance matters



Note. Source: Researcher.

Inefficient systems and structures

The participants were generally in agreement that a key driver of Nigerian civic tech was inefficiency in government systems and structures caused by the slow pace of innovation and technology adoption. NI01 pointed to the fact that the Nigerian government was still using many analogue processes, which created bottlenecks and slow service delivery. This also introduced an additional challenge: a lack of data to measure and monitor progress on governance issues. In the words of participant NI02:

> I've seen some acceleration of technology in almost every facet of society from business, philanthropy, and media. However, the adoption of technology in government, or governance, has been slow. And the growth of technology, especially the internet, has not influenced engagement between government and citizens as it should.

Participant NI06 saw the drivers of Nigerian civic tech in terms of government failures in key areas:

> And the more crucial those areas are, the more likely it is to find that some civic tech organisation is providing services and has stepped up to fill this gap or to watch and critique the actions of governments. So that's the issue, government's failings.

Participant NI07 said that Nigerian civic tech existed because of "the absence of governance".

Lack of transparency, accountability, opportunities for engagement
In the words of participant NI03:

> The reason is very simple: we want democratic accountability […] if the people are going to get the benefits of democracy, there has to be accountability. So we are at the forefront of the advocacy, for example, when that money does come in. Does it go into the pockets of a few people, or does it go to solve the problems of that poor woman whose farmland has been wiped out by the floods? Or does it go to solve the challenges of that poor farmer whose crops are no longer yielding because of droughts or because of new diseases that we're not used to before? Does this solve those people's problems, and what about those whose problems are not solved? [There] need to be people who stand up and try to fill that gap and bridge it between governance and the people.

According to participant NI04:

> If you take it from service delivery to budget transparency or election, electoral integrity, even violence against journalists and civil society organisations and anti-corruption generally, I think it mostly sparked these civic tech interventions in different forms.

Participants NI05 and NI06 stated that most civic tech organisations were a reaction to ongoing corruption.

Convergence of technology, international agendas, Nigerian civil society, and activist movements
According to NI08:

> The history of Nigeria is filled with civic actors and activists driving governance. So, it is only natural that technology makes their work easier and more accessible. It's easier to use technology for advocacy that drives to see good governance. Having technology just advances that work. So many of these springing up that you're seeing of civic tech organisations are offsprings of organisations that have existed and been driving advocacy and our conversations around good governance. Technology just becomes a tool that allows that work to be amplified.

Participants NI02, NI04, NI05 and NI07 pointed to increased internet access, the closing of civic space, the emergence of tech opportunities, and the international

development and philanthropic agenda as key catalysts for the development of civic tech. In the words of NI02:

> [International] civil society and philanthropy groups have also shaped and pushed the civic tech community forward because they also focused on systematic issues such as fiscal accountability, transparency and accountability, efficiency, digital rights, and social justice over the years. And [international funders] are looking for how we apply technology to this dynamic changing world. And I think that led to these organisations backing civic tech projects.

In the words of NI04:

> They are catalysed by good donor funding and various collaborative ecosystems within the country. Those instruments of donor partnership or funding the issues themselves demand the need for civic technology; for instance, a country that has some 734 local governments and 36 states and billions of dollars annually you spend to solve challenges of infrastructure or other development needs, and you don't see the results. So those issues, you automatically drive or call for some kind of civic technology intervention where donor funding comes in and funds it. How do you reach a country of 200 million people? How do you get citizens to use these tools if you don't have funding or the financing drive to do it, especially where you are combating government propaganda and conducting some authoritarian or intolerant side of government.

According to NI05:

> We have a growing generation who are born into the internet, unlike my generation who were born before the spread of the internet. There has been suppression of information in Nigeria because of the oppression by the military guys in governance. So there was a generation who found it difficult to express themselves because of the fear of brutality. But now there's that explosion of a generation who are tech savvy, who understand the internet and how to easily engage more and need information at the tip of their fingers. We wanted them to get interested in governance, social accountability, and fighting corruption. We have been forced again to create those tools for them to engage easily.

Nigerian civic tech's contributions to improved governance

Several participants argued that the work of initiatives and organisations such as Tracka, Udeme, Budeshi, and Dataphyte had collectively strengthened the work of the Independent Corrupt Practices Commission on fighting corruption within the budget and procurement ecosystem. Participant NI08 stated that the government was now more proactively sharing procurement data through e-government

initiatives. Participants believed their work had been influential in ensuring that the government shares accurate and necessary data. A BudgIT Foundation report (2020) points to notable shifts towards government open data. NI08 stated that while the government had initially been unresponsive to civic tech efforts (due to rigid government structures and endemic corruption), state entities were beginning to take on issues such as opening up public data and steps to improve the International Budget Partnership (IBP) scores. (The IBP ranks over 120 countries based on the extent of openness and accountability in their national budget processes.)

Participants NI03, NI04, NI07, and NI08 stated that the civic tech community had had notable success in influencing government to improve electoral systems. NI08 pointed out that, for the 2023 elections, the Independent National Electoral Commission (INEC) had established a system enabling it to publish election results online in real-time. NI08 attributed this INEC provision to, in part, the work of civic tech organisations in creating platforms and advocating for free and fair elections. Participants pointed to the work of Enough is Enough, GoVote, and YvoteNaija, which were engaged in advocacy, encouraging and enabling citizens to register to vote and participate in the elections, educating citizens about their electoral rights and responsibilities, and encouraging INEC to review electoral policies to ensure inclusivity.

NI07 explained that civic tech had significantly increased the chances and channels for citizens to ask politicians questions. Previously, government and public officials would relay what they had done regarding governance without providing any evidence, and citizens had no channels or basis for measuring or questioning government statements. The Tracka civic tech initiative was enabling citizens to monitor the implementation of government projects and to give feedback on these projects, to ensure service delivery in their communities. Participants also said that the work of civic tech organisations has encouraged better behaviour in parliamentarians.

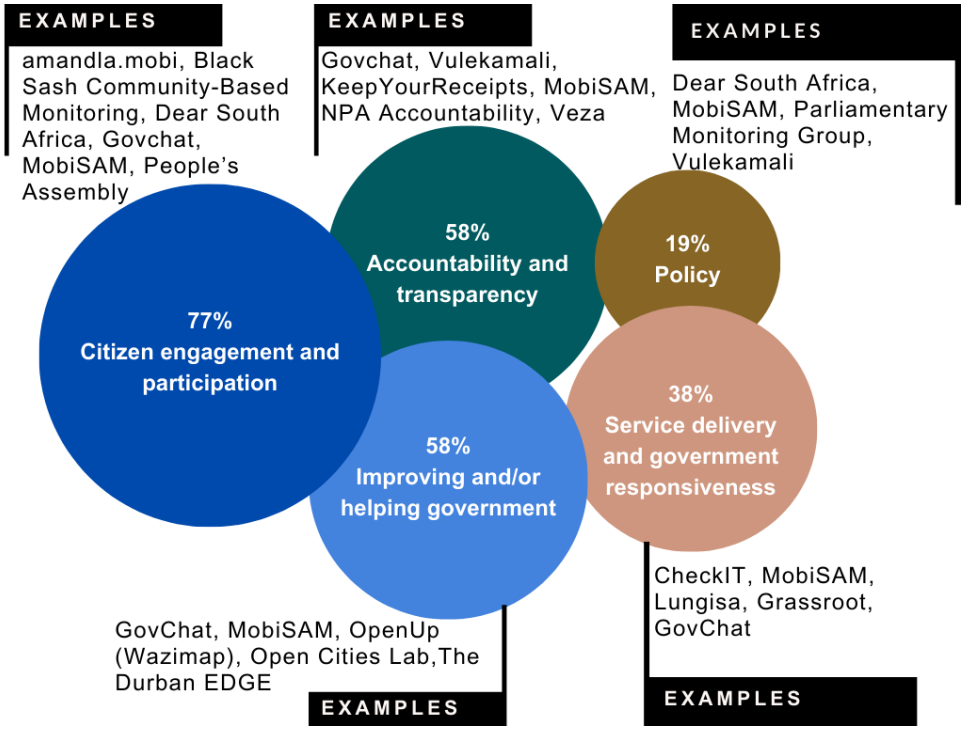
However, there was consensus that while there was a noticeable pattern of Nigerian civic tech having a positive influence on government, there was at the same time a lack of acknowledgement of this reality from the government. Nevertheless, several participants indicated that there had been recent signs of a slow but significant shift, with government entities now becoming more interested in collaborating with civic tech actors. For example, civic tech organisations Dataphyte and BudgIT were now partnering with government departments. BudgIT had connected the Kano, Lagos, Anambra, and Kogi States to the Open Budget System Portal, and BudgIT was providing technical support to all 36 Nigerian states' finance and budget directors on the use of citizens' budgets, through the States Fiscal Transparency, Accountability and Sustainability (SFTAS) project (BudgIT Foundation, 2020). It was also said that some Nigerian civic tech organisations were providing training and upskilling to civil servants.

South African civic tech and governance

Focus areas

Analysis of the 26 identified South African civic tech organisations' descriptions, missions, and vision statements found that the foci of their work could be grouped into the same five areas (Figure 8) as those identified in the work of the Nigerian initiatives—citizen engagement and participation (77% of initiatives); accountability and transparency (58%); improving and/or helping government (58%); service delivery and government responsiveness (38%); and policy (19%). As discussed below in section 6 ("Analysis and conclusion"), these percentages are largely similar to those found in Nigeria, with the exception of the percentage for the improving and/or helping government focus area—where the South African percentage seen here (58%) is significantly higher than the 15% Nigerian percentage seen above. (It should, of course, be noted that these percentages are based on my qualitative interpretation of the content available in the African Civic Tech Atlas database on the 26 selected initiatives in each country, and thus the percentages represent qualitative interpretations of tendencies rather than precise quantitative measures.)

Figure 8: Governance foci of the 26 South African civic tech organisations



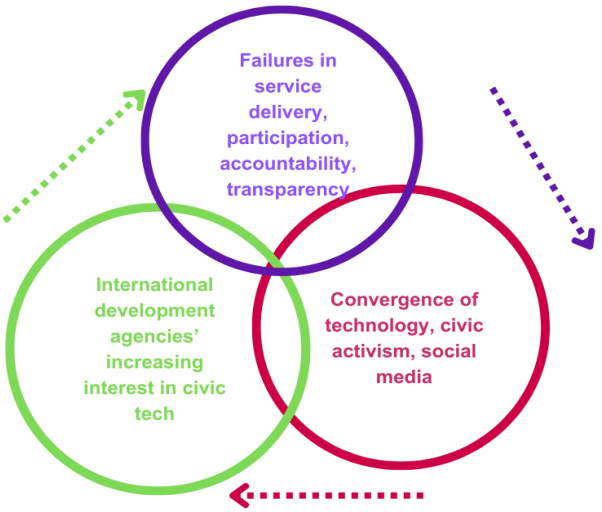
Note. Source: Researcher, based on data in African Civic Tech Atlas database.

Drivers of South African civic tech's work on governance matters

In the South African participants' interview responses, the drivers of the country's civic tech organisations' work on governance matters fell into three interconnected core themes (see Figure 9 below):

- failures in service delivery, participation, accountability and transparency;
- convergence of technology, civic activism, social media; and
- international development agencies' increasing interest in civic tech.

Figure 9: Drivers of South African civic tech's work on governance matters



Note. Source: Researcher.

Failures in service delivery, participation, accountability and transparency

The consistent thread across the interviews with SA01, SA04, SA05, SA06, and SA07 was that most governance-focused civic tech organisations were driven by a desire to address poor service delivery, lack of government transparency and accountability, access to data, and failure to include and engage citizens in decision-making. According to SA04:

> The main issue is reach; it has always been a problem. For municipalities, the biggest issue was whenever they were communicating with their residents, they would use pamphlets which sometimes were distributed, and some notices would be put at community halls; nobody goes to a community hall unless there is a reason to go there. It seemed like the people that benefited from the calls to action by municipalities were usually politically affiliated because if you are politically affiliated, you or your representative are aware of the announcements.

In the words of SA06:

> I think persistent challenges relating to poor service delivery issues mean that civic tech organisations play a pivotal role in connecting the public with their representatives so that they can express their concerns with their MPs and other representatives in their constituencies. The tools that we make available, and the data, help them in advocacy efforts. I think the bottom line is persistent challenges on service delivery issues. I think the lack of transparency has led to the development of our tools. Part of what drove some of the tools we've developed was to broaden the space around public participation, get a wider view, encourage the youth to participate, etc.

Convergence of technology, civic activism, social media
According to SA07:

> I do think that because of the political environment and the civil service culture here, a lot of organisations like ours emerge from, but also thrive on the fact that there are a lot of people with development and technology training who want to do good. I think [developing technologies for social good] fuels the South African civic tech ecosystem here.

International development agencies' increasing interest in civic tech
Some participants suggested that the international development agenda had influenced the development of civic tech. They believed that because the development agencies had discovered the use of civic tech interventions in combatting corruption and building transparency, accountability, civic empowerment, and governance elements, there has been an increase in funding opportunities. At the same time, global success stories of civic tech were said to be inspiring local South African organisations. In the words of SA02:

> I think people here started to get excited about using their skills and building technology for something good that connected them to international funding and then development agenda, which opened the pipeline for funding.

South African civic tech's contributions to governance
Participant SA01 was of the view that evidence on corruption collected by the civic tech and civil society community had significantly motivated government to build platforms such as Vulekamali,[1] the South African National Treasury's online budget data site. While the platform was the result of a partnership between the

1 https://vulekamali.gov.za

National Treasury and the Imali Yethu alliance of civil society organisations, the platform was developed by OpenUp. In this case, OpenUp was acting as a service provider for the government and Imali Yethu. According to SA04, the open-source Vulekamali platform had become a powerful accountability mechanism for the national government:

> The main issue is that when people need to make their case, they do not know that budgets are available and can be questioned. Creating these civic tech platforms gives the person the power to argue for improving their lives. It helps a lot with accountability. But it also helps a lot to look like targeted service delivery.

Also, some local governments, such as Makhanda Municipality and the City of Cape Town, had begun to implement and/or replicate tools and systems within government that had initially been introduced by the civic tech community. In Makhanda, collaboration between Rhodes University, local CSOs, community members, and the municipality resulted in MobiSAM,[2] a platform for citizens to log service delivery issues with the municipality. In the case of the City of Cape Town, it was pointed out that the city had, in an effort to increase accountability and transparency, and public engagement, established an Open Data Portal[3] to release public data in numerous topical areas. According to participant SA07:

> the city has been heavily influenced by the civic tech community, and open data work in particular, and how [civic tech actors] implement some of their work.

SA07 pointed to civic tech's success in getting municipalities to institutionalise public engagement with municipal Integrated Development Plans (IDPs). As a result, municipalities such as the City of Johannesburg and the Cape Agulhas Local Municipality had established new methods—including social media, government portals, and emails—that were succeeding in prompting citizens to engage their municipality on IDP matters. Participant SA07 also highlighted the value being provided to South African government entities by civic tech interventions focused on service delivery. For example, MobiSAM, Lungisa,[4] and GovChat[5] were all enabling citizens to report service delivery issues and connect with national, provincial, and local government representatives. In a similar vein, SA04 pointed to the success of civic tech entity Grassroot in enabling community organising on issues such as power outages and the maintenance of public toilets.

2 https://mobisam.net
3 https://www.capetown.gov.za/City-Connect/All-City-online-services/open-data-portal
4 https://civictech.africa/initiative/lungisa
5 https://www.govchat.org

Participant SA06 pointed to how civic tech was improving the conduct of parliamentarians. The People's Assembly[6] and Parliamentary Monitoring Group (PMG)[7] platforms were providing citizens with digital tools to track legislative proceedings, track the movements of elected representatives, and participate directly when public inputs were requested.

In addition, government entities were said to be collaborating with civic tech organisations in order to create tools and to increase government employees' digital capacities. For instance, the government had collaborated with Open Cities Lab, MobiSAM, and OpenUp. In the latter example, OpenUp partnered with the national Department of Cooperative Governance (CoGTA) to create the DCOG Monitoring Tool (OpenUp, 2022). The tool was a digital form management system developed to help local and district municipalities improve their form management and provide more transparent oversight of these processes. Previously, data had been collected manually, leading to slow responses, incorrect information, and incomplete forms, thus contributing to inefficiencies. The tool provided multi-tier reporting, which reduced the risks of inconsistency and inaccurate reporting (OpenUp, 2022).

Participant SA03 noted a significant shift in the mindset of many South African government entities, towards a "sense of collaboration in the development of technology for social good by the government":

> While traditionally there is an antagonistic relationship between government and civil society in the governance space, some civic tech organisations have managed to build relationships with government. This is due to government's […] limited technical capacity. Therefore, they [government] have engaged civil society [civic tech organisations] in the production of technology [that] is fundamentally different.

Participants highlighted the importance of civic tech entities working in collaboration with government. In the words of SA01, "working with government enables civic tech actors to determine what government is willing and able to give to citizens and how civic tech could help them hold government accountable".

6 https://www.pa.org.za
7 https://pmg.org.za

6. Analysis and conclusion

As seen in the findings presented above, several similarities were found between the work of civic tech organisations in Nigeria and South Africa. However, the findings also revealed some significant differences.

Governance foci of civic tech initiatives

We saw above, in Figures 6 and 8, that the elements of governance being focused on by the 26 selected civic tech entities in each country were essentially the same. In both countries, I found evidence of the following five foci: citizen engagement and participation; accountability and transparency; service delivery and government responsiveness; improving and/or helping government; and policy. As seen in comparative Table 1 below, there was only one focus area where a significant difference in focus was found: improving and/or helping government, which only 15% of the studied entities were found to be focused on in Nigeria, compared to 58% in South Africa. (As noted above, these percentages represent tendencies based on my qualitative analysis of the content in the civic tech database, not precise quantitative measures.)

Table 1: Governances focus areas: Comparison

Governance focus area	% of Nigerian civic tech initiatives (n=26) with this focus	% of South African civic tech initiatives (n=26) with this focus
citizen engagement and participation	85%	77%
accountability and transparency	58%	58%
service delivery and government responsiveness	35%	38%
improving and/or helping government	**15%**	**58%**
policy	26%	19%

The South African civic tech initiatives' stronger focus on improving and/or helping government was also seen in the interview responses set out above. Several of the South African interview participants pointed to a spirit of collaboration between the civic tech movement and government entities in that country. These collaborative efforts included both internal government systems and government-to-citizen initiatives such as GovChat (which began as a civic tech project but was eventually adopted by the government), Vulekamali, MobiSAM, and Municipal Money. The nature of the collaboration on these tools had varied. For example, Vulekamali and Municipal Money were government tools developed and maintained by civic tech actor OpenUp. In these and other instances, a civic tech organisation was contracted as a service provider to create internal tools for government departments, and to train

government employees in the necessary technical skills.

In contrast, the Nigerian participants indicated a slower pace of collaboration between civic tech actors and government institutions. However, as we saw above, some participants had noted a recent shift in some government departments, leading to organisations such as Dataphyte and BudgIT partnering with government departments. BudgIT was, for example, collaborating with numerous state governments on the Open Budget System Portal and the SFTAS project (BudgIT Foundation, 2020). And some Nigerian civic tech organisations were providing training to upskill civil servants.

Drivers of civic tech work on governance matters

As seen above in Figures 7 and 9, which are compared in Table 2 below, numerous overlaps, and no substantive differences, were found in the thematic analysis of the interview data on drivers of civic tech work on governance matters in the two countries.

Table 2: Drivers of civic tech work on governance matters: Comparison

Nigeria	South Africa
• inefficient systems and structures • lack of transparency, accountability, opportunities for engagement • convergence of technology, international agendas, Nigerian civil society and activist movements	• failures in service delivery, participation, accountability, transparency • convergence of technology, civic activism, social media • international development agencies' increasing interest in civic tech

Civic tech contributions to improved government functions

We saw above, in the findings from the thematic analysis of the interview data, that there was a stronger sense among the South African participants than among their Nigerian counterparts that the work of civic tech was managing to directly improve the work of government institutions. The Nigerian participants tended to emphasise indirect influence on the activities of government departments, with direct collaborations still relatively rare (though increasing) between civic tech and government entities. The South African civic tech actors identified a spirit of trust and collaboration between government and civic tech, as exemplified by numerous joint implementations of projects that were now fully integrated into government functions.

Conclusion: Civic tech and social accountability

As stated in section 3 above, this study was to a great extent guided and framed by the instrumental approach to social accountability as set out by Brinkerhoff and Wetterberg (2015), who frame social accountability activities as "increasing the effectiveness of service delivery, improving the quality of governance and democracy, and increasing citizen empowerment" (Brinkerhoff & Wetterberg, 2015, p. 275). As seen in the findings, both the Nigerian and South African civic tech movements aspire to be, and are to a great extent succeeding in being, instrumental agents of social accountability in their respective countries.

Acknowledgements

This article draws on data collected during the author's Master's studies at the LINK Centre, University of the Witwatersrand, Johannesburg. The author is grateful for the supervision of Mark Burke and Dr. Lucienne Abrahams.

Funding

This study was not supported by any funder.

Data availability

The ethical clearance granted was on the basis that interview data would be accessible only to the researcher. This data can only be made available to other researchers subject to secondary ethical clearance, and based on a written request to the author at zisengwe.melissa@gmail.com. However, the African Civic Tech Atlas database is publicly available on the Civic Tech Innovation Network (CTIN) website, https://civictech.africa

AI declaration

AI was not used in the writing of this article.

Competing interests

The author was previously employed by CTIN, and curated the African Civic Tech Atlas database, and thus was professionally associated with some of the interviewees.

References

African Union (AU). (2024, April 12). *The African Union launches the second edition of the AU Civic Tech Fund* [Press release]. https://au.int/en/pressreleases/20240412/african-union-launches-second-edition-au-civic-tech-fund

Almén, O., & Burell, M. (2018). Social accountability as social movement outcome: Protests in a Chinese city. *Social Movement Studies*, *17*(6), 716–735. https://doi.org/10.1080/14742837.2018.1521716

Aragón, P., Garcia, A., Le Dantec, C. A., Flores-Saviaga, C., & Saldivar, J. (2020). Civic technologies: Research, practice and open challenges. In *CSCW '20 companion: Companion publication of the 2020 Conference on Computer Supported Cooperative Work and Social Computing* (pp. 537–545). https://doi.org/10.1145/3406865.3430888

Asongu, S. A., & Nwachukwu, J. C. (2016). The role of governance in mobile phones for inclusive human development in Sub-Saharan Africa. *Technovation*, *55–56*, 1–13. https://doi.org/10.1016/j.technovation.2016.04.002

Bjerde, A., & Demirgüç-Kunt, A. (2021, March 30). Digitalization and data can vastly improve public service delivery for citizens. *World Bank Blogs*. https://blogs.worldbank.org/europeandcentralasia/digitalization-and-data-can-vastly-improve-public-service-delivery-citizens?deliveryName=FCP_19_DM99928

Bosch, T., & Roberts, T. (2021). South Africa digital rights landscape report. In T. Roberts (Ed.), *Digital rights in closing civic space: Lessons from ten African countries*. Institute of Development Studies. https://doi.org/10.19088/ids.2021.010

Brinkerhoff, D. W., & Wetterberg, A. (2015). Gauging the effects of social accountability on services, governance, and citizen empowerment. *Public Administration Review*, *76*(2), 274–286. https://doi.org/10.1111/puar.12399

Brummel, L. (2021). Social accountability between consensus and confrontation: Developing a theoretical framework for societal accountability relationships of public sector organizations. *Administration & Society*, *53*(7), 1046–1077. https://doi.org/10.1177/0095399720988529

BudgIT Foundation. (2020). *Annual report 2020: Impact in unprecedented times*. https://budgit.org/wp-content/uploads/2022/09/2020_Annual_Report.pdf

Chatwin, M., & Mayne, J. (2020). Improving monitoring and evaluation in the civic tech ecosystem. *JeDEM – eJournal of eDemocracy and Open Government*, *12*(2), 216–241. https://doi.org/10.29379/jedem.v12i2.598

Civic Tech Innovation Network (CTIN). (n.d.). African Civic Tech Atlas. https://civictech.africa/databases

CTIN. (2024, May 2). African Union Civic Tech Fund (AUCTF) 2.0. https://civictech.africa/auctf-2-2

Couve, P., Gbetoglo, E., Grange, J., Kalonji, C., Mukuku, F., Sbouai, S., Gandigbe, L., Osé Coliko, A., Orembo, E., Gichanga, M., & Kasongo, A. (2018). *Civic tech in Africa: People and technology dynamising our democracies*. CFi Media Development. https://cfi.fr/en/news/civic-tech-africa-people-and-technology-dynamising-our-democracies

de Rochegonde, A. (2020, November 4). *Des civic tech en Afrique contre la colère et l'impuissance*. *Stratégies*. https://www.strategies.fr/actualites/medias/4052143W/des-civic-tech-en-afrique-contre-la-colere-et-l-impuissance.html

Duberry, J. (2022). AI and civic tech: Engaging citizens in decision-making processes but not without risks. In *Artificial intelligence and democracy: Risks and promises of AI-mediated citizen–government relations* (pp. 195–216). https://doi.org/10.4337/9781788977319

Gilman, H. R. (2017). Civic tech for urban collaborative governance. *PS: Political Science & Politics*, *50*(3), 744–750. https://doi.org/10.1017/s1049096517000531

Grandvoinnet, H., Aslam, G., & Raha, S. (2015). *Opening the black box: The contextual drivers of social accountability*. World Bank. https://doi.org/10.1596/978-1-4648-0481-6

Gritsenko, D., & Indukaev, A. (2021). Digitalising city governance in Russia: The case of the "Active Citizen" platform. *Europe–Asia Studies*, *73*(6), 1102–1124. https://doi.org/10.1080/09668136.2021.1946013

Kaur, N., & Sitlhou, L. (2017). Governance of development assistance: Issues and challenges. *Indian Journal of Public Administration*, *63*(2), 252–264. https://doi.org/10.1177/0019556117699731

Keping, Y. (2017). Governance and good governance: A new framework for political analysis. *Fudan Journal of the Humanities and Social Sciences*, *11*(1), 1–8. https://doi.org/10.1007/s40647-017-0197-4

Khene, C., Siebörger, I., Thinyane, M., & Simuja, C. (2021). Power participation in digital citizen engagement in South African local government: The case of MOBISAM. ArXiv.org. https://doi.org/10.48550/arXiv.2108.09798

Knutas, A., Siemon, D., Tylosky, N., & Maccani, G. (2023). Contradicting motivations in civic tech software development: Analysis of a grassroots project. ArXiv.org. https://doi.org/10.48550/arxiv.2302.03469

Makara, S. (2018). Decentralisation and good governance in Africa: A critical review. *African Journal of Political Science and International Relations*, *12*(2), 22–32. https://doi.org/10.5897/AJPSIR2016.0973

Mbugua, M. (2018). Mind the gap: Bridging the divide between tech hubs and civic tech. Making All Voices Count. https://www.makingallvoicescount.org/blog/mind-gap-bridging-divide-tech-hubs-civic-tech

McGee, R., Edwards, D., Anderson, C., Hudson, H., & Feruglio, F. (2018). *Appropriating technology for accountability: Messages from Making All Voices Count*. Making All Voices Count. https://www.makingallvoicescount.org/publication/appropriating-technology-accountability-messages-making-voices-count-2

McNutt, J. G., Justice, J. B., Melitski, J. M., Ahn, M. J., Siddiqui, S. R., Carter, D. T., & Kline, A. D. (2016). The diffusion of civic technology and open government in the United States. *Information Polity*, *21*(2), 153–170. https://doi.org/10.3233/ip-160385

Network Impact. (2015). *Assessing civic tech: Case studies and resources for tracking outcomes*. Knight Foundation. https://knightfoundation.org/reports/assessing-civic-tech-case-studies-and-resources-tr/

Nyaranga, M. S., Hao, C., & Hongo, D. O. (2019). Strategies of integrating public participation in governance for sustainable development in Kenya. *Public Policy and Administration Research*, *9*(7), 56–63. https://iiste.org/Journals/index.php/PPAR/article/view/48764

OpenUp. (2022). *Annual report: March 2021-February 2022*. https://openup.org.za/annual-report/openup-annual-report-2021-2022

Pade-Khene, C., Thinyane, H., & Machiri, M. (2017, June 13). Building foundations before technology: An operation model for digital citizen engagement in resource constrained contexts. In *17th European Conference on Digital Government (ECDG 2017)*. http://collections.unu.edu/view/UNU:6206

Poblet, M., & Plaza, E. (2017). Democracy models and civic technologies: Tensions, trilemmas, and trade-offs. ArXiv.org. https://doi.org/10.48550/arXiv.1705.09015

Roberts, T. (Ed.). (2021). *Digital rights in closing civic space: Lessons from ten African countries*. Institute of Development Studies. https://doi.org/10.19088/IDS.2021.003

Rotich, J. (2017). Ushahidi: Empowering citizens through crowdsourcing and digital data collection. *Field Actions Science Reports. The Journal of Field Actions*, *Special Issue 16*, 36–38. https://journals.openedition.org/factsreports/4316

Rumbul, R. (2015). *Who benefits from civic technology?* mySociety. https://research.mysociety.org/html/who-benefits/#start

Rumbul, R., Moulder, G., & Parsons, A. (2018). *Parliament and the people: How digital technologies are shaping democratic information flow in Sub-Saharan Africa*. mySociety. https://research.mysociety.org/html/parliament-and-the-people/#top

Ruppen, D., & Brugger, F. (2022). "I will sample until things get better – or until I die." Potential and limits of citizen science to promote social accountability for environmental pollution. *World Development*, *157*, 105952. https://doi.org/10.1016/j.worlddev.2022.105952

Skaržauskienė, A., & Mačiulienė, M. (2020). Mapping international civic technologies platforms. *Informatics*, *7*(4), 1–13. https://doi.org/10.3390/informatics7040046

Stempeck, M. (2023). *Civic tech field guide*. https://civictech.guide

Sun, Y., & Yan, W. (2020). The power of data from the Global South: Environmental civic tech and data activism in China. *International Journal of Communication*, *14*(0), 2144–2162. https://ijoc.org/index.php/ijoc/article/view/13440

Waddington, H., Stevenson, J., Sonnenfeld, A., & Gaarder, M. (2018). Protocol: Participation, inclusion, transparency and accountability (PITA) to improve public services in low- and middle-income countries: A systematic review. *Campbell Systematic Reviews*, *14*(1), 1–69. https://doi.org/10.1002/cl2.205

Wakabi, W., & Grönlund, Å. (2015). Citizen-to-citizen vs. citizen-to-government eparticipation in Uganda: Implications for research and practice. In *2015 IFIP International Federation for Information Processing* (pp. 95–107). https://doi.org/10.1007/978-3-319-22500-5_8

Yimer, M. (2015). The role of ICT for good governance and agricultural development in Ethiopia: Local evidence from Southern Ethiopia. *International Journal of Political Science and Development*, *3*(1), 30–39. https://doi.org/10.14662/IJPSD2015.001

Yoshida, M., & Thammetar, T. (2021). Education between govtech and civic tech. *International Journal of Emerging Technologies in Learning (IJET)*, *16*(4), 52–68. https://doi.org/10.3991/ijet.v16i04.18769

Zhang, W., Lim, G., Perrault, S. T., & Wang, C. (2022). A review of research on civic technology: Definitions, theories, history and insights. ArXiv.org. https://doi.org/10.48550/arxiv.2204.11461

Appendix: Interview guide

1. How are civic tech initiatives addressing governance issues?

- Civic tech has been steadily growing in Africa since Ushahidi. What do you think has been its effect on governance since then?
- In what ways do you think civic tech has enhanced/influenced governance? / How is governance benefitting from civic tech in your country?
- In terms of governance, what would you say are the top four issues you have seen Nigerian/South African initiatives tackling?
- Do you think civic tech initiatives are a result of governance issues? If yes, could you offer some examples?
- In what ways has your organisation (and others) enhanced governance in our country, e.g., what has changed in governance since your organisation and similar organisations started?
- What would you say is the impact of civic tech on governance in Nigeria/South Africa?

2. To what extent have governance issues in Nigeria/South Africa led to the emergence of civic tech initiatives?

- From your experience, what factors have led to the creation of civic tech organisations, especially those focused on governance?
- What are the key social, economic and technological factors that influence the development of civic tech in your country and how do they affect civic tech?
- To what extent is the creation of civic tech in Nigeria/South Africa tech-driven, funding driven and/or governance (solutions) driven?
- What technologies have you used and how/for what purposes or objectives?
- Do you think factors such as entrepreneurship, increased digital literacy and access, issues with public services, etc., have contributed to the creation of civic tech?

3. What are the key challenges affecting the governance-focused civic tech initiatives in Nigeria/South Africa?

- In detail, please share any specific challenges civic tech initiatives are facing in your country.
- How are the issues/factors impeding the success/uptake of civic tech in Nigeria/South Africa in the governance sector?
- What policy issues do you come across in the space that are particularly challenging? (Do policies in your country enable or constrain the development and adoption of civic tech?)