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EXPLORING HOW CIVIC TECHNOLOGIES ARE CONTRIBUTING TO GOVERNANCE IN NIGERIA AND SOUTH AFRICA

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A research report submitted to the Faculty of Humanities, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Master of Arts in the field of ICT Policy and Regulation (MA ICTPR).

Supervisors: Dr Lucienne Abrahams and Mark Burke

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ABSTRACT

This research paper explores the African civic technology ('civic tech') ecosystem, with specific reference to its contribution to governance in Nigeria and South Africa. The research was informed by a qualitative methodology that used a comparative descriptive and explanatory case studies approach. Drawing on the African civic tech database and expert interviews, the study examined the drivers that influence the development of civic tech, its contribution to governance, and approaches to addressing challenges in the civic tech ecosystems in the two case study countries.

The paper finds that in both countries, civic tech is driven by many variables, such as the proliferation of digital technologies, failing government systems, and international agendas. However, the foundations of most civic tech organisations are linked to governance issues experienced by both countries. Therefore, civic tech is often a result of the increased demand to strengthen the voice and capacity of citizens to engage and participate in governance issues that affect them directly.

The findings suggest that civic tech influences governance in various areas, including indirectly and directly influencing innovation in government departments, opening up data, and leading to more transparency about government activities and governance challenges. The study found that civic tech has significantly transformed how citizens participate in decision-making and engage with the government, accentuating citizens' voices on issues that affect them. The study concluded that civic tech has emerged as a social accountability mechanism as it plays a fundamental role in creating channels for citizens and other non-governmental actors to participate in governance.

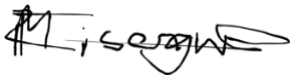
However, while civic tech is improving governance, the research concluded that it remains challenging to measure its influence due to how civic tech is constructed, adopted, and used. Consequently, there is an urgent need for the civic tech field to establish and streamline institutional monitoring and evaluation. This would enable the field to combine efforts and create a synergy where civic tech impact measurement is concerned.

DECLARATION

I, Melissa Tsungai Zisengwe, student number: 2261364, am a student registered for the Master of Arts in the field of ICT Policy and Regulation in the year 2023.

I hereby declare the following:

- I am aware that plagiarism (the use of someone else's work without their permission and / or without acknowledging the original source) is wrong.
- I confirm that the work submitted for assessment for the above course is my own unaided work except where I have explicitly indicated otherwise.
- I have followed the required conventions in referencing the thoughts and ideas of others.
- I understand that the University of the Witwatersrand may take disciplinary action against me if there is a belief that this is not my own unaided work or that I have failed to acknowledge the source of the ideas or words in my writing.

Signature: 

Date: 15 September 2023

DEDICATION

To the fond memory of my late aunt, Sarah Zisengwe. The seeds of resilience and the importance of education you planted continue to guide and nourish me. You are missed.

ACKNOWLEDGEMENTS

Firstly, I express appreciation to my supervisors, Dr Luci Abrahams, and Mark Burke; this research would not have been possible without you challenging me and providing much-needed feedback and guidance. I also wish to thank the civic tech community, particularly the civic actors who participated in the research interviews. Thank you for sharing your expertise and time with me; your excitement and willingness to share your experiences made this research a fulfilling experience. Finally, I would like to thank my family for supporting me and encouraging me to further my studies; in particular, I would like to express special heartfelt gratitude to my partner Ruan de Beer-Zisengwe; thank you for your support throughout this research process and most importantly, for keeping me fed.

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List of Acronyms

Abbreviation	Meaning
APRM	African Peer Review Mechanism
AST	Adaptive Structuration Theory
ccHub	Co-Creation Hub
CfA	Code for Africa
CfA	Code for All
COGTA	Department of Cooperative Governance and Traditional Affairs
CPI	Corruption Perceptions Index
CSO	civil society organisation
CTFG	Civic Tech Field Guide
CTIN	Civic Tech Innovation Network
DFID	Department for International Development
EiE	Enough is Enough
EU	European Union
IBP	International Budget Partnership
ICPC	Independent Corrupt Practices Commission
IDP	Integrated Development Plan
INEC	Independent National Electoral Commission
MPs	Members of Parliament
NGO	Non-Governmental organisation
NPO	Non-Profit Organisation
NITDA	National Information Technology Development Agency
OECD	Organisation for Economic Co-operation and Development
PA	People’s Assembly
PMG	Parliamentary Monitoring Group
PPDC	Public and Private Development Centre
PTCIJ	Premium Times Centre for Investigative Journalism
PwC	PricewaterhouseCoopers
SFTAS	State Fiscal Transparency, Accountability and Sustainability
SSA	sub-Saharan Africa
Stats SA	Statistics South Africa
USSD	Unstructured Supplementary Service Data

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Chapter 1: The intersection of governance and civic technology

Civic technology ('civic tech') is a practice emerging from a networked civic community adopting digital and other approaches to improve governance (Gilman, 2017; Rumbul et al., 2018). The civic tech community has grown rapidly in varying contexts, with over 7,500 initiatives documented in the international Civic Tech Field Guide (Stempeck, 2023). The African civic tech database documents over 240 initiatives from 30 African countries (CTIN, n,d). This database is collated and hosted by the Civic Tech Innovation Network (CTIN) and represents a key resource on African civic tech. It will be used in this study to map and build a profile of African civic tech organisations and initiatives. Digital technology has allowed African civic tech actors to participate in governance by enabling and promoting citizen engagement and participation for accountable and transparent governance.

This research examined civic tech's contribution to governance by exploring the intersection of civic tech and governance and assessing how it is used to enhance governance. The study examined the drivers that influence the development of civic tech, its contribution to governance, and approaches to addressing challenges in civic tech ecosystems in the two case study countries, Nigeria, and South Africa. This research was informed by a qualitative methodology that used a comparative descriptive and explanatory case studies approach, focusing on Nigeria and South Africa.

The findings suggest that civic tech influences governance in various areas, including indirectly and directly influencing innovation in government departments, opening up data, and leading to more transparency about government activities and governance challenges. The study also found that civic tech has significantly transformed how citizens participate in decision-making and engage with government, accentuating citizens' voices on issues that affect them. However, as governance challenges in Nigeria and South Africa, remain complex, it becomes clear that civic tech is not a panacea for governance challenges, as they are often linked to systematic issues such as political systems and

poverty. The research concluded that while civic tech is one of the remedies to governance challenges, it cannot effect change on its own; it must be adopted strategically and combined with capacity-building and process improvements to help communities learn to engage government and to help them learn to use technology effectively.

1.1 Contextualising civic tech and governance

The evolution, adoption, and proliferation of digital technologies have influenced governance in various ways. Importantly, digital technology has allowed non-governmental actors and individuals to participate in governance arrangements using technologies, particularly in citizen engagement and participation, accountability and transparency. Over the last 20 years, a new community of active organisations and individuals, commonly known as the civic tech community, has emerged. This community is influenced by open governance, information freedom advocacy networks, and the shifts in democratic governance fostered by digital technology (Chatwin & Mayne, 2020; Rumbul et al, 2018; Skaržauskienė & Mačiulienė, 2020). Civic tech opens government spaces and institutions, and enables citizens to self-organise, and seeks to improve governance outcomes (Fung, 2015; McGee et al., 2018).

Digital technologies have gained momentum in Africa, affecting political discourse, and governance, and changing the relationship between governments and citizens (Rumbul et al., 2018). Since 2008, Africa has witnessed growth in non-governmental organisations (NGOs), start-ups, individuals and other stakeholders using and creating technologies to improve governance. The impact and disruption caused by these platforms and online movements, like the Arab Spring in 2010-12, demonstrated and encouraged many Africans to find creative ways to leverage digital technologies and non-technological approaches to mobilise and participate in governance and social issues (Rumbul et al., 2018). The background of this study is framed by the evolution of civic tech and its intersection with governance in the digital era in Africa, with specific reference to Nigeria and South Africa.

1.1.1 Understanding and exploring governance in the era of digitalisation

The World Bank used the phrase 'crisis in governance' for the first time in 1989 to describe the situation unfolding in Africa (Keping, 2017). Since then, the concept of governance has gained prominence due to a changing world and shifts in social theories about the world. New ideas and practices have diverted attention away from the state's central institutions, emphasising governance as a process that includes other stakeholders like civil society organisations (CSOs), international organisations, NGOs, and voluntary organisations (Bevir & Rhodes, 2016; Keping, 2017; Makara, 2018).

Governance is a system or process that includes continuous relationships, collaborations, and activities between these stakeholders to improve citizens' lives, ensuring efficient and accountable institutions that promote development, human rights, and respect for the rule of law, and 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 government to 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. The increasing interest from non-governmental actors to participate in governance is linked to the emergence of digital technology and its ability to widen participation. Roberts et al., (2022) conceptualise the intersection of digitalisation and governance as an evolutionary process moving through different stages (Figure 1 below). Stage one commences with the introduction of

digital technologies in government, followed by the use of these technologies in the digitalisation of government services; thereafter, evolving to a stage in which digital participation in governance is enabled, and finally, to a stage where governance is subjected to the digital world through powerful monopolies.

Figure 1: *Four different ways that 'digital' shapes governance*



Source: Roberts et al. (2022, p.1)

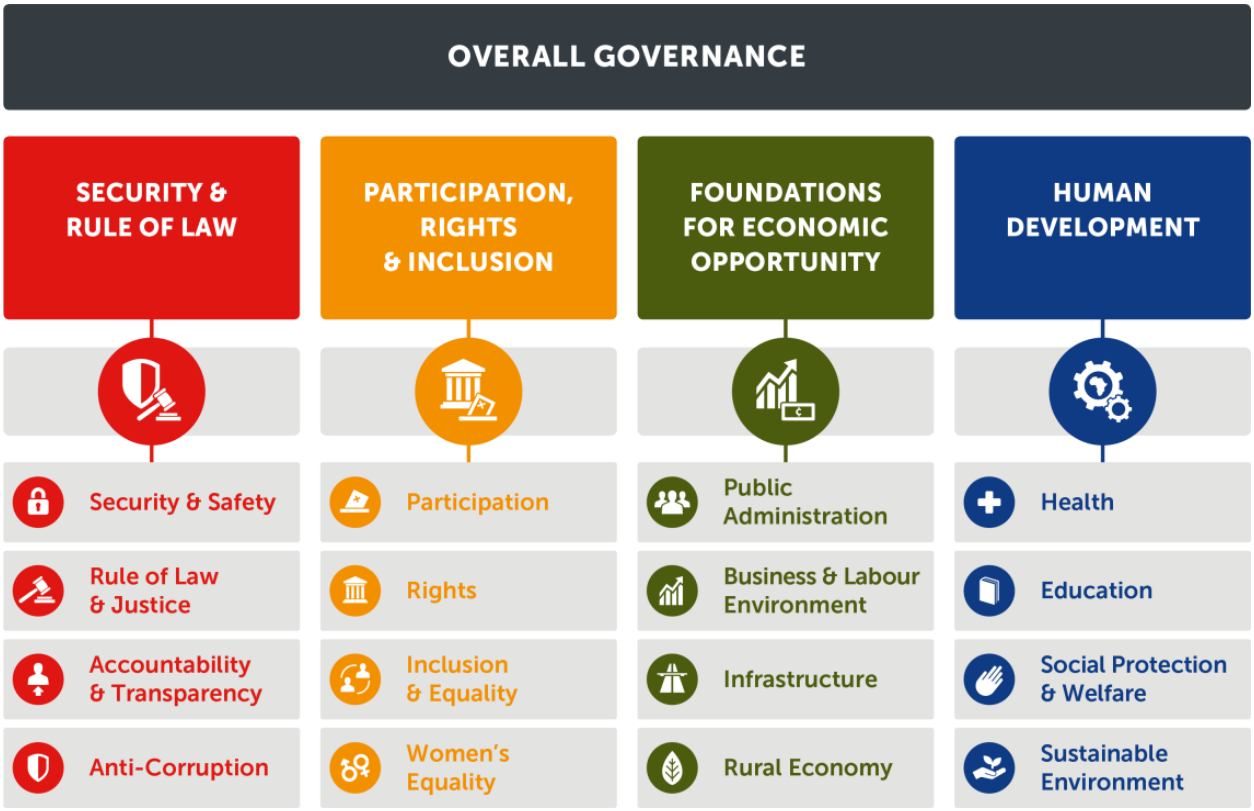
Asongu and Nwachukwu (2016) contend that better governance is achieved through digital technologies that enable social convergence for better participation and information-sharing. Governance is an extensive topic with many facets, elements, and interpretations. For this research, the focus is limited to the dimensions of citizen participation and engagement, accountability and transparency.

1.2 Understanding the governance context in Africa and the role of digital technologies

In 2015, the African Union revealed its shared 50-year development and transformation programme, “Agenda 2063: The Africa We Want” (African Union, 2015). This development vision highlights good governance, democracy, respect for human rights, justice, and the rule of law as its fundamental aspirations to transform Africa. Since the early 1990s, many African countries, including Ghana, Kenya, Nigeria, and South Africa, have been advancing and improving efforts in governance through the creation and adoption of new democratic constitutions emphasising the separation of powers with checks and balances to transform the countries’ political systems (Mbaku, 2020).

At the same time, many parts of Africa are still facing considerable governance challenges. Many nations need to implement reforms that dissuade dictatorship, corruption, and economic decline (Mbaku, 2020). Many governance issues in many sub-Saharan (SSA) countries are that parliamentary bodies remain unclear and distanced from citizens; institutional structure and governance have historically been weak, resulting in a lack of engagement between institutions and citizens (Rumbul et al., 2018). According to the most recent Ibrahim Index of African Governance (Mo Ibrahim Foundation, 2022), overall governance performance on the continent has improved in four key areas over the last decade (Figure 2 below). However, progress has slowed in the latter half of the decade, with an alarming rate of worsening performance in security, the rule of law, participation, rights, and inclusion (Gyimah-Boadi, 2021).

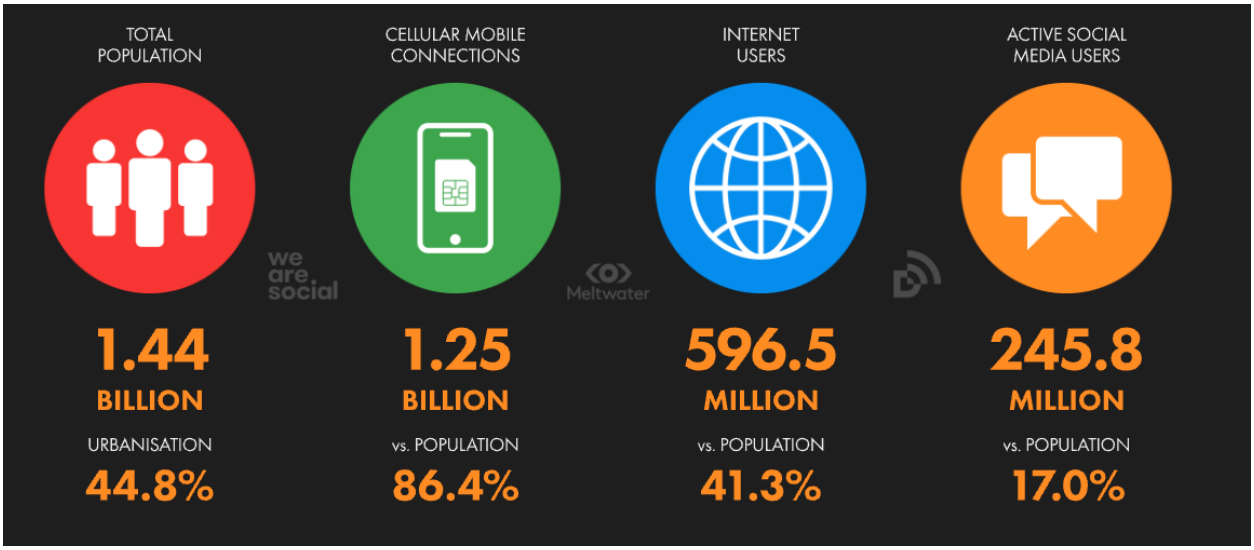
Figure 2: *Four key components of governance*



Source: Mo Ibrahim Foundation (2022)

Digital technology adoption and usage in Africa in the last two decades has been unprecedented, with at least 1.25 billion mobile connections (Figure 3 below) (Kemp, 2023). Countries like Kenya, Nigeria, and South Africa are leaders in digital technologies within the continent (Rumbul et al., 2018). These technologies play a significant role in both private and public sectors in establishing a digital African society (Heinrich-Böll-Stiftung, 2015).

Figure 3: *Adoption and use of connected devices and services in Africa*



Source: Kemp (2023)

1.2.1 Understanding the Nigerian economic, social, political, and digital technology profile

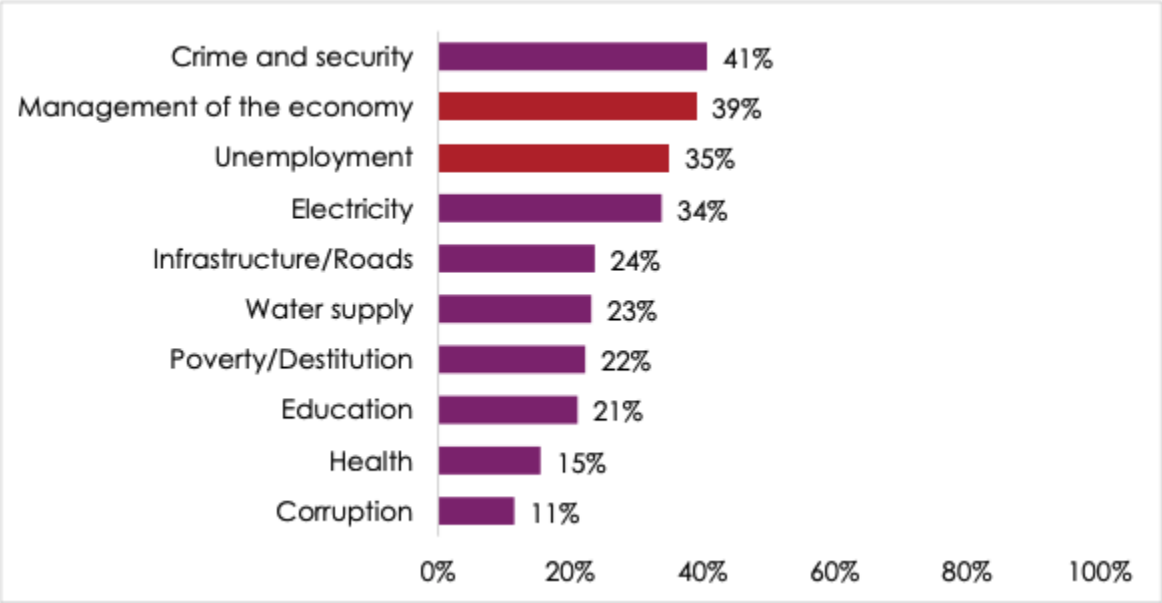
Nigeria is Africa's largest economy and its most populous country. With 36 autonomous states, the country is multi-ethnic and culturally diverse (World Bank, 2022a). Recent reports estimate Nigeria's population is around 216 million (Olatunji & Adejoro, 2022; Sasu, 2022), which is expected to double by 2030 (World Bank, 2022a).

Nigeria gained its independence in 1960, and is one of the youngest democracies in Africa, becoming a democracy in 1999 (Adekola & Olumide, 2019). Nigeria has undergone several stages that have adversely affected development and governance, from traditional leadership to colonial government, independence, military dictatorship, and military transformation to civilian government (Osi, 2003, in Obilor et al., 2018). The transition from an authoritarian to a democratic government in 1999 highlighted a positive outlook for the country, as the previous administration was plagued with mismanagement, poverty, infrastructure decline, and corruption (Ahimie, 2016; Surajudeen, 2015). However, the country continues to experience significant developmental and governance challenges (Asanebi & Otoo, 2018; Fagbadebo, 2018).

Like many countries in the SSA region, corruption remains a significant barrier to transparent, accountable, and responsive governance, and impedes citizen engagement in public and governance issues in Nigeria. Nigeria is ranked 150 out of 180 countries on the Corruption Perceptions Index, scoring 24 out of 100 (Transparency International, 2023). Rumbul et al. (2018) note that the widespread corruption in Nigeria has resulted in a lack of trust in government, and citizens have become ambivalent about the governance issues they face. As a result, few Nigerians attempt to engage with their legislators, and few believe they can challenge public institutions to meet their obligations.

While the World Bank (2022a) highlighted that Nigeria's economic growth improved following the 2020 COVID-19 pandemic-related recession, however, the country's economy declined, and GDP growth remains low. Nigeria's human capital development ranks 150th out of 157 countries in the World Bank's 2020 Human Capital Index (Civic Hive, 2023). As economic growth continues to be a challenge, the percentage of severely impoverished Nigerians is projected to increase by 8 million between 2019 and 2024 as population growth exceeds poverty alleviation (Fagbadebo, 2018; World Bank, 2022a). Fagbadebo (2018) underscores that the shortage of employment opportunities is the leading cause of widespread poverty, inequality, and social and political unrest. According to a recent Afrobarometer survey (Figure 4 below), crime and security, economic management, and unemployment are three of Nigeria's most severe problems (Galileo et al., 2023).

Figure 4: *Top 10 most important problems*



Source: Galileo et al. (2023)

According to Oladapo and Ojebode (2021), in the last two decades Nigeria has experienced an increase in the use of digital technologies, significantly empowering the civil society community. Kemp (2023) states that there are about 193.9 million mobile connections, representing 87.7% of the population and 122.5 million internet users, representing 55.4%. According to Rumbul et al. 2018), the creation of the National Information Technology Development Agency, tasked with bringing digital literacy to more remote regions of the country and the establishment of information technology innovation hubs, has resulted in renewed interest and motivation in many Nigerians to innovate.

1.2.2 Understanding the South African economic, social, political, and digital technology profile

South Africa is a multi-ethnic, culturally, and racially diverse country. Statistics South Africa (Stats SA, 2022) estimates a population of approximately 60,60 million people by mid-2022. While it has made significant changes to improve citizens' welfare since 1994, the country continues to face constant economic and social challenges (World Bank, 2022b). According to the World Bank (2022b), the economy has had an annual growth of

only about 1% over the last decade. The COVID-19 pandemic further weakened the economy, resulting in high unemployment rates (OECD, 2022). PricewaterhouseCoopers (PwC, 2023) explains that in recent years, economic growth has been weakened by electricity outages.

Government has committed to transforming the public sector by focusing on service delivery and addressing the inequality caused by the apartheid rule, through the Constitution of South Africa (1996) and the Batho Pele principles (Maramura et al., 2019). Since 1994 the history of South Africa has been one of constant reform, primarily focused on dismantling the structures of apartheid and building a more just society (Tapscott, 2017). South Africa continues to face several governance challenges, including incompetent and ineffective public administration, corruption, lack of service delivery, and unemployment, which have resulted in many protests for service delivery, civic issues such as unemployment, and gender-based violence (Maramura et al., 2019; Tapscott, 2017). South Africa faces similar governance challenges to Nigeria, including service delivery, corruption, accountability and transparency. Corruption remains a key challenge in South Africa. South Africa is ranked 72nd out of 180 countries on the Corruption Perceptions Index, scoring 43 out of 100 due to public sector corruption (Transparency International, 2023). The rise in corruption, lack of financial and managerial skills, political interference, infighting in local government, lack of key staff, and lack of accountability (Kroukamp & Cloete, 2018) are directly linked to low service delivery countrywide.

Despite significant achievements since the end of apartheid, South Africa has experienced limited socioeconomic transformation. As a result, the country remains the most unequal in the world, with spatial exclusion and poor connectivity in historically underserved and disadvantaged communities preventing a large portion of the population from participating in the modern economy (OECD, 2022; Stats SA, 2022; World Bank, 2022b). The World Bank highlights that *"the percentage of the population living below the upper-middle-income-country poverty line fell from 68% to 56% between 2005 and 2010 but has since trended slightly upwards, to 57% in 2015, and is projected to have reached 60% in 2020"* (World Bank (2022b).

According to Statista (2023), over the last decade, there has been a notable increase in people accessing the internet in South Africa; at least 44 million people are connected to the internet, and about 78.7% of the South African population use mobile devices. However, mobile data costs remain a barrier to internet access and the opening of civic space through digital means (Roberts, 2021).

1.2.3 The problem of governance in Nigeria and South Africa

Nigeria and South Africa are regarded as leaders in the SSA region; for example, through the influence of previous South African and Nigerian leaders, the African Union established the African Peer Review Mechanism to review and report on various governance standards (Crocker, 2019). Fagbadebo (2018) finds that citizens in both countries are impacted by the governance issues, indicating that both countries need effective initiatives to improve governance for their citizens. The governance issues in both countries have prompted civic tech communities to create platforms to address the challenges facing their communities. Table 1 below compares the development indicators for Nigeria and South Africa.

Table 1: *Development Indicators for Nigeria and SA*

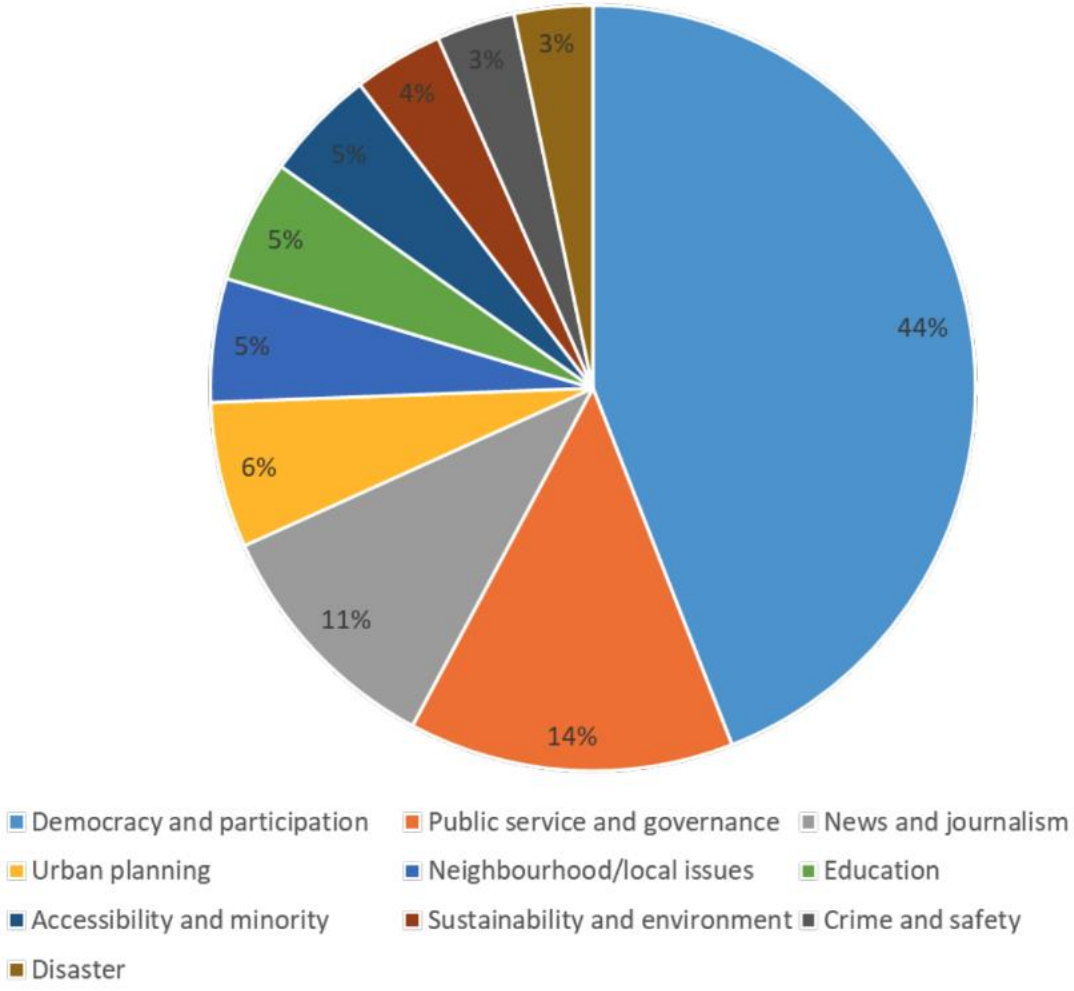
Development Indicators	Nigeria	SA
Social		
Population	216 million	60,6 million
Economic		
GDP	440.8 USD (billions)	419.9 USD (billions)
Unemployment	33.30%	35%
Corruption index	150 out of 180 countries	72 out of 180 countries
Digital		
Mobile connections	193.9 million (87% of the population)	112.7 million (187.4% of the population
Internet users	122.5 million (55.4%)	43.48 million (72.3%)
Social media users	31.6 million (14.3%)	25.8 million (42.9%)
Governance		
Participation	37.20%	80.60%
Anti-corruption	31%	53.10%
Accountability and transparency	46.40%	79.60%
Public administration	51.50%	58.90%
Human development	49.90%	63.20%
Overall governance	47.70%	67.70%
Public perception of governance	36.6	44.60%

Note. Population figures for Nigeria are from Olatunji and Adejoro (2022). The population data for South Africa is from Stats SA (2022). Digital indicators are from Kemp (2023). Economic and governance indicators based on Ibrahim Index of African Governance 131 by Mo Ibrahim Foundation 2022 (https://iiag.online/).

1.3 The emergence and potential for improved governance through civic tech

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 and track parliamentary activity, 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. Civic tech helps with many facets of civic life, like community organising, public participation, crowdfunding, transportation, and social equity (Network Impact, 2015). Civic tech has many different focus areas (Figure 5 below).

Figure 5: *Issues addressed in civic tech projects.*



Source: Zhang et al. (2022)

Civic tech can be understood as using digital technologies by civic actors like NGOs, activists, community organisations, private and social enterprises, academia, and governments (Chatwin & Mayne, 2020; McNutt et al., 2016; Zhang et al., 2022). According to McGee et al. (2018), civic tech started in 2004 and was primarily focused on contributing to responsive government, democratic societies, and advocacy.

The spread of civic tech globally can be attributed to networks and communities, which continue to provide a space for the community to support, connect, collaborate, and learn

from each other. According to Zhang et al. (2022), the civic tech ecosystem is international, cross-industry, and interdisciplinary.

1.4 An emergent African civic tech ecosystem

African civic tech is usually traced back to 2007, when Kenyan bloggers and software developers created Ushahidi, an online platform for active citizens to report post-electoral violence (Couve et al., 2018:5; Rotich, 2017). The Arab Spring and other online movements that followed further catalysed the civic tech field in Africa. Ushahidi remains one of the most critical developments, as it engendered and benchmarked the African civic tech movement (de Rochegonde, 2020). Rumbul et al. (2018) assert that between 2005 and 2015, digital tools and applications for participatory governance were instrumental in enabling and empowering citizens in developing countries. These civic tech organisations have developed reporting and data-sharing platforms to facilitate accountability and transparency, citizen empowerment and public participation in governance and to enable grassroots advocacy.

Between 2008 and 2017, many African countries saw the introduction of a civic tech platform with notable developments in Nigeria, South Africa, Kenya, Uganda, Egypt, Tunisia, Mozambique, and Zimbabwe. In South Africa, the People's Assembly and the Parliamentary Monitoring Group initiatives have been active since the 1990s; 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 like MobiSAM and amandla.mobi, OpenUp, Grassroot, GovChat, Lungisa, EskomSePush, 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, with fewer initiatives coming out of Senegal, Ghana, and Burkina Faso. Nigeria has initiatives like Enough is Enough (EiE), BudgIT, Tracka, Connected Development, Shine Your Eye, Habitat App, iTake Actions and Gavel.

According to Rumbul (2015), 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 typically use and create different technologies for their initiatives, ranging from low-tech options, apps, and online platforms like WhatsApp, Facebook, and Twitter, to high-tech solutions like artificial intelligence, blockchain, and machine learning.

African civic tech is often transnational; for example, civic tech organisations OpenUp, Open Cities Lab, Code for Africa and Budgit work in various countries. African civic tech is usually concentrated in tech hubs, communities, and networks. Tech hubs like Co-Creation Hub (ccHub) (Nigeria, Rwanda), Ihub (Kenya), Impact Hub (Zimbabwe), and Wennovation (Nigeria) play an enabling role in the civic tech movement, as they often incubate and support civic tech projects (Mbugua, 2018).

1.5 Research Problem Statement

Civic tech is a burgeoning field in Africa. It is argued to be instrumental in shaping governance, particularly in citizen engagement and participation, access to information, transparency and accountability, and service delivery (Rumbul et al., 2018). For the last 15 years, Africa has witnessed a rise in non-governmental organisations and actors adopting, building, and implementing 'civic technologies' in various sectors. The sophistication, scope, and extent of civic tech initiatives have grown in the last decade, particularly in countries with vibrant technological ecosystems, like Nigeria and South Africa (Mbugua, 2018; Roberts, 2021; Wissenbach, 2019).

There is limited knowledge focused on understanding the evolution of civic tech and its role in supporting participatory and responsive governance in Nigeria and South Africa. Limited research is available on civic tech's influence on governance, drivers that support its development and evolution, and approaches circumventing the community's challenges in African settings. While increased studies have explored civic tech, the research often focuses on Western contexts (Aragón et al., 2020; Duberry, 2022; Sun & Yan, 2020). This leaves a gap in knowledge about African civic tech and its contribution

to governance. Exploring its development from the perspective of the key driving factors that influence the creation of civic tech in Nigeria and South Africa, the governance issues addressed by civic tech in the two cases, and the approaches the community is using to address challenges affecting governance-focused civic tech initiatives, can contribute to addressing this knowledge gap.

1.6 Research Purpose Statement

This study aimed to explore the development of civic tech in Africa, with a specific focus on Nigeria and South Africa, and how it contributes to governance. The study specifically examined how civic tech enhances governance; drivers that account for the evolution of civic tech; and the approaches to circumventing challenges faced by the community improving governance. A comparative country case study approach was adopted to examine the drivers, approaches to addressing challenges, and civic tech's role in participatory and responsive governance in Nigeria and South Africa. The study assessed Africa's broad civic tech landscape, drawing on analysis from information in a civic tech database the research developed with extensive data on the civic tech ecosystem. The database enabled the establishment of a profile of civic tech organisations and their focus areas and activities.

1.7 Main Research and Sub-Questions

In line with the purpose of this study, this research aimed to address the following research question: How does the emergent civic tech community contribute to governance in Nigeria and South Africa? In addressing this question, the study explored the following sub-questions:

1. How are civic tech initiatives in Nigeria and South Africa contributing to the evolution of governance, particularly in citizen engagement and participation, accountability and transparency?
2. What are the drivers of civic tech development leading to the emergence of civic tech initiatives focused on governance in these two countries?
3. How are civic tech organisations in these two countries circumventing the challenges facing the civic tech community to improve governance?

The above chapter conceptualises governance, understanding the evolution and diffusion of civic tech in the world, Africa, and the two country case studies, Nigeria and South Africa. Chapter 1 also outlined the socio-economic and digital profiles of both countries. While the study primarily focuses on Nigeria and South Africa, it also offers invaluable insights into African civic tech through analysing the African civic tech database. Furthermore, the study is rooted in “African” civic tech for several reasons. Firstly, identification and the transnational nature of the movement, based on analysis of the database and the researcher's knowledge of the African civic tech space, African civic tech organisations identify themselves in the context of continental work. Secondly, the African civic tech field is an interconnected movement; its ecosystem often coalesces around continental tech hubs, networks, and communities of practices such as CTIN. Lastly, using the database offered invaluable insights extending beyond the two case studies, providing further understanding of the civic tech phenomena on an African scale. This research can serve as a springboard for future research focusing on the broader continental civic tech field.

Chapter 2 explores existing literature on civic tech, identifying existing research gaps in the study of civic tech in African settings; the chapter ends with a discussion of the social accountability framework, which will be used to understand the research problem and analyse the data. Chapter 3 discusses the qualitative case study, including a discussion of the African civic tech database. The database was developed to serve as a centralised database of information about existing and upcoming civic tech projects, organisations, and initiatives (CTIN, 2018). The researcher was responsible for curating the database from its inception in 2018 to January 2023.

Chapter 4 presents the data, divided into three sections focusing on mapping of the African, Nigerian, and South African civic tech landscapes. Chapter 5 provides the findings reflecting on the main research question, followed by a review of the linkages between civic tech, and governance and a conceptual analysis of civic tech within the social accountability framework. Finally, chapter 6 concludes the study by reflecting on the research question and the social accountability conceptual framework while contemplating the contributed knowledge and limitations of the study.

Chapter 2: A review of civic tech evolution towards enabling governance

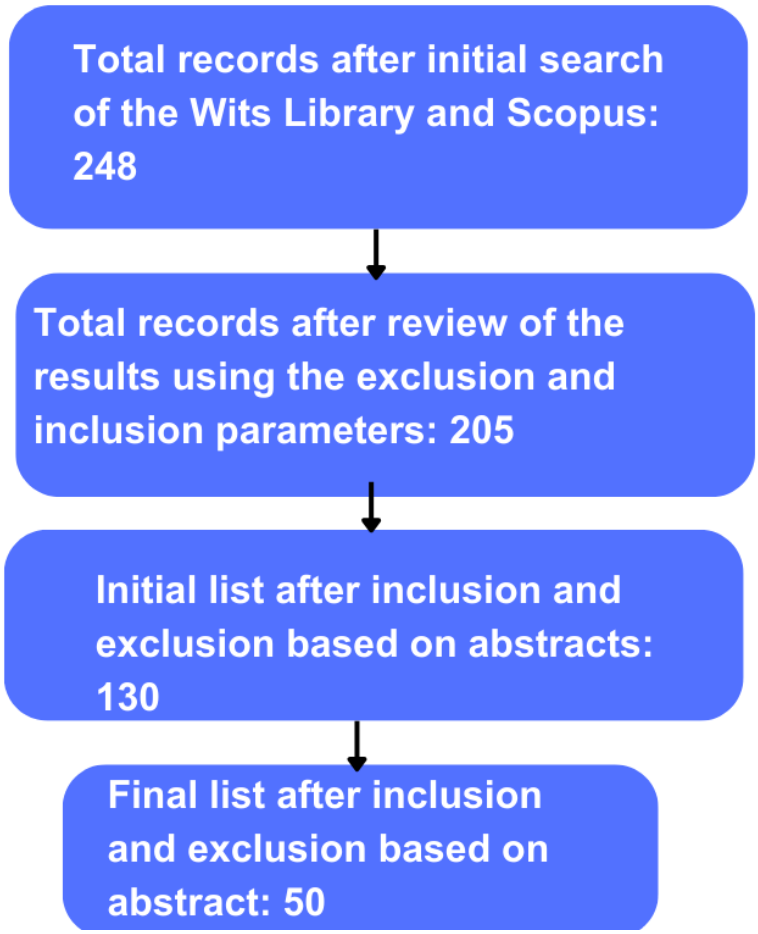
Due to civic tech research's multi-disciplinary and diverse nature, civic tech has become a relatively broad topic. This study commenced with a scoping literature review to synthesise the body of knowledge on civic tech and its intersection with governance (Munn et al., 2018). This approach aided in exploring the existing studies, defining, and understanding civic tech concepts and knowledge gaps. The research questions informed and defined the search protocol and inclusion criteria (Figure 6 below).

The review followed four steps:

1. Define inclusion and exclusion criteria based on the research questions.
2. Comprehensive search guided by the inclusion and exclusion criteria (search terms, timeframe, and publication type). Literature focusing on the following areas was included:
    - Global civic tech or civic innovation concepts,
    - Civic tech for enhancing governance in citizen engagement and participation, accountability and transparency,
    - Civic tech and democracy,
    - Civic tech and society,
    - The development, design, and structure of civic tech,
    - The limitations and challenges of civic tech ecosystem, and
    - Civic tech in developing country / region contexts.
3. Reviewing initial results and selecting relevant studies based on inclusion and exclusion criteria.
4. Final selection based on abstract informed by the inclusion and exclusion criteria and organising literature into three subfolders on qualitative data analysis software ATLAS.ti into three categories: Civic tech (conceptual papers), civic tech, governance and social accountability. This enabled better management of the papers. This list of 50 included peer-reviewed and scholarly journal articles, books,

book reviews and chapters, conference papers, NGO and philanthropic papers and reports because the civic tech community is a practice-dominated field.

Figure 6: *Literature review process*



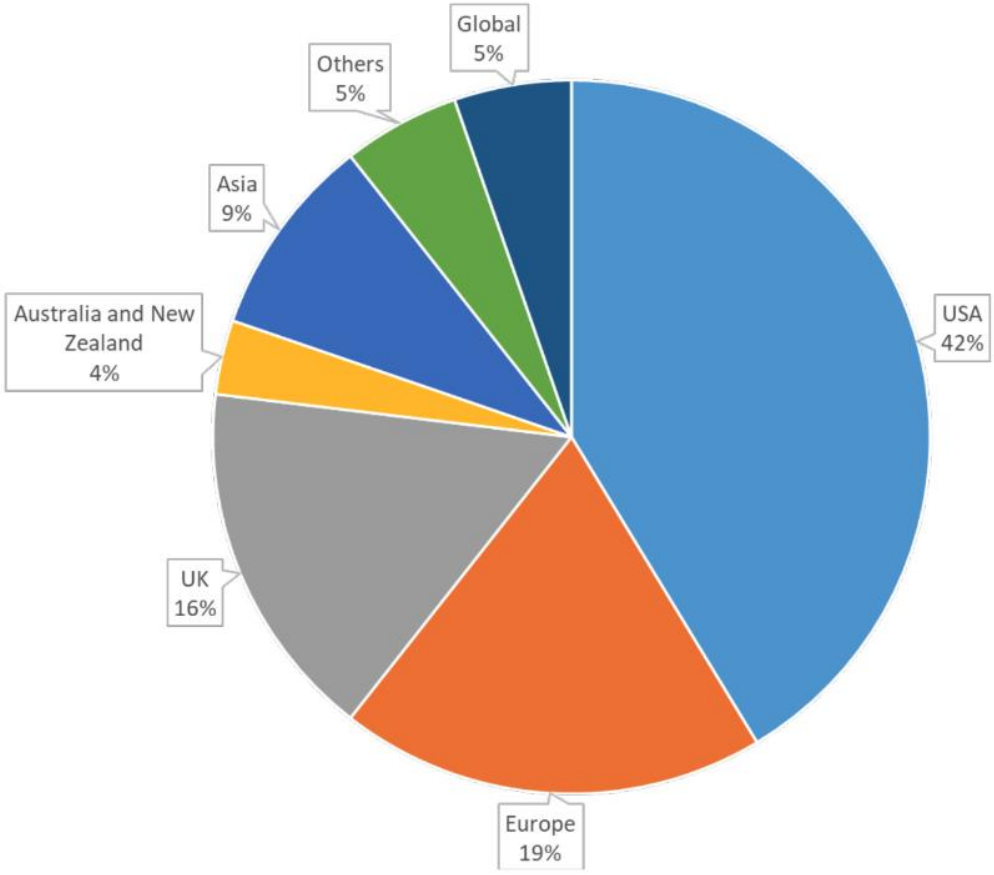
Source: Researcher's own

The literature selected for this study was collected from the University of Witwatersrand (Wits) library, which provides access to academic databases like Pro Quest Central, SpringerLink, Taylor & Francis, arXiv, ScienceDirect, Directory of Open Access Journals, EBSCOHost Academic search, and Web of Science. To supplement the search results, the researcher scanned the reference sections of relevant literature and searched for studies on scholarly databases like Scopus and, to a lesser extent, Google Scholar. To select the final list, the abstracts and introductions were used to determine the suitability of each publication. ATLAS.ti was used to store, organise, and analyse the literature.

Literature published between 2015 and 2023 was included, as studies in the field rose during this period. Due to the nascence of the field, this study included literature in other languages if an English-translated version was available.

While more academic research on the civic tech community has been published in the last five years, literature still falls short of studies explicitly focusing on African civic tech. According to Zhang et al (2022) studies on African civic tech account for less than 5% as shown in Figure 7 below, Africa is included in the “others”. Therefore, the search did not include a regional exclusion criterion. Characteristically, the literature reviewed focuses on civic tech as a civic-led field and excludes studies that explicitly focus on governance technology (govtech) and e-governance. While closely related to civic tech and, in some cases, interchangeable, this study recognised civic tech as a distinctive phenomenon led by non-governmental actors. This literature review begins by exploring civic tech research’s theoretical and conceptual underpinnings, then interrogating critical views on defining civic tech. Lastly, a discussion of the most relevant literature on civic tech and its intersection with governance.

Figure 7: *Study locations for civic tech research*



Source Zhang et al. (2022)

2.1 Theoretical underpinnings and conceptual frameworks in the study of civic tech

The scholarly study of civic tech is often multidisciplinary and interdisciplinary, with studies from political studies, governance, communication and design, social studies, computer science, information science, and public administration (Aragón et al., 2020; Chatwin & Mayne, 2020; Dickinson et al., 2019; Zhang et al., 2022). Civic tech is well-studied in Computer Supported Cooperative Work and Human-Computer Interaction research. These two communities are the primary academic groupings making efforts to

build knowledge on civic tech (Boehner & Disalvo, 2016; Chatwin & Mayne, 2020; Dickinson et al., 2019; Zhang et al., 2022).

Methodological approaches in the study of civic tech research vary, however, studies reviewed for this research indicate that more than half of the studies adopt qualitative methodologies, with most using interviews, ethnographic studies, case studies, and observation as research methods. Qualitative methods appear to offer richer and more contextual accounts, descriptions, and understandings of civic tech based on the experiences, perceptions, and behaviours of those studied.

Mixed methods have been gaining prominence; at least a third of the literature reviewed used mixed methods. Mixed methods appear to enable researchers to combine deep insights gained through qualitative methods like interviews and quantitative methods like questionnaires to gain an understanding of user experiences, offering a holistic understanding of how civic tech affects society (Cantijoch et al., 2016) Through quantitative methods, studies could detect trends, find patterns in data, and generalise results to the broader civic tech community to support qualitative findings (Hamm, 2020). Although limited studies used quantitative methods, this methodology has gained prominence in recent years, as it enables researchers to study civic tech using large datasets, data logging, web scraping and big data analysis (Zhang et al., 2022). Several studies did not indicate methodologies and often focused on clarifying civic tech concepts and connecting civic tech to theory, as the field still establishes frameworks.

According to Zhang et al. (2022:14), earlier studies of civic tech were descriptive studies aimed at defining civic tech actors and their adoption of digital technologies for civic purposes. Gradually civic tech research has been expanding beyond descriptive studies. Recent studies on civic tech focus on exploring and understanding the motivations of civic tech organisations and their founders, their development and adoption into governance fields like digital citizen engagement and participation (Gilman, 2017; McNutt & Goldkind, 2020; Pade-Khene, 2018), and accountability and transparency (Amakoh et al., 2018; Hamm et al., 2021; Rumbul, 2016b). Ultimately, the predominant civic tech literature

explored civic tech through diverse theoretical and conceptual frameworks from different disciplines. These include new public governance theories (Gilman, 2017), democratic theory (Poblet & Plaza, 2017), communication theory (Brabham & Guth, 2017), communication infrastructure theory (Nah & Yamamoto, 2017), social accountability (Pade-Khene et al., 2017), adaptive structuration theory (AST), meaningful inefficiencies (Gordon & Walter, 2019), contribution analysis (Chatwin & Mayne, 2020), deliberation theory (Lu, 2021) and actor-network theory (Gordon & Lopez, 2019).

The variety of current theoretical and conceptual frameworks in civic tech research indicated the need to find a comprehensive conceptual framework that recognises the intricacy of the intersection of civic tech actors, technology, governance, and society. There is value in different theoretical and conceptual perspectives, as the field is interconnected, and researchers are still debating key concepts. Poblet and Plaza (2017) connected civic tech, particularly the design of civic tech, to democratic theory, aiming to redefine current notions of democracy, participation, equality, representation, and citizenship. They argued that a theory of linked democracy could explain various aspects, like interactions between people, digital technologies, and data. Gilman (2017) discussed how civic tech fits into a collaborative or networked governance paradigm, focusing on approaches to leverage civic tech for collaborative government services and effect change in the traditional relationship between government and the public. Other studies examined the significance of civic tech as a mode that supports and enables engagement and participation (Boehner & Disalvo, 2016; Duberry, 2022; Hamm et al., 2021; Nah & Yamamoto, 2017).

There is a recent uptake in research focusing on exploring design approaches to advancing ways of improving the impact and sustainability of civic tech. Chatwin and Mayne (2020) explored contribution analysis, an approach helpful in assessing the existing project status, gathering evidence of change, and adapting and evolving the theory of change to meet project objectives. They argued that contribution analysis is an approach that is sufficiently adaptable to address the inherent challenges and to accommodate the monitoring and evaluation needs of the civic tech ecosystem (Chatwin

& Mayne, 2020; Hamm et al., 2021). Gordon and Walter (2019) introduced meaningful inefficiencies as an emerging design paradigm for civic tech, which borrows from fields of game design and studies. Meaningful inefficiencies accommodate the possibility of messiness, disruption, and playing with rules and boundaries. They argued that extending civic tech design to meaningful inefficiencies will advance the current discourse on technology and governance.

Brabham and Guth (2017) questioned the emergence of civic tech as a consultative layer and its role in shaping today's landscape of democratic engagement through the lens of communication theory and adaptive structural theory (AST). Similarly, Wissenbach (2019) used a communication-based analytical framework to explore the power imbalances in the civic tech movement. While less prominent in the literature, several studies have begun exploring power dynamics' influence on the civic tech ecosystem (Khene et al., 2021; Rahman, 2017; Wissenbach, 2019).

The social accountability approach is another notable approach in the literature and is most applicable to this study. The social accountability framework is suitable for this study because it can enable a better illustration and understanding of the relationship between civic tech and governance. Almén and Burell (2018) and Brummel (2021) contended that social accountability is often rooted in development discourse founded in citizenship embedded in alternative and participatory democratic models. Social accountability represents actions that citizens can take beyond elections to increase accountability. It relates to broader notions of voice, political participation and empowerment and relies on citizen engagement. Social Accountability is widely understood as applying the principles of transparency (information) and public participation to achieve accountability (both responsibility and enforcement) (Grandvoinnet et al., 2015).

It is a concept that is connected to both the field of governance and civic tech. For instance, Khene et al. (2021) used 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) used a social accountability framework to study motivations for engagement between citizens and

government officials using digital technology. According to Pade-Khene et al. (2017), there has recently been a push to use digitally innovative approaches, including civic tech, to help developing countries monitor social accountability. Social accountability is premised on the assumption that empowering the public with information can stimulate citizen engagement and collective action on governance issues while enhancing accountability and transparency. Civic tech initiatives are premised under similar assumptions.

The review suggested that the study of civic tech, particularly its impact on governance and society, is still in its infancy as researchers debate its definition and parameters. While there are many conceptual frameworks, there is a lack of shared conceptual framework that pays attention to developments in the civic tech field. However, the continued debates indicate efforts to build a shared understanding of the concepts and their connection to other fields like governance. Researchers have built a significant body of knowledge on civic tech; however, most studies focus on Global North civic tech contexts, therefore missing Global South perspectives.

2.2 Interrogating and defining civic tech: Towards a consensus

A review of the literature illustrates that defining civic tech is contentious due to its broad scope of stakeholders and focus areas. Defining civic tech is further complicated by its several names, including civic innovation, tech for good, civic crowdsourcing, and community technology (Knutas et al., 2023).

The Knight Foundation is often credited with coining the term ‘civic tech’ in their 2013 report, which explored and highlighted the increase and investment in the civic tech field (Knight Foundation, 2013). However, the Knight Foundation’s interpretation overlooks the distinctive nature of civic tech, as their definition includes tech companies like Uber and Airbnb as examples of civic tech. This definition is primarily technology-focused (Chatwin & Mayne, 2020) and thus misses the nuanced nature of civic tech. Although technological innovation is a central theme in civic tech, it goes beyond the established focus of innovation, as civic tech is a community particularly concerned with leveraging technology

and other methodologies to specifically enhance and strengthen democratic governance, as highlighted by Gilman (2017).

Most of the major contentious issues amongst the civic tech community and other stakeholders, like researchers and funders, are rooted in a lack of defined parameters, ie *what is considered civic tech and what is not*. Chatwin and Mayne (2020) argued that the lack of parameters and uniformity in defining civic tech allows creativity and innovation. Many scholars have offered operational definitions; for example, Chatwin and Mayne (2020) suggested defining civic tech as a process by an ecosystem made up of public-facing digital government institutions, academia and non-profit intermediaries, civic-focused private institutions, start-ups, and citizens who use data, design, and technology to inform, engage and connect citizens with government or each other to advance civic outcomes. Wissenbach (2019, p. 548) described civic tech as "*socio-political mobilisation bringing people together around the construction of infrastructure that supports the creation or liberation of data and information in its overall strive to strengthen civic-driven governance*." Solymosi (2018) agreed that civic tech is when digital technologies are created and used to enhance governance and increase transparency, inclusiveness, and participatory outcomes.

There are many varying definitions of civic tech. For this study, civic tech is defined as the creation, adoption, and use of digital technologies and other methodologies by non-governmental actors like CSOs, NGOs, social enterprises, civic hacker groups and individuals to facilitate and enhance democratic governance in the areas of citizen engagement and participation, transparency and accountability, service delivery and more (Duberry, 2022 Gilman, 2017; McGee et al., 2018; Poblet & Plaza, 2017; Rumbul, 2016a; Saldivar et al., 2018; Skaržauskiene & Mačiulienė, 2020).

2.3 Understanding the drivers, motivations, and development of civic tech

The literature considers several factors as the drivers and motivations for developing civic tech. A considerable amount of literature has highlighted how modern democracies are facing common issues like low citizen engagement and participation, low levels of trust in

government institutions, high levels of corruption, increasing inequality, and lack of transparency and accountability (Dickinson et al., 2019; Fan et al., 2019; Rumbul, 2016a; Saldivar et al., 2018). Consequently, the rise of the civic tech movement is connected to these governance challenges (Gilman, 2017). Gordon and Lopez (2019) explained that digital technology represents an opportunity for many CSOs to rethink long-established ways of promoting civic engagement and participation.

Rumbul (2016b), and Skaržauskienė and Mačiulienė (2020), argued that the emergence and development of civic tech occurred organically, and the open government movement influenced its evolution. Similarly, Chatwin and Mayne (2020) credited the convergence of increasing public interest in democratic processes, emerging digital technologies, and ongoing government reforms. The attempts to improve transparency and accountability and participation through e-government, government 2.0, open data and the open government movement created an enabling environment for the civic tech community (Shrock, 2018). There are limited studies focused on studying the drivers of African civic tech. Rumbul et al. (2018) suggested the growth of start-up ecosystems and tech hubs in SSA and the increase in investment and funding for the civic tech community from international investors and the philanthropy community has played a part in driving the rise in civic tech.

Zhang et al. (2022) postulated that the development of civic tech is linked to the evolution of the technologist community and its subcultures, particularly the hacker and maker movement provided technologists who are attracted to developing non-commercial and open-source tools to connect on a global scale. Majorek and du Vall (2017) suggested civic tech development is driven by entrepreneurs who operate in the tech industry, information activists, civic hackers, various think tanks and public entities. While the tech ecosystem may have influenced civic tech, the founders and designers develop civic tech using free and open-source software and are not focused on building tech for profit (Duberry, 2022; Wissenbach, 2019). A study by Knutas et al. (2023), analysing the motivating factors of civic tech projects indicated that the fundamental motivations for starting civic tech projects are similar for many organisations. The difference between the organisations is the approaches they use to achieve their goals.

The studies show common understandings on the drivers of civic tech, that civic tech organisations are often driven by democratic and idealistic motivations to use technologies to remedy governance challenges. Civic tech is significantly driven and influenced by social movements and technological advancements.

2.4 Exploring operationalisation practices of civic tech

According to Brabham and Guth (2017), some civic tech organisations function as firms providing a bridge or infrastructure for communication between citizens and government, typically for public consultation on government decisions by facilitating government-citizen communication as the 'consultative layer'. Gordon and Walter (2019) highlighted that civic tech focuses on two areas: technological efficiency, which is concerned with streamlining government operations, and civic efficiency, which is linked to civic action and using technology to improve civic life.

In some cases, civic tech projects result from close collaboration and synergy between a group of different actors, (Yoshida & Thammetar, 2021). According to Wissenbach (2019), the civic tech community uses data and technology as fuel, communications collaboration models, and to co-create technology infrastructure and support campaigns. The civic tech ecosystem is a connected and collaborative community interested in developing and adopting user-centred digital technology (Brabham & Guth, 2017; Chatwin & Mayne, 2020; Majorek & du Vall, 2017).

Civic tech projects are often referred to as bottom-up projects because they are projects which are developed outside of the government sector and include tech activism and community-focused organising activities (Duberry, 2022; Skaržauskienė & Mačiulienė, 2020). According to Duberry (2022) and Gordon and Lopez (2019), the community uses horizontal structures and bottom-up co-creation approaches because they enable civic tech organisations to engage with communities in creating and implementing digital technology. For instance, using this approach, civic tech organisations develop tools to provide access to policy-making processes, enabling citizens to suggest and implement new solutions that may better fit their practical needs (Duberry, 2022). While civic tech projects are not necessarily intended to disrupt traditional civic participation and

engagement processes, they are designed to support and make existing processes accessible to citizens and highlight governance challenges ignored by the government (Duberry, 2022).

2.5 Civic tech as an intervention for addressing governance challenges

Several studies have found a link between civic tech and governance; for instance, Chatwin and Mayne (2020) posited that civic tech is about developing and using digital technology and a combination of internal and external knowledge, skills, and experience to address complex governance challenges. John and Sjoberg (2020) argued that civic tech has engendered high expectations, particularly in engaging citizens in governance and development activities. Civic tech studies suggest that in the governance sector, civic tech typically focuses on citizen engagement and participation, service delivery, transparency and accountability (Gilman, 2017; McNutt et al., 2016; Skaržauskiene & Mačiulienė, 2020). Civic tech intervenes in governance issues as a response to issues neglected by government (Duberry, 2022). The shift in governance has enabled civic actors to participate in and influence governance. The emerging theme in literature reveals that civic tech enables individuals, groups, and organisations outside government to restore the power of their collective voice in decision-making (Chatwin & Mayne, 2020; Gilman, 2017).

Cárcaba et al. (2017) posited that governance principles are interlinked and interact in complex ways, mutually reinforcing, and cannot be developed in isolation. For instance, better access to information promotes transparency, civic engagement, and effective decision-making. Civic participation increases the flow of information and the legitimacy of decision-making. In turn, legitimacy encourages participation. Institutions must be transparent and adhere to the rule of law to be equitable (Cárcaba et al., 2017). The connection between governance areas is demonstrated in the civic tech community, where organisations often focus on more than one governance area.

The civic tech community is motivated to develop and use digital technology to improve effectiveness and efficiency in governance and provide tools for open governance

(Skaržauskiene & Mačiulienė, 2020; Yoshida & Thammetar, 2021). Gordon and Lopez (2019) explained that civic tech holds the potential to circumvent inefficient governments by fostering a more participative and open environment between citizens and civic groups, as well as government and non-government organisations. Dickinson et al. (2019) highlighted that civic tech has gained prominence in governance due to decreasing levels of trust in government by citizens, especially in underserved communities that are predominantly affected by governance issues; this ultimately leads to decreased citizen participation. Skaržauskiene and Mačiulienė (2020) explained that the collaborative approaches of the civic tech community transform citizens and other actors from passive to active in governance activities.

2.6 Civic tech for citizen engagement and participation

Cheruiyot et al. (2019) maintained that the civic tech movement is rooted in participatory culture. May and Ross (2017) stated that civic tech needs to be better understood in promoting representative public participation and impact. Many projects aim to enable and support citizen participation and engagement in governance processes. Citizen participation "is a reflection of citizen power" (Cárcaba et al., 2017), where widespread participation allows people to participate in decision-making, involving them in the economic, political, cultural, and social processes that impact them.

The mechanisms of participation and scope of citizen participation have been institutionalised and expanded through regular electoral processes and council proceedings and expanded to reflect the convergence of social and political participation, as well as the expansion of participatory methods, state-civil partnerships, decentralisation and devolution, participatory assessment, and other factors (Cárcaba et al., 2017; Fung, 2015). Citizen participation and engagement are essential for promoting accountability and transparency in the delivery of public services (Pade-Khene, 2018). Civic tech enables citizens to engage and participate in decision-making processes, especially in resource-constrained contexts where citizens have not had the capacity and knowledge of their rights to hold government accountable (Pade-Khene, 2018; Suzuki, 2022).

Suzuki (2022) explained that the advancement in citizen participation is rooted in the emergence of the post-industrial era, which introduced digital technology, which made digital civic engagement and participation possible. Although Dalton (2021) argued that while traditional forms of public participation are on the decline, we are witnessing a change in political action, rather than mere changes in the level of involvement, citizen participation has now evolved to include a broader range of activities like street protests, boycotts, and civic tech.

Civic tech has emerged as an avenue for citizen participation and engagement as it has allowed citizens across the world to demand transparency and accountability and better service delivery, condemn politicians' inaction on governance issues, build activist movements for change, and more (Duberry, 2022; Khene et al., 2017). For example, concerning inclusive participation, a study by May and Ross (2017) focusing on FixMyTransport, a platform which enables citizens to report transport issues, found that users of the platform were diverse in age, gender, attitude to technology or degree of activism about transport issues. Therefore, their study indicated that accessible tools and interfaces effectively facilitate broader public participation.

2.7 Civic tech in a developing country context

In developing countries, governance issues are rife, and lack of civic rights, participation channels, and service delivery and corruption result in helplessness and citizen despondence (Pade-Khene et al., 2017). For instance, the Kenyan crowdsourcing platform Ushahidi, initially used for citizen participation, particularly in reporting and mapping elections violence, has grown and has been used in at least 160 countries (Amakoh et al., 2018: Pade-Khene et al., 2017; Youngs, 2019; Ushahidi, 2018).

In Nigeria, BudgIT, and the #OpenNASS campaign have been influential in using data and raising awareness of the potential of big data in promoting transparency in governance (Amakoh et al., 2018), while MobiSAM in South Africa enables citizen engagement through individual and collective action by allowing citizens to report and

monitor service delivery issues, thereby enabling social accountability (Pade-Khene & Lannon, 2018). While many civic tech tools are available, platforms have found it challenging to navigate the ecosystem. For example, the Moroccan citizen engagement platform SimSim, discovered that while citizens actively engage, government officials, particularly MPs, were hesitant to engage and answer citizens' questions on the platform (Youngs, 2019).

2.8 Challenges and limitations in the civic tech community

While civic tech could potentially enable participatory governance and improve the relationship between governments and citizens, it continues to face various challenges connected to a lack of sufficient infrastructure, accessibility, adoption, usage, impact, sustainability, funding, and difficult socio-political environments. Zhang et al. (2022) highlighted that a lack of adequate technical infrastructure, including Internet connectivity fundamentally hampers civic technology development and operation.

Studies have found that digital illiteracy, lack of awareness about existing civic tech tools, and accessibility impede civic tech adoption and usage, especially in developing countries (Pade-Khene, 2018; Wissenbach, 2019; Zhang et al., 2022). Brock et al. (2016) highlighted that civic tech suffers from low usage of the platforms even when they use low technologies like SMS. In many African countries, the rise in civic tech development is not translating into the uptake and adoption of these tools. While some civic tech organisations gain significant usage, government responsiveness remains low. Peixoto and Sifry (2017:46) suggest that civic tech organisations should consider government responsiveness when designing and building civic tech tools, as governments' willingness, skills, and resources to provide a meaningful response remain unchanged.

Peixoto and Sifry (2017, p.46) described the issue of technological access, which is still a challenge in both developed and developing countries, directly impacting civic tech users' profile and participation. Civic tech often excludes the poor and disadvantaged communities and people without access to technological infrastructure like smartphones and access to Internet connectivity. Wissenbach (2019) discussed the accessibility of

civic tech, highlighting that civic tech built by technologists or non-local activists faces a higher risk of developing inaccessible solutions or incompatible with local contexts.
While civic tech often has grassroots foundations, a combination of economic, socio-cultural, political, and infrastructural power disparities render civic tech constructs governed by civil society inaccessible to large segments of society (Wissenbach, 2019).

Literature has started exploring the impact of civic tech. For instance, John and Sjoberg (2020) remarked that there is limited knowledge about the long-term impact of civic tech projects. A particular issue that persists is how civic tech actors assess their impact, both from a methodological and outcomes perspective. This is due to the diversity of projects that come under the broad banner of citizen-sourcing or civic tech results in a lack of standard assessment criteria and metrics, particularly about the initiative's impact (May & Ross, 2017). The civic tech community is often criticised for how the ecosystem measures impact (Duberry, 2022). Chatwin and Mayne (2020) highlighted that the community has monitoring and evaluation issues that lead to civic tech organisations using social media engagement and website views as success benchmarks. Poblet and Plaza (2017) maintained that attempting to alleviate governance challenges by deploying civic tech tools for large-scale participation does not guarantee any real influence on the regulatory process or policy development.

Funding remains an issue for civic tech as international philanthropic organisations have primarily funded it. This dependence on international funding has resulted in a lack of sustainable business models to support civic tech's growth and widespread adoption (Sutherland & Innovation Network for Communities, 2015). The funding issue has compounded into various issues like lack of sufficient technological infrastructure, the lack of human capacity like appropriate technologists or developers, and the community often lacks the advanced technical ability to build, maintain and manage the technologies and projects (Aragon et al., 2020; Couve et al., 2018; Knutas et al., 2023; Zhang et al., 2022).

The most significant problem faced by the community is the complexity of governance issues like citizen engagement and participation, transparency, and service delivery (Khene, 2017). This issue could be linked to civic tech organisations' inaccurate

perspective on power as they may oversimplify the idea of shifting the power dynamics between citizens and government. Their failure lies in the lack of recognition of the power imbalance; therefore, civic tech continues to struggle to serve the civic purpose and influence change in governance (Jideofor, 2022; Zhang et al., 2022). Civic tech organisations must recognise that many governance challenges, including corruption, poor service delivery, lack of participation, and lack of accountability and transparency, result from the political and cultural context and extend further than the technological challenges. Due to these challenges, the civic tech field is filled with discarded tools (Asher et al., 2021).

2.9 Discussion of the social accountability framework and its applicability

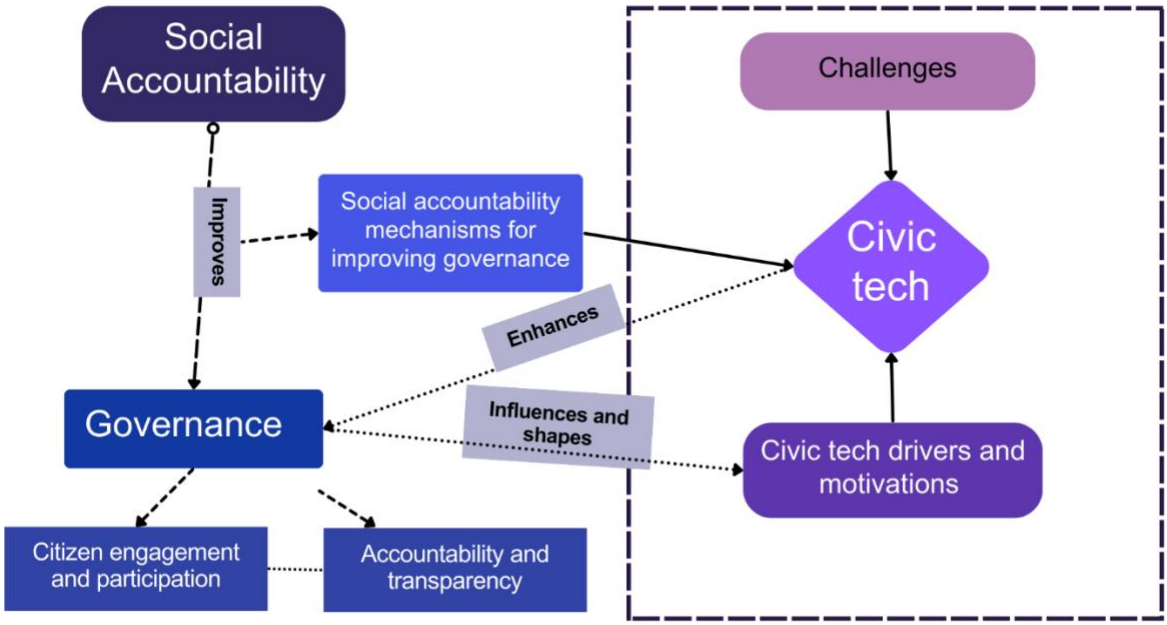
Social accountability refers to approaches that offer mechanisms and support for citizens and non-governmental actors to demand government responsiveness, transparency and accountability through citizen participation and engagement (Almén & Burell, 2018). Townsend (2023) concluded that civic tech is closely related to social accountability because civic tech can be consolidated into social accountability mechanisms to enable participatory and collaborative governance. Brummel (2021) stated that social accountability emphasises direct citizens' involvement in government activities. Over time, it has gained prominence in the governance field. Social accountability is central to governance, as it brings together approaches for accountability and transparency, which rely on citizen participation and engagement. The relevance of the social accountability framework for this study can be explained by Fox (2015), who highlights that social accountability is an especially relevant approach for societies where the representative government is weak, unresponsive, or non-existent, as in Nigeria and South Africa.

Brinkerhoff and Wetterberg (2015) argued that social accountability could be normative or instrumental. This study considers social accountability through its three instrumental goals. The first is concerned with improving the efficiency and effectiveness of service delivery with a specific focus on enhancing government response. The second focuses on improving governance quality, particularly in increasing transparency and accountability. The last aim focuses on empowering citizens, ensuring the inclusion of

disadvantaged communities, and building capacity for collective action (Brinkerhoff & Wetterberg, 2015).

The researcher used the social accountability approach in exploring civic tech to understand how civic tech is shaping governance (Figure 8 below). In this case, the social accountability approach enabled the researcher to build a conceptual framework using the data to study how civic tech creates value in the governance sector.

Figure 8: *Conceptual framework to study the intersection of civic tech and governance.*



Source: Researcher's own

Chapter 3: Research Design and Methodology

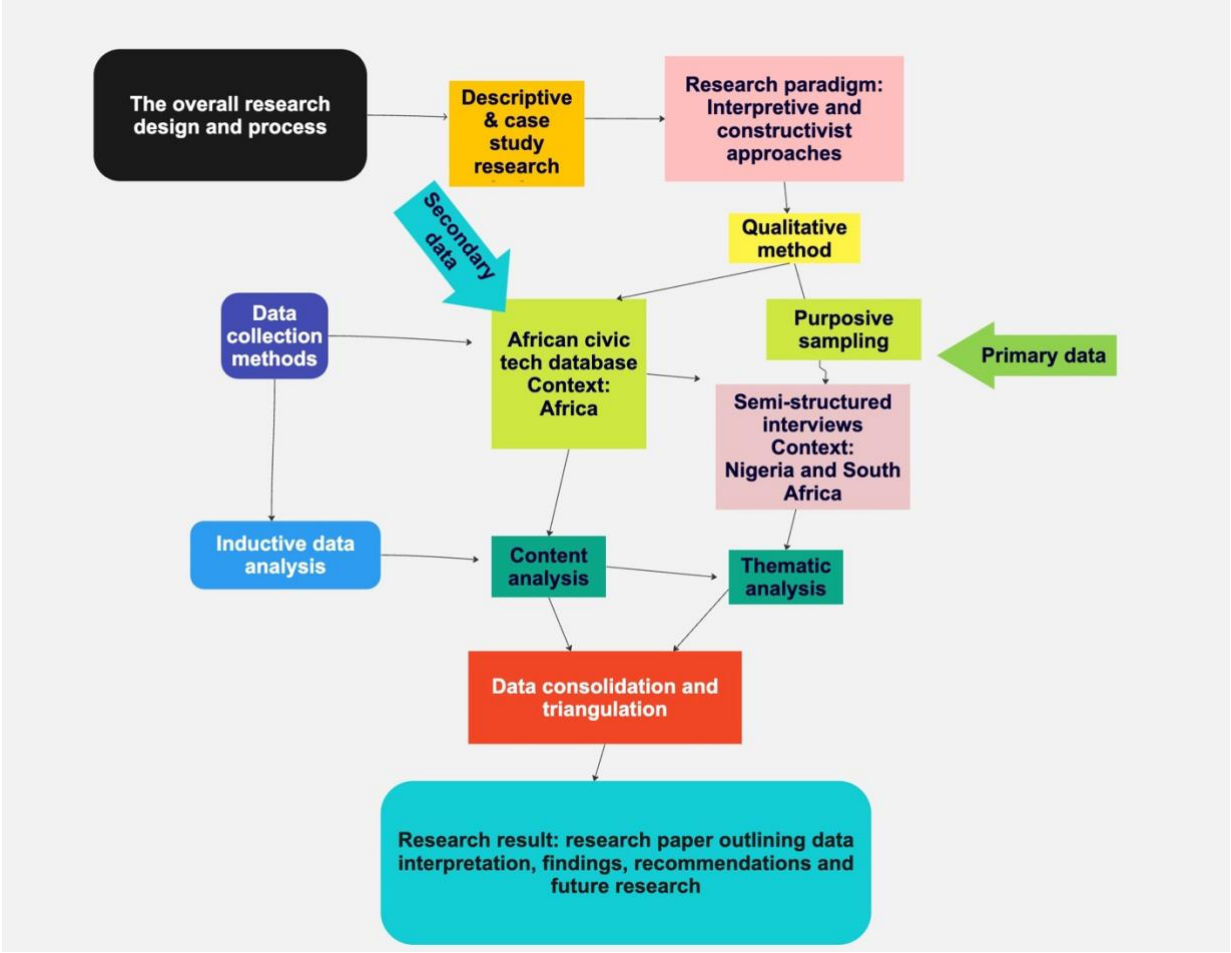
The sections in this chapter cover the research design and methodology, presenting details on data collection, sampling, research instruments, and data analysis used in the study. Finally, the overall research limitations are discussed.

3.1 Research design and methodology

Mishra and Alok (2017) stated that research design is a systematic process for combining multiple components of the study consistently and logically. It is the guideline for data collection, measurement, and analysis, while the research methodology is the path researchers must take to conduct their research. The research design in Figure 9 is intended to provide an appropriate framework for a study. A research design is significant, as it connects the methodology and research methods to address the outlined research questions to investigate the civic tech phenomena (Wahyuni, 2012). The research methodology outlines how the researchers formulate their problems and objectives and present their findings based on the data gathered during the study.

The research design of this study is a combination of descriptive and case study strategy. The descriptive design enables the researcher to gather, analyse, and present collected data to describe the civic tech phenomena and their contribution to the governance arena. This design provides researchers with a profile of relevant aspects of the phenomenon of interest from an individual, organisational, and industry-oriented standpoint. Using this research design, the researcher can collect data from diverse respondents on the interconnection of civic tech and governance in Nigeria and South Africa. The case study design enables a researcher to study a real phenomenon through detailed contextual analysis of context, other complex conditions, and their relationships using various data sources (Baxter & Jack, 2008; Chopard & Przybylski 2021; Creswell, 2013; Yin, 2012; Zainal, 2017). However, the case study design also has disadvantages, including limited generalisation, researcher bias, and it is considered time-consuming (Zainal, 2017).

Figure 9: *The outline of the study's research design*



Source: Researcher's own

3.2 An interpretive and constructivist research paradigm

A research paradigm is a philosophical framework upon which research is built. It provides a set of beliefs and understandings based on your research project's theories and practices. Ontology comprises a research paradigm, a belief system, and a study of being that reflects how a person understands what constitutes reality (Don-Solomon & Eke, 2018; Moon & Blackman, 2017). Scotland (2012) outlined that ontological assumptions deal with reality, specifically what it accounts for and what is known about it.

In this research, the ontological perspective is concerned with the description and nature of civic tech and how it enhances governance in two contexts, Nigeria and South Africa.

The study adopted interpretive and constructivist approaches to inquiry. The interpretivist paradigm relies on the interaction between researchers and the research interviewees to negotiate, collaborate, and develop a meaningful understanding of reality. Interviews, observation, and textual analysis are interpretive approaches. These approaches enabled the researcher to understand the social phenomena and interpret and construct the meanings of human behaviour in social, cultural, and historical contexts, emphasising the importance of culture and context in knowledge construction and interpretation (Don-Solomon & Eke, 2018).

3.3 A subjectivist epistemological approach

Epistemology concerns how knowledge can be constructed, received, and conveyed. Epistemology influences how researchers frame their research to interpret it appropriately and meaningfully (Don-Solomon & Eke, 2018; Moon & Blackman, 2017). This study adopted the epistemology of subjectivism, as meaning will be constructed through interviews with civic tech organisations in Nigeria and South Africa. Civic tech is socially constructed and influenced by language, which actively shapes it; it is culturally derived and historically situated (Scotland, 2012).

3.4 A qualitative research strategy

This research adopted a qualitative study approach to explore how civic tech enhances governance. This study considered the qualitative approach the most effective method, as qualitative methods like interviews will provide a unique understanding of civic tech and governance. Punch (2013, in Mohajan, 2018) described qualitative research as a *"type of social science research that collects and works with non-numerical data"*. Qualitative research seeks to interpret the meaning of data to help researchers understand social life by studying targeted populations or places. The study adopted the qualitative approach to explore and interpret how civic tech addresses governance issues in Africa. This phenomenon cannot be sufficiently explored through numerical data.

3.5 A case study research design

A comparative case study approach was used to illustrate the similarities and differences between the civic tech ecosystem in each country and how it enhances governance. The case study research design can be described as a research approach that enables a researcher to study a real phenomenon through detailed contextual analysis of context, other complex conditions, and their relationships using various data sources (Baxter & Jack, 2008; Chopard & Przybylski 2021; Creswell, 2013; Yin, 2012a; Zainal, 2017). The country case study method aimed to provide a detailed analysis of the phenomenon and gain an understanding of Nigerian and South African civic tech idiosyncrasies. In this study, the case study method offered an in-depth reality of civic tech and multiple perspectives on the complexity and uniqueness of civic tech and its contribution to the two countries (Simons, 2009, in Mohajan, 2018; Tomaszewski et al., 2020).

Yin (2018b) established three types of case studies: descriptive, exploratory, and explanatory. These may be conducted for various and overlapping purposes (Chopard & Przybylski, 2021). The literature indicates that case studies allow the researcher to gain a comprehensive and holistic view of the main research problem (Baškarada, 2014). This case study was conducted for descriptive and explanatory purposes, including describing civic tech to provide a clear picture and explaining how civic tech influences governance in Nigeria and South Africa. A descriptive analysis of the African civic tech ecosystem preceded the case study.

3.6 Data collection and sampling

Creswell (2013) explained that good qualitative case studies offer deep insights into the case. Researchers achieve this by combining data collection methods, as multiple data sources can help develop a deeper understanding of the phenomenon. Data collection for this study involved both primary and secondary data. This study followed a two-stage method. The first focused on exploring the evolution of the African civic tech movement by analysing the African civic tech database to provide historical, contextual and background information. The secondary data constitutes the African civic tech database. The database was developed to serve as a centralised database of information about existing and upcoming civic tech projects, organisations, and initiatives (CTIN, 2018). The

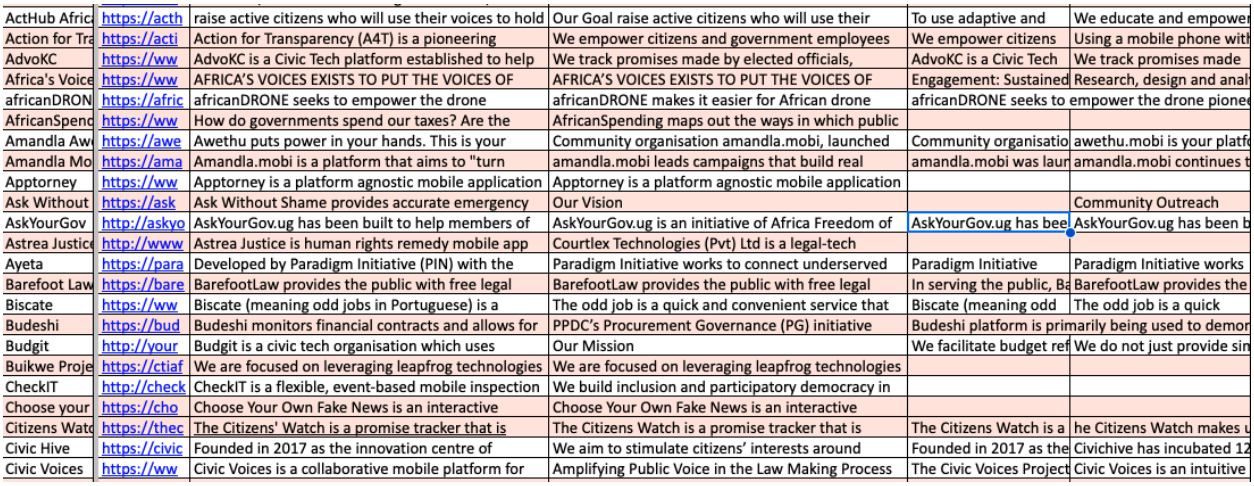
researcher was responsible for curating the database from its inception in 2018 to January 2023. To better understand civic tech and its contribution to governance, the second stage focused on two countries, using data from the database, and collecting data through semi-constructed interviews with experts in the industry. This method of collecting data from multiple sources, is termed 'data triangulation' (Carter et al., 2014), assists the researcher in collecting more comprehensive information and cross-checking its consistency to enhance the robustness of findings.

3.6.1 Database: The African civic tech database

This study used the African civic tech database, *"a Community of Practice and action learning network for people with an interest and commitment to leveraging the nexus between technology and civic activism,"* to gain insights into African, Nigerian, and South African civic tech (CTIN, n.d). CTIN is a project at the Wits School of Governance. The database began in 2018 as a living directory of civic tech South African projects and innovators and was expanded to include the rest of Africa in 2019.

The aim was to collect and document the African civic tech and an ecosystem where civic tech actors can find each other, enable greater visibility and legibility of the field, and increase opportunities for actors to learn, share information and find suitable collaborators. The database is online and public and allows civic tech initiatives to submit information about their projects. Through this database, CTIN creates awareness and builds knowledge about the civic tech ecosystem by collecting, sharing, and exhibiting the documented initiatives for peer-to-peer learning. The secondary aim of the database was to create a resource for research to better understand civic tech in Africa and consider future opportunities for the ecosystem. The database is viewed as a research artefact which can lead to insights and produce new knowledge about the African civic tech ecosystem. Most of the database is accessible through CTIN's website. Since the researcher was the leading curator, the researcher was able to extract the contents of the database in a Google Sheet format (Figure 10 below).

Figure 10: *A screenshot of the African civic tech database*



ActHub Afric	https://acth	raise active citizens who will use their voices to hold	Our Goal raise active citizens who will use their	To use adaptive and	We educate and empower
Action for Tra	https://acti	Action for Transparency (A4T) is a pioneering	We empower citizens and government employees	We empower citizens	Using a mobile phone with
AdvoKC	https://ww	AdvoKC is a Civic Tech platform established to help	We track promises made by elected officials,	AdvoKC is a Civic Tech	We track promises made
Africa's Voice	https://ww	AFRICA'S VOICES EXISTS TO PUT THE VOICES OF	AFRICA'S VOICES EXISTS TO PUT THE VOICES OF	Engagement: Sustained	Research, design and anal
africanDRON	https://afric	africanDRONE seeks to empower the drone	africanDRONE makes it easier for African drone	africanDRONE seeks to empower the drone pione	
AfricanSpend	https://ww	How do governments spend our taxes? Are the	AfricanSpending maps out the ways in which public		
Amandla Awe	https://awe	Awethu puts power in your hands. This is your	Community organisation amandla.mobi, launched	Community organisatio	awethu.mobi is your platf
Amandla Mo	https://ama	Amandla.mobi is a platform that aims to "turn	amandla.mobi leads campaigns that build real	amandla.mobi was laur	amandla.mobi continues t
Apptorney	https://ww	Apptorney is a platform agnostic mobile application	Apptorney is a platform agnostic mobile application		
Ask Without	https://ask	Ask Without Shame provides accurate emergency	Our Vision		Community Outreach
AskYourGov	http://askyo	AskYourGov.ug has been built to help members of	AskYourGov.ug is an initiative of Africa Freedom of	AskYourGov.ug has bee	AskYourGov.ug has been b
Astrea Justice	http://www	Astrea Justice is human rights remedy mobile app	Courtlex Technologies (Pvt) Ltd is a legal-tech		
Ayeta	https://para	Developed by Paradigm Initiative (PIN) with the	Paradigm Initiative works to connect underserved	Paradigm Initiative	Paradigm Initiative works
Barefoot Law	https://bare	BarefootLaw provides the public with free legal	BarefootLaw provides the public with free legal	In serving the public, Ba	BarefootLaw provides the
Biscate	https://ww	Biscate (meaning odd jobs in Portuguese) is a	The odd job is a quick and convenient service that	Biscate (meaning odd	The odd job is a quick
Budeshi	https://bud	Budeshi monitors financial contracts and allows for	PPDC's Procurement Governance (PG) initiative	Budeshi platform is primarily being used to demor	
Budgit	http://your	Budgit is a civic tech organisation which uses	Our Mission	We facilitate budget ref	We do not just provide sin
Buikwe Proje	https://ctiaf	We are focused on leveraging leapfrog technologies	We are focused on leveraging leapfrog technologies		
CheckIT	http://check	CheckIT is a flexible, event-based mobile inspection	We build inclusion and participatory democracy in		
Choose your	https://cho	Choose Your Own Fake News is an interactive	Choose Your Own Fake News is an interactive		
Citizens Wate	https://thec	The Citizens' Watch is a promise tracker that is	The Citizens Watch is a promise tracker that is	The Citizens Watch is a	he Citizens Watch makes u
Civic Hive	https://civic	Founded in 2017 as the innovation centre of	We aim to stimulate citizens' interests around	Founded in 2017 as the	Civichive has incubated 12
Civic Voices	https://ww	Civic Voices is a collaborative mobile platform for	Amplifying Public Voice in the Law Making Process	The Civic Voices Project	Civic Voices is an intuitive

Source: Researcher's own

3.6.2 Semi-structured interviews

According to Wahyuni (2012), the main feature of an interview is to facilitate discovery of narratives and experiences regarding a particular social phenomenon being observed by the interviewer. The interviews aim for participants to share their knowledge and experiences with the researcher. The semi-structured interview method was suitable for this study as it enabled the researcher to obtain empirical data on the phenomena. The researcher interviewed civic tech actors in civic tech communities in the two countries, working at the intersection of civic tech and governance principles. The researcher interviewed 15 civic tech actors representing 15 organisations, eight for Nigeria and seven for South Africa. This sample was identified as core actors with relevant expertise and experience in the civic tech field, therefore they were representative cases of the country's civic tech ecosystem. This sample represented the broad contours of civic tech ecosystems in Nigeria and South Africa.

The research dimensions require detailed information and a deeper understanding of civic tech and its contribution to governance. Therefore, interviews are suitable for this study as they enabled the researcher to define the topics to be explored and allow the participants to share and explore their perspectives in more detail.

The researcher outlined an interview procedure for this study, including an interview guide (Appendix 1) with the research questions, sub-questions, probes, and the interview process. The interview guide helped the interviews as it contained predefined themes derived from the literature and background of the study. The interview guide ensured that the researcher and participants consistently focus on the research question and its three dimensions. It provided structure and flexibility to enable them to raise undetermined topics relevant to the study in the interview conversations.

3.6.3 Non-probability purposive sampling

The study used the non-probability purposive sampling method based on the study's objectives. Purposive sampling is exercised to pick information-rich cases based on their matched criteria to those required to answer the research questions (Ilker et al., 2016). The purposive sampling strategy allowed the researcher to select information-rich samples, providing rich insight into the research problem. The sample for this study was identified based on civic tech and governance definitions. The interview participants were actors with expertise in civic tech. The interviews were not for the organisations but for their expertise as leaders in the civic tech ecosystem. At the beginning of the research, most of the study participants were selected using the database. The researcher also used the snowball sampling, where she requested suggestions from the initial list when she could not identify additional suitable participants. Other participants suggested some participants, and the researcher determined their suitability and were selected for the study.

3.7 Data analysis

Literature highlights that qualitative data analysis can be understood as a researcher's process to generate an in-depth and meticulous understanding of the phenomenon. Data analysis brings meaning to research data (Lester et al., 2020). Mohajan (2018) explained that data analysis is a dynamic process weaving together the emerging themes, key ideas, or units of meaning and material acquired from the data. The study used a combination of content analysis for the database and thematic analysis for the interviews.

Content analysis and thematic analysis allowed the researcher to construct themes and meanings specific to the study, including a combination of approaches and steps to analyse and interpret textual data (Vaismoradi et al., 2016).

3.7.1 Content analysis

The study began with a content analysis of the African civic tech database, listing over 240 civic tech initiatives, projects, and organisations. As literature has established, civic tech is a transnational, cross-sector movement. This study viewed African civic tech as one movement with various and similar components. The analysis aimed to provide an overview of the civic tech landscape and an in-depth case study of the two countries. Content analysis significantly enabled a better exploration of the evolution of the African civic tech movement through analysis of the civic tech database to provide historical, contextual and background information.

The researcher developed a codebook, (Appendix 2), representing the core themes of the study. In the codebook, each code was assigned a label, a definition or description to guide how to apply the code, and, where applicable, examples of the texts. The initial database coding followed the structure created by CTIN, which included a high-level codebook of the database structure, (Appendix 3).

The process began with refining the Google Sheets database to prepare it for the research. This included restructuring the data format according to the research dimensions and removing inapplicable data. For example, the database included information on organisation partners, founding year, contact details, project status and preassigned categories. This information was excluded due to incomplete data, privacy considerations, and incompatibility with the study's objectives. The second step included various restructuring activities, including separating information, creating new categories based on the research dimensions and creating a new structure to enable the suitability for the study. This included additional data collection from the initiatives' websites where information was incomplete, adding new categories to the data including mission and

vision statements, descriptions, and updating any incorrect information with correct information from the websites and organisations' data.

The researcher conducted the analysis process three times to refine and ensure the validity and reliability of the results. This included an iterative process focusing on coding and recoding the data and refining categories and definitions. For instance, the first coding iteration resulted in 82 codes with broad and minor categories. These were further grouped into seven categories. These categories were too broad and not connected to the research objectives. The second iteration resulted in four main categories: governance principles (citizen participation and engagement, accountability and transparency), governance issues and functions, organisational objectives, and approaches and activities. These categories included at least six subcategories each. Before compiling and writing the analysis, another iteration was undertaken, specifically focused on revisiting the coded data and reviewing to look for possible coding errors such as duplication, which were removed. These iterations enabled the researcher to condense the data into broad descriptive and meaningful categories, finding recurring concepts and connections within the data, enabling the researcher to understand the African civic tech ecosystem and find comparisons and contrasts between the country case studies.

3.7.2 Thematic analysis

According to Maguire and Delahunt (2017), thematic analysis identifies patterns or themes within qualitative data. A thematic analysis aims to identify themes, ie, patterns in the data that are important or interesting and use these themes to address the research or describe an issue. According to Lester et al. (2020), thematic analysis enabled the researcher to produce broad descriptive statements reflecting their overall understanding of the data and responding to research questions. The researcher conducted nonlinear and iterative processes, which included phases like data preparation and organisation, transcribing the data, coding the research data, initial analysis, categorising, identifying themes and assigning meaning to the data.

According to Maguire and Delahunt (2017), in thematic analysis the researcher is considered a research instrument, as the researcher's ability to understand, describe and interpret experiences and perceptions is critical to uncovering meaning in particular circumstances and contexts. The final themes emerged from three sources: the literature, the database, and the analysis of the interview participants' statements and comments. The final themes included various subthemes, and most were somewhat connected.

3.7.3 Inductive reasoning

The study adopted inductive approaches to allow the research findings to emerge from frequent, dominant, or significant themes inherent in the raw data. It allowed the researcher to use predefined codes to create themes and draw insights from the data. The interviews were analysed using inductive reasoning, allowing the researcher to make observations and create generalisations about civic tech in Nigeria and South Africa. According to Azungah (2018), inductive analysis is a process that requires the researcher to extrapolate concepts and themes from a thorough understanding of the raw data. The researcher analysed the data, assigning codes relevant to the study.

3.7.4 Coding research data

Codes are the themes, topics, or concepts that emerge as repetition across multiple transcripts. The researcher used two qualitative data analysis software packages, Nvivo and Atlas.ti, to code, assist and support her in analysing the data. Atlas.ti was used in the first iterations of the database coding. The researcher switched to Nvivo in the final stages, as Nvivo was more user-friendly, particularly working with a Microsoft Excel spreadsheet, allowing her to revisit the data and conduct further iterations of coding. This enabled her to combine, reduce and select the thematic categories. The interviews were coded on Atlas.ti. Coding the data with labels, themes, short descriptors, and paragraphs enabled her to clean the raw data, sort, compare, explore, and connect the data with the research question to extract, examine and identify emerging themes from the data (Busetto et al., 2020).

3.7.5 Data storage, transcription and refinement

Before the database was finalised for this study, it included approximately 240 organisations, projects and initiatives documented over several years of desktop research by the researcher and self-submissions by the organisations. After evaluating the database list, it was reduced to 189 organisations, projects and initiatives. Some organisations were excluded from the study, as their objectives were not geared towards serving the community, social good, or related to the civic aspect of civic tech; this means commercial companies identifying themselves as civic tech while selling services were excluded. The clean-up included a targeted search for civic tech initiatives unlisted on the database to include as many civic tech-relevant projects as possible, particularly for countries which were underrepresented in the database. The target search included reviewing research papers, news articles, and Google search results.

Considering the ethical requirements of this study, the interview recordings and transcriptions are kept on a password-protected computer and stored on Dropbox, which is only accessible to the researcher. The transcripts and recordings have been assigned pseudonyms. While other interview participants opted out of anonymity, the researcher used pseudonyms for uniformity. The researcher transcribed interviews and reviewed them for accuracy while deleting unrelated details using Nvivo. The data transcription and refinement enabled the researcher to decide what to include and exclude. The transcription increased the researcher's familiarity with the interview content and context.

3.8 Research ethics

The researcher adhered to the University's research ethics and conduct. Ethical clearance from the Faculty of Humanities was received on 12 May 2022 (Appendix 4). The researcher followed the faculty's rules and guidelines for research, including human participants and personal information. This included preparing a participation information sheet and informed consent form (Appendices 5 and 6) to explain the purpose of the research to the participants. The researcher used the consent form to offer participants options for anonymity and identification, as the researcher would be using some

identifying information and extracts in the research report. Research participants were required to sign the consent form before the interview.

The researcher is associated with some of the research participants, as she works in the civic tech field. Therefore, informed consent was imperative for the study and the participants. She explained to participants before each interview that they could withdraw from participating in the study at any time. Participants consented to participate fully. Before conducting the interviews, she completed the Introduction to Research Ethics module offered by the Training and Resources in Research Ethics Evaluation to deepen her understanding of research ethics (Appendix 7). The researcher used digital methods like interviews on Zoom for data collection and requested permission to record the interviews. The research participants were informed that their information would be handled confidentially. The researcher did not require permission letters from the participants, as the research outputs were anonymised.

3.9 Limitations of research

The researcher was responsible for collating the African civic tech database and may therefore have preconceived ideas and biases about the African civic tech field. The use of non-probability sampling limits the generalisation element of the study, as it will only offer an understanding of civic tech initiatives focused on governance in the two countries. The researcher used data triangulation methods like different data collection methods (interviews and database) and inductive data analysis to moderate potential researcher bias.

Other limitations stemmed from the availability of information about many of the civic tech organisations listed in the data, as some organisations do not list their mission and vision statements, goals, founders or founding dates. Some organisations' websites are published in foreign languages. As the researcher does not speak these languages, she used and depended on Google Translate to translate these websites. While Google Translate is accessible and useful, it can show the complexity of the text and some context and details could have been lost in translation. This resulted in limited descriptive

data about North African civic tech initiatives and initiatives from French-speaking African countries. Therefore, the database contains a fraction of African civic tech.

Chapter 4: Civic tech in the Nigerian and South African governance field

This chapter presents data collected from research sources, database artefacts and interviews. The chapter is structured into two broad sections. First, is a summary of the initial interpretations from the data analysis to reveal Africa's broad civic tech landscape. Second, the country case studies are presented, focusing on their civic tech ecosystems. Drawing on information analysed in the civic tech database, the researcher has developed a profile of civic tech organisations, focus areas and activities, by identifying the drivers, contribution to governance and any notable patterns.

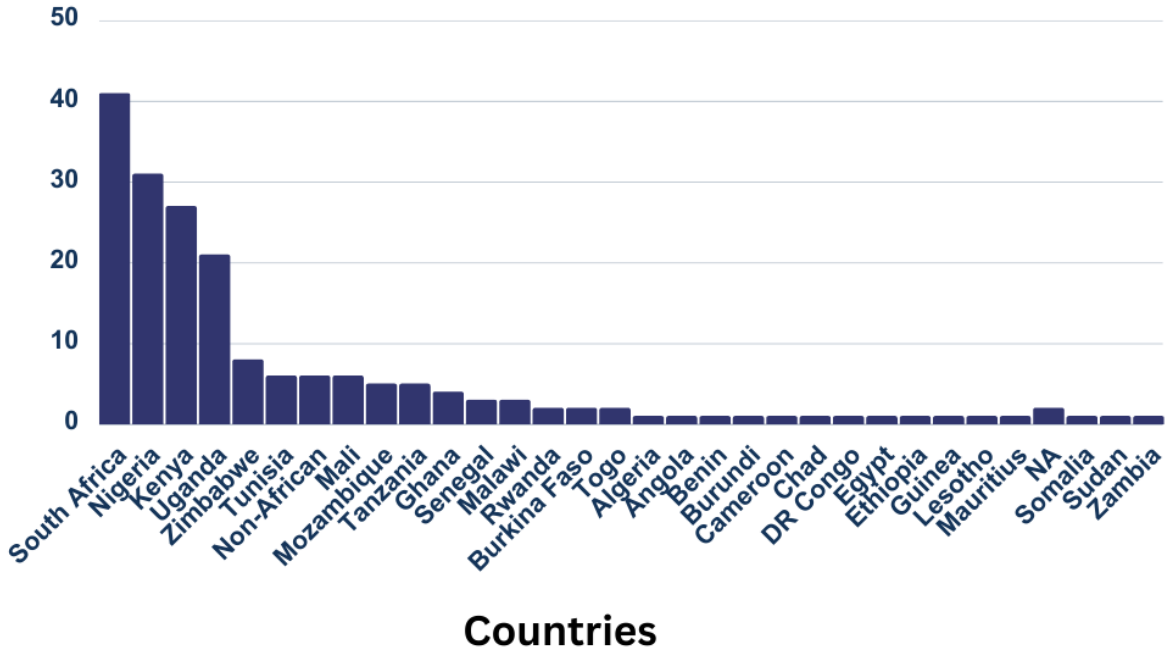
The following section provides a profile of the African civic tech database containing 189 projects, initiatives, and organisations and 15 interviews with Nigerian and South African civic tech actors, conducted between August 2022 and January 2023. The following interpretation of the African civic tech ecosystem was extrapolated from the database.

4.1 Tracing and mapping the African civic tech ecosystem

This section presents a synthesis of the African civic tech field based on qualitative data from the African civic tech database. Given the paucity of studies focusing on African civic tech, this section aims to reduce the gap and contribute a landscape analysis. The African civic tech database is the largest catalogue of projects, initiatives and resources covering the full breadth of the African civic tech field. The database was significant for this study as it provided foundational data to build a better understanding of the development of the civic tech landscape. Consequently, the database helped the researcher explore what is happening in Africa's civic tech and civic innovation field to see who is involved, what they are doing, and what successes and challenges they are facing.

The database provided detailed information about civic tech initiatives from 31 African countries. It included several initiatives headquartered in non-African countries, including the USA, France, the UK and from unspecified countries operating in several African countries. Figure 11 below illustrates the countries represented in the database.

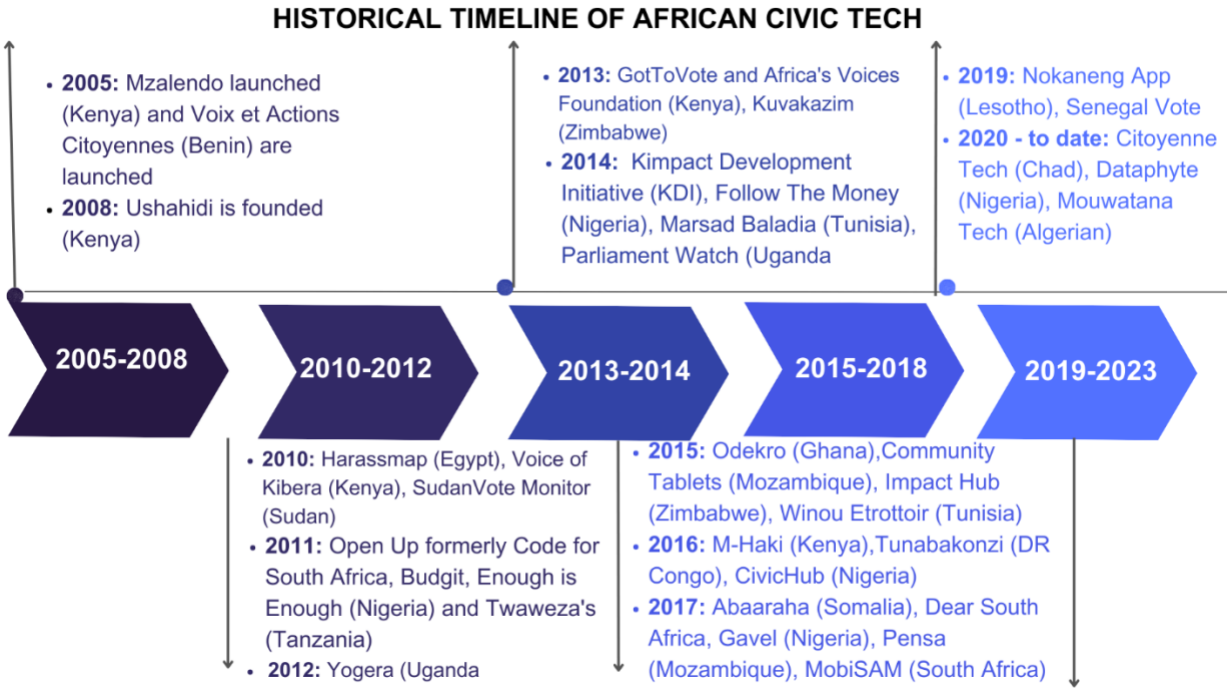
Figure 11: *African countries with a civic tech presence*



Source: Researcher's own

The data reveals that civic tech organisations are concentrated in countries considered digital leaders with active, innovative ecosystems, like South Africa, Nigeria, Kenya, and Uganda. The database reveals that other countries, including Zimbabwe, Tanzania, Mozambique, Mali, and Tunisia, have an emerging or flourishing civic tech community. Figure 12 below shows the evolution of civic tech across the continent. The database lists less than 20 civic tech organisations for many of these countries. This indicates limited data on civic tech ecosystems in these countries. This could be due to biases in the data, like language barriers, CTIN's community and contacts, and knowledge about specific countries (Lynge-Mangueira, 2021).

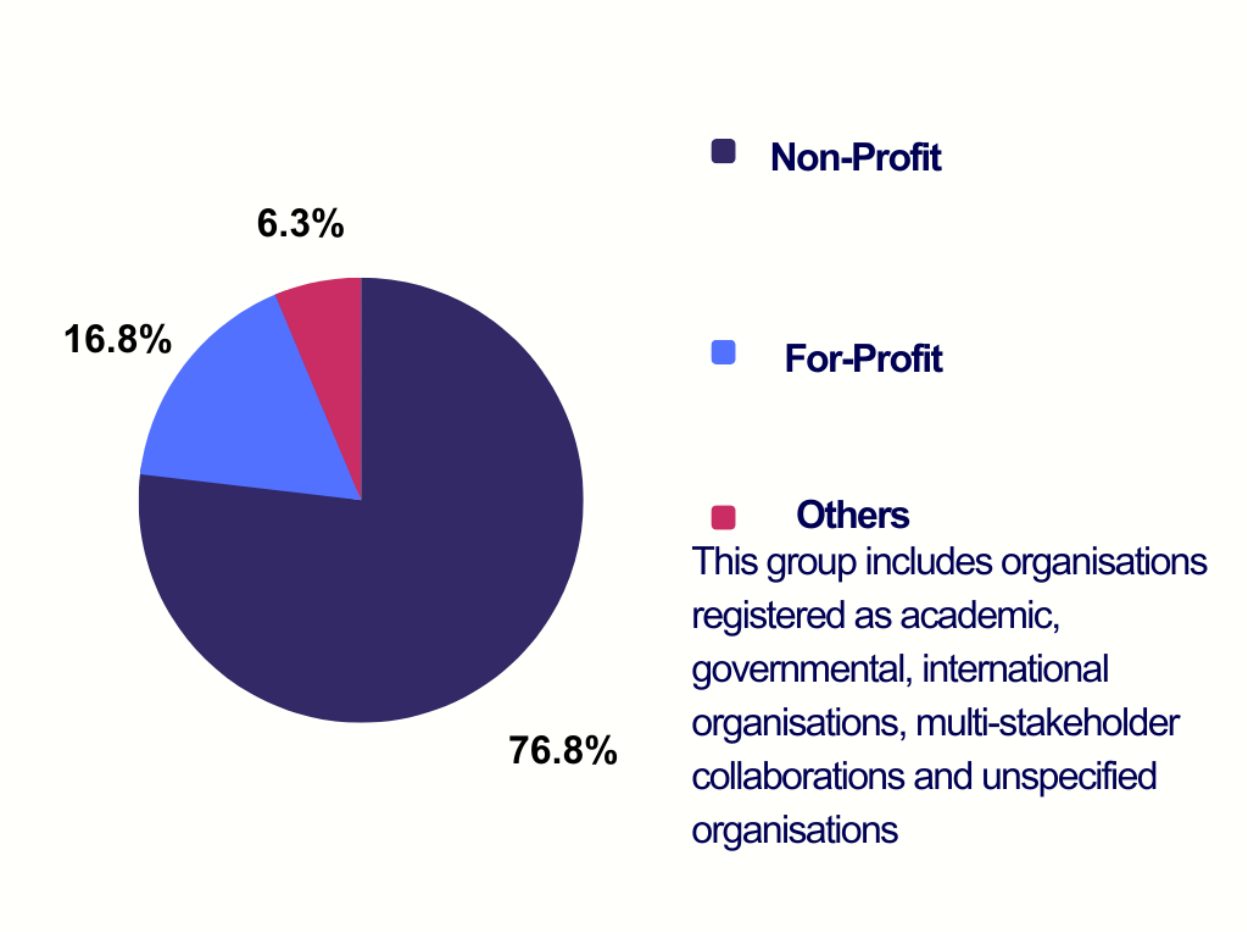
Figure 12: *Evolution of African civic tech*



Source: Researcher's own

Across Africa, many organisations are working to support efforts to improve governance and enhance governance systems. Five types of organisations were established during the content-coding process. Most civic tech organisations are registered as non-profit organisations, while 17% are registered as for-profit organisations (Figure 13 below). The remaining projects were established as multi-stakeholder collaborations between government and civic tech organisations, with governments, international organisations, and academic institutions being the project's owners. Some did not include information on what type of organisation they are.

Figure 13: *Types of civic tech organisations*

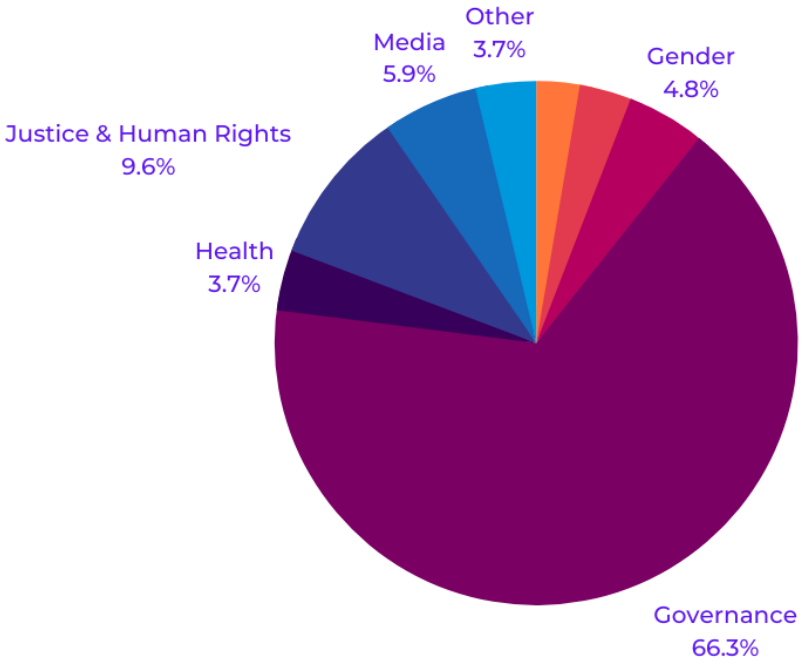


Source: Researcher's own

4.1.1 The governance focus of civic tech organisations

An overwhelming number of the studied initiatives focus on governance (Figure 14 below).

Figure 14: *Projects' sector focus areas*



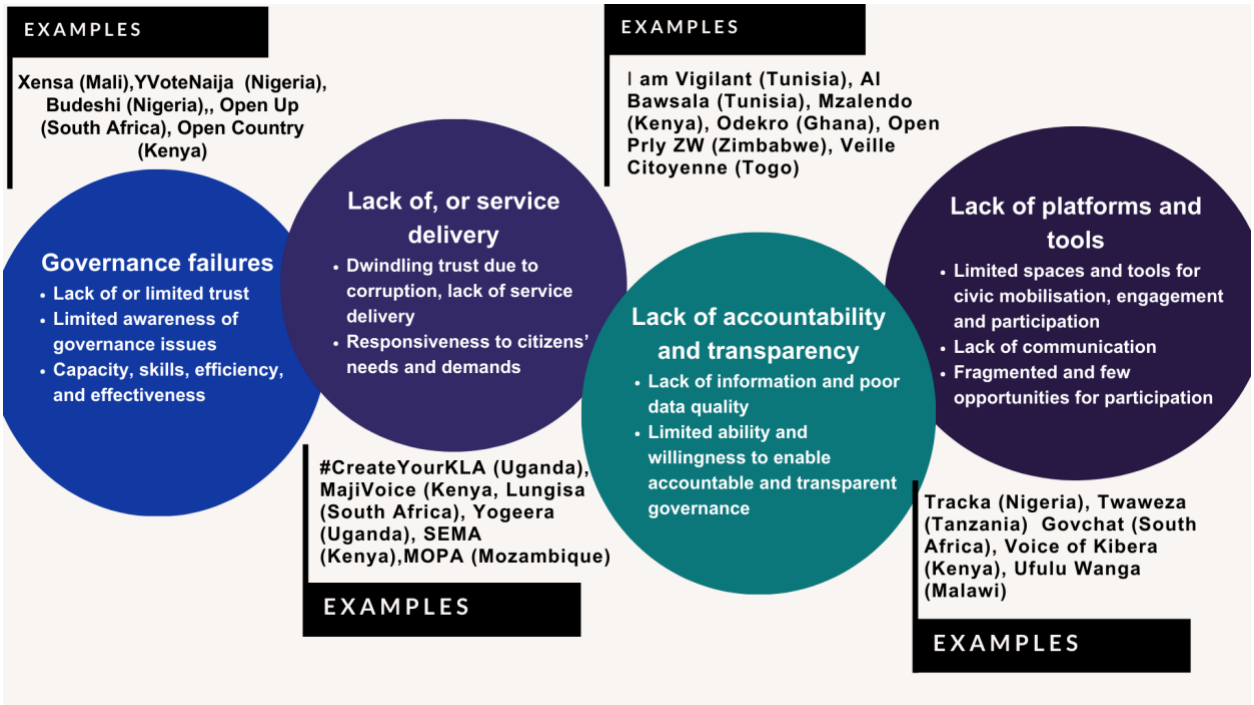
Source: Researcher's own

Analysing the database allowed the researcher to identify the functions and issues often dedicated to addressing civic tech working in the governance sector. These could be grouped into four broad areas: failures and inefficiencies in government; lack of service delivery; lack of transparency and accountability; and lack of platforms and tools for citizen mobilisation, and citizen engagement and participation (Figure 15 below).

Civic tech organisations focused on government failures often concentrate on the lack of or limited trust in government institutions and stakeholders, little awareness of governance issues, and limited capacity, skills, efficiency, and effectiveness in government. The second group is concerned with the lack of or poor service delivery of public services and the absence of or limited government responsiveness to citizens' needs and demands. The third group focuses on the lack of accountability and transparency. This includes issues like the lack of information and quality data about government activities and citizenship, lack of trust in government institutions and

government stakeholders to enable accountable and transparent governance, and limited access to information about elections and voter education in different and accessible formats. The final group is a core theme across countries represented in the database: the lack of platforms and tools. This group refers to the lack of tools for meaningful citizen engagement (citizen-to-citizen or citizen-to-government engagement) and participation and spaces for citizens to mobilise and advocate for better governance and community issues. This group is further concerned with the lack of communication between citizens and government and the low participation of marginalised groups in governance processes.

Figure 15: *Overview of the governance issues*



Source: Researcher's own

Initial interpretations of the study indicate that the four main governance issues are connected. Civic tech organisations often focus on more than one issue. For example, many civic tech organisations connect the limited awareness of the extent of governance issues to the limited access to information and tools for civic mobilisation to demand better governance and community issues. They create platforms and tools to inform citizens of

governance challenges and provide information and channels for better collective civic mobilisation. The central emerging idea is to educate and enable active citizenry that advances accountability and transparency, citizen participation and engagement in governance processes while supporting government institutions in areas like capacity building, efficiency, to enhance governance processes.

4.1.2 The initiatives' objectives

Given the state of governance in many African countries, the objectives and goals of the initiatives included in this study indicate that their objectives are closely linked to the existing governance issues in their countries. The initiatives are concentrated on objectives that could be grouped into four groups (Appendix 8 below). The first group is focused on citizen empowerment, referring to organisations focused on improving the lives of citizens by providing them with tools and access to information to demand access and services. The second group is concerned with helping governments change, adapt and evolve with the digital times and improve the relationship between government and citizens by enhancing service delivery and responsiveness. The third objective is to promote accountability and transparency, and good governance by providing access to information through open data tools, monitoring government activities, and informing citizens and stakeholders like CSOs and media. The fourth objective is focused on facilitating and deepening citizen engagement and participation in decision-making, particularly in policy issues, service delivery matters, and supporting two-way communication between citizens and government.

4.1.3 Reviewing approaches and activities of civic tech organisations

The database analysis enabled the researcher to identify how civic tech organisations conduct their work by exploring the approaches and activities civic tech initiatives use to contribute to the evolution of governance. The researcher established six main approaches, with activities under each approach. Content analysis of these initiatives and their practices reveals that civic tech organisations often employ more than three approaches to undertake their work. These could be broken into the following activities:

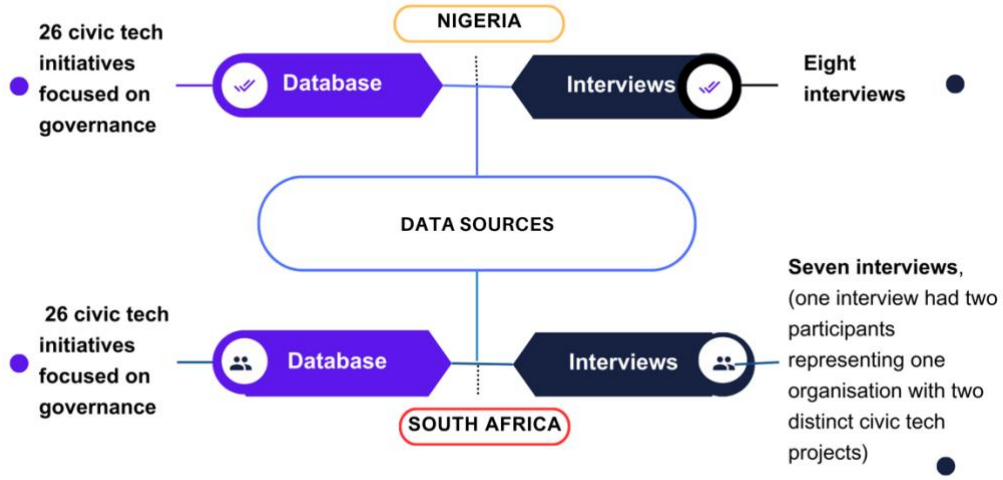
- **Approach 1: Developing, creating, and providing tools and platforms:** This refers to organisations which build, design, and provide tools and platforms for citizens to undertake various activities like:
    - Accessing open data resources,
    - Reporting service delivery issues or corruption,
    - Researching and requesting information on government or representatives,
    - Communicating with government and citizens,
    - Providing digital tools for citizens to engage and participate,
    - Monitoring government activities.
- **Approach 2: Working with government institutions:** This includes civic tech organisations concentrating on government issues and collaborating to solve government challenges like lack of innovation, capacity, skills, and infrastructure. This involves civic tech organisations.
    - Capacitating government departments and strengthening the institutions' skills and capacity,
    - Working with government reform or building new public service delivery systems enables government to monitor service delivery to strengthen effective, more efficient and responsive public service delivery,
    - Working with government creates accountability and transparency tools.
- **Approach 3: Government oversight and monitoring:** This approach includes organisations focused on accountability and transparency, including
    - Monitoring government expenditure, promises, service delivery, and sharing that work with citizens or the CSOs communities,
- **Approach 4: Collecting data and sharing information:** This refers to activities focused on collecting governance information, like:
    - Election information, government information on parliamentarians, proposed bills and policies, parliament proceedings and sharing the information through mainstream media, social media, data visualisations and maps to inform citizens and encourage citizen response.
- **Approach 5: Civic empowerment:** This focuses on several areas, including:

    - Educating citizens about their rights; government activities which could infringe on them; and how citizens can demand their rights. The main aim of this approach is to raise awareness and empower citizens with the correct information to hold government leaders accountable, demand transparency, support beneficial policies, and actively participate in the governance processes.
- **Approach 6: Research, training, and support**:
    - This approach refers to civic tech organisations researching governance issues to find or recommend the best solutions,
    - This approach includes gathering and sharing public input with citizens and government decision-makers to provide robust evidence on governance challenges faced by citizens.

4.2 Case studied: Insights on the convergence of civic tech and governance in Nigeria and South Africa

This section presents the research data from two sources, the database and data gathered during 15 semi-constructed interviews with civic tech actors. The section is separated into cases: Nigeria and South Africa. For each case, the researcher presents a brief overview of the country's civic tech ecosystem and its characteristics on the database and interviews, followed by participants' insights on the drivers of civic tech, the intersection of governance issues and challenges affecting the civic tech community. To provide uniformity and anonymity, participants have been assigned pseudonyms. For instance, Nigerian participants will be given pseudonyms ranging from NIG01 to NIG08, while South African participants will be SA01 to SA07 (Figure 16 below).

Figure 16: *The study's data sources.*



Source: Researcher's own

4.3 Case: Characteristics of Nigerian civic tech organisations in the governance sector

In Nigeria, digital technologies have transformed civic action, such as protests, and amplified the voices of marginalised communities such as women, youth, and minority groups as noted by Oladapo and Ojebode (2021) (Figure 17 below). For instance, #OccupyNigeria was one of the first significant protests that the civic space mobilised using digital tools and social media (Oladapo & Ojebode, 2021). The online movements are deeply connected to grassroots movements and foundations laid by civil society and non-governmental organisations (Ojedokun, 2016).

Figure 17: *Key digital hashtag campaigns in Nigeria*

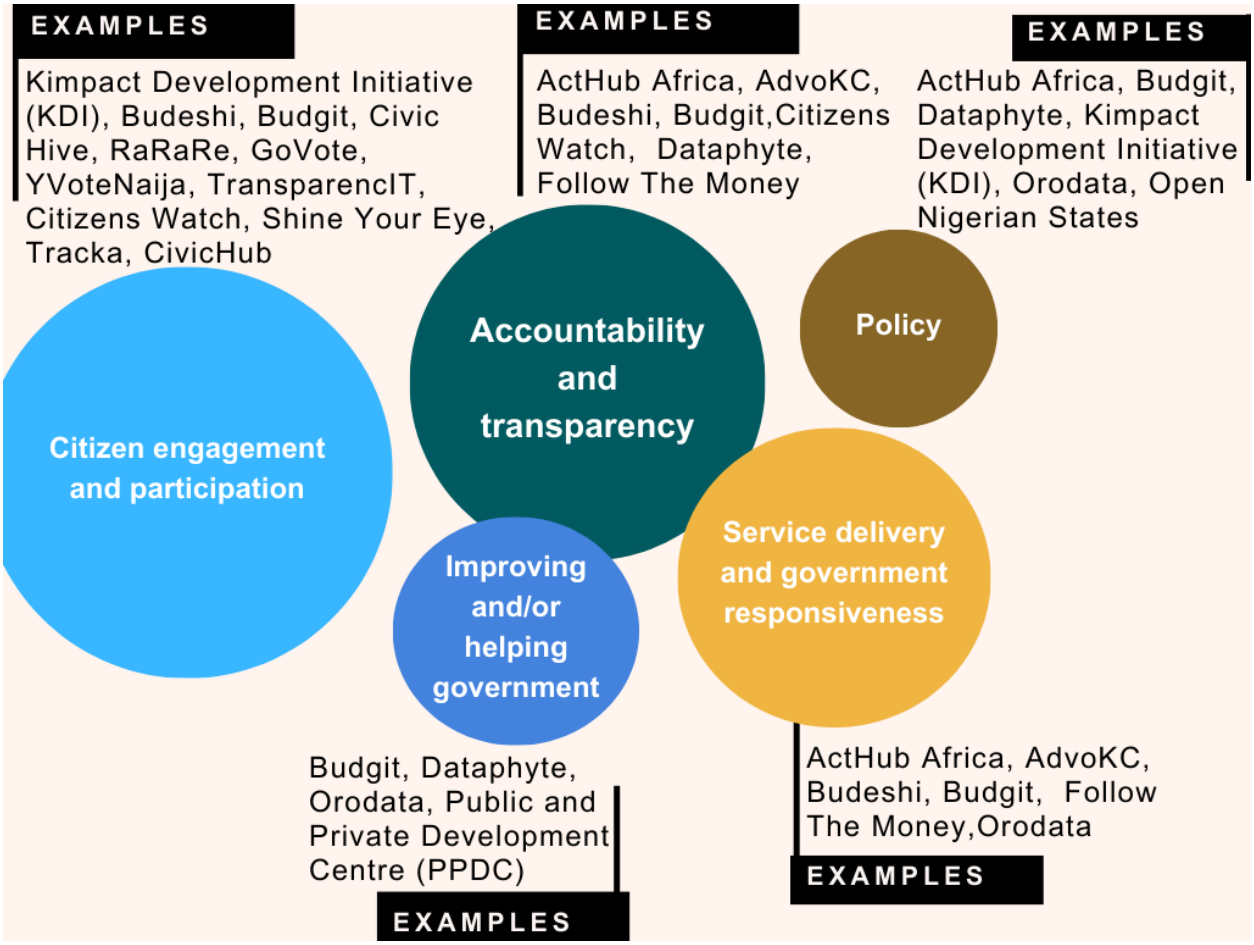
Year	Hashtag	Actor
2012	#OccupyNigeria	Opposition politicians, celebrities, and activists
2014	#BringBackOurGirls	Bring Back Our Girls movement
2015, 2019	#NoToSocialMediaBill	Social media influencers
2017	#ENDSARS	Social media influencers
2019	#SexForGrade	BBC, social media influencers
2019–2020	#Buharimustgo	Social media activists

Source: Oladapo and Ojebode (2021)

Nigeria is a vast country with a growing population faced with significant governance challenges. The data reflects that governance issues underpin the work of many Nigerian civic tech organisations. The database recorded 31 civic tech organisations, of which 26 are in the governance sector. Content analysis of the 26 organisations' descriptions, mission and vision statements, indicates that their work is focused on six governance functions (Figure 18 below). While civic tech on the continent encompasses wider contexts, the data indicates commonalities between the focus areas of Nigerian civic tech initiatives and the focus areas of the initiatives on the African database.

Like the continental profile, most projects focus on citizen engagement and participation, followed by transparency and accountability, service delivery and government responsiveness, and policy. Compared to the governance challenges facing Nigeria the profile of civic tech organisations is influenced by the country's challenges. The data reveals that the projects are often focused on multiple areas of governance, as their primary goals are to develop, improve or advance a culture of good governance in all areas.

Figure 18: *Distribution of Nigerian civic tech*

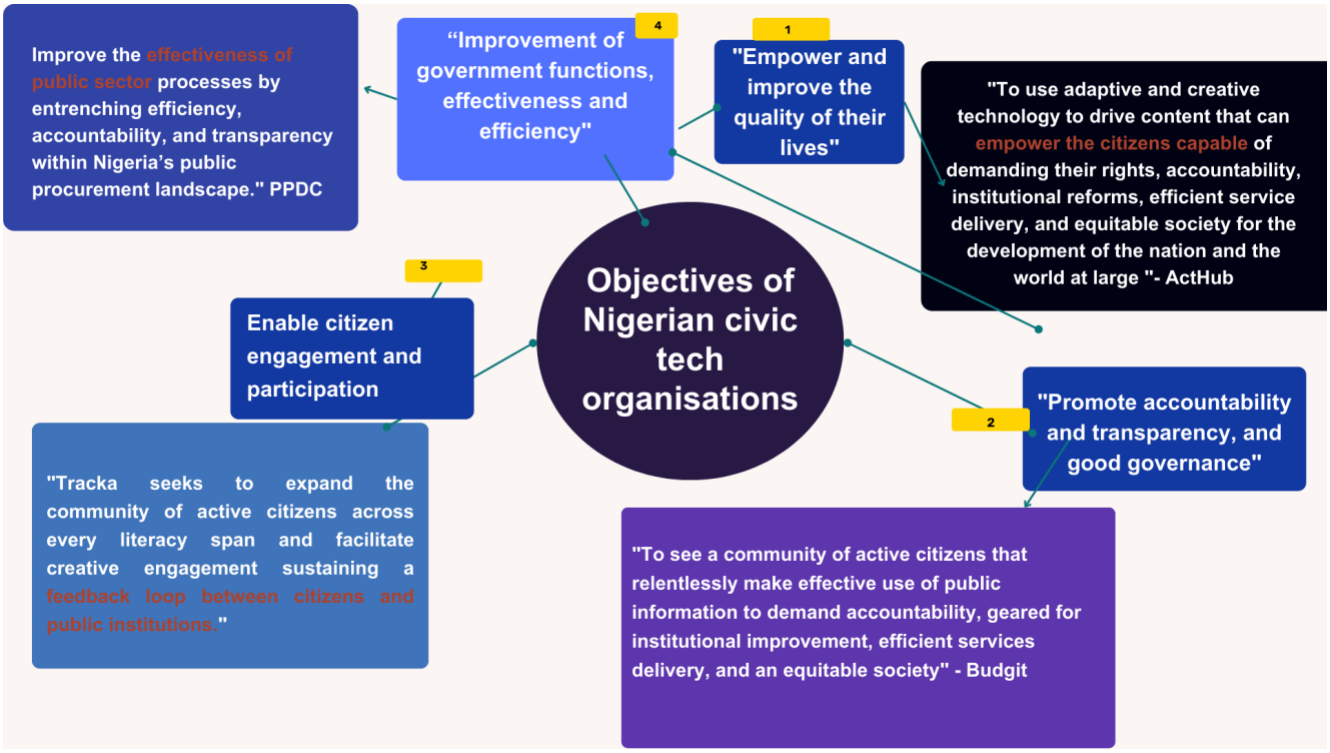


Source: Researcher's own

4.3.1 Reviewing the objectives and goals

The data analysis illustrates four objectives prioritised by Nigerian organisations in the order reflected in Figure 19 below.

Figure 19: *Four objectives of Nigerian civic tech organisations*

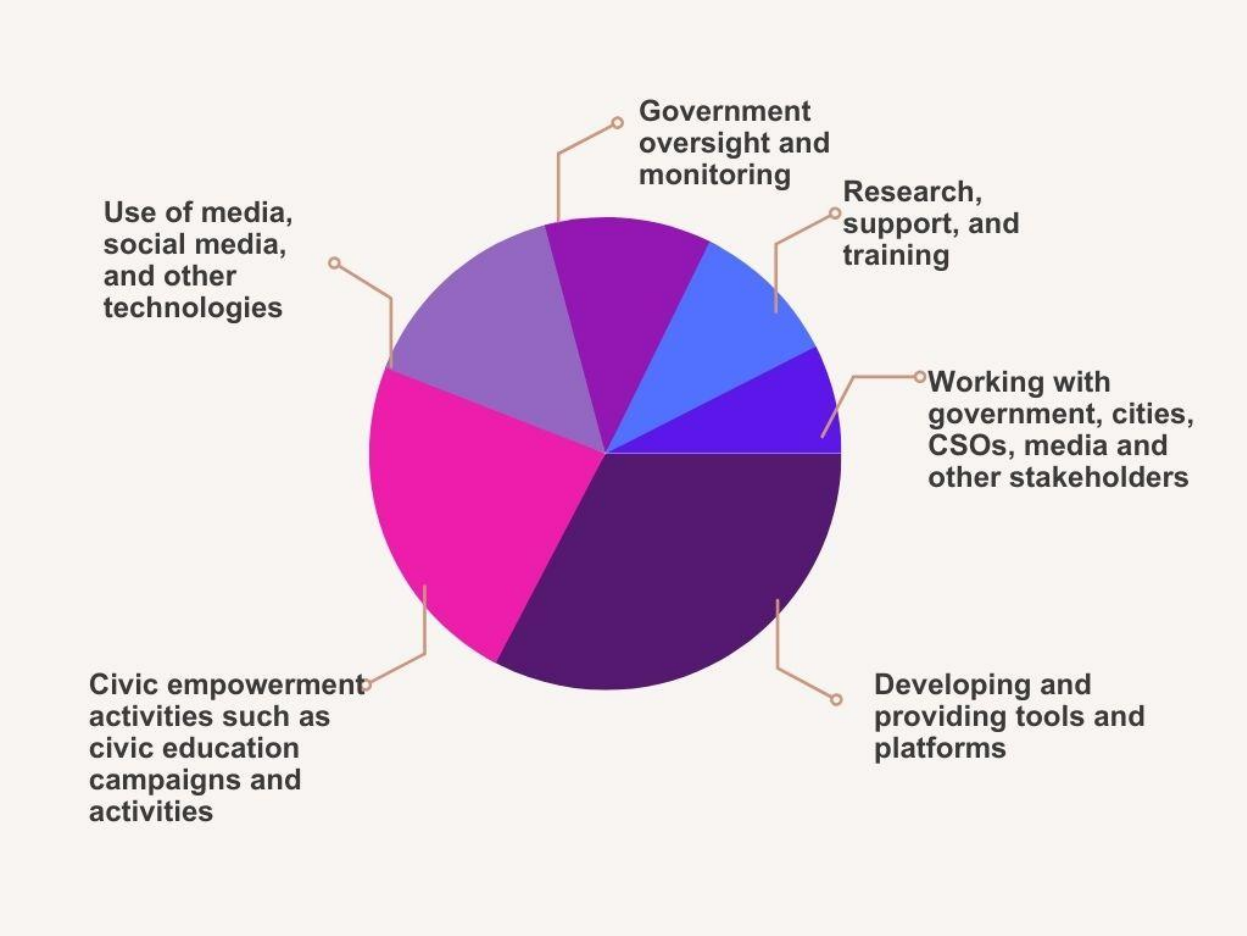


Source: Researcher's own

4.3.2 Reviewing the approaches and activities

Nigerian civic tech organisations typically adopt more than various approaches and activities to undertake their work. However, the data indicates that at least 83% of the 26 organisations develop and provide tools for citizens. The top five methods are illustrated in Figure 20 below. There is a significant overlap in all the approaches and activities between the African initiatives and the Nigerian initiatives, while organisations may combine the approaches differently, they ultimately employ the six approaches in their work to some extent.

Figure 20: *Nigeria: Approaches and activities*

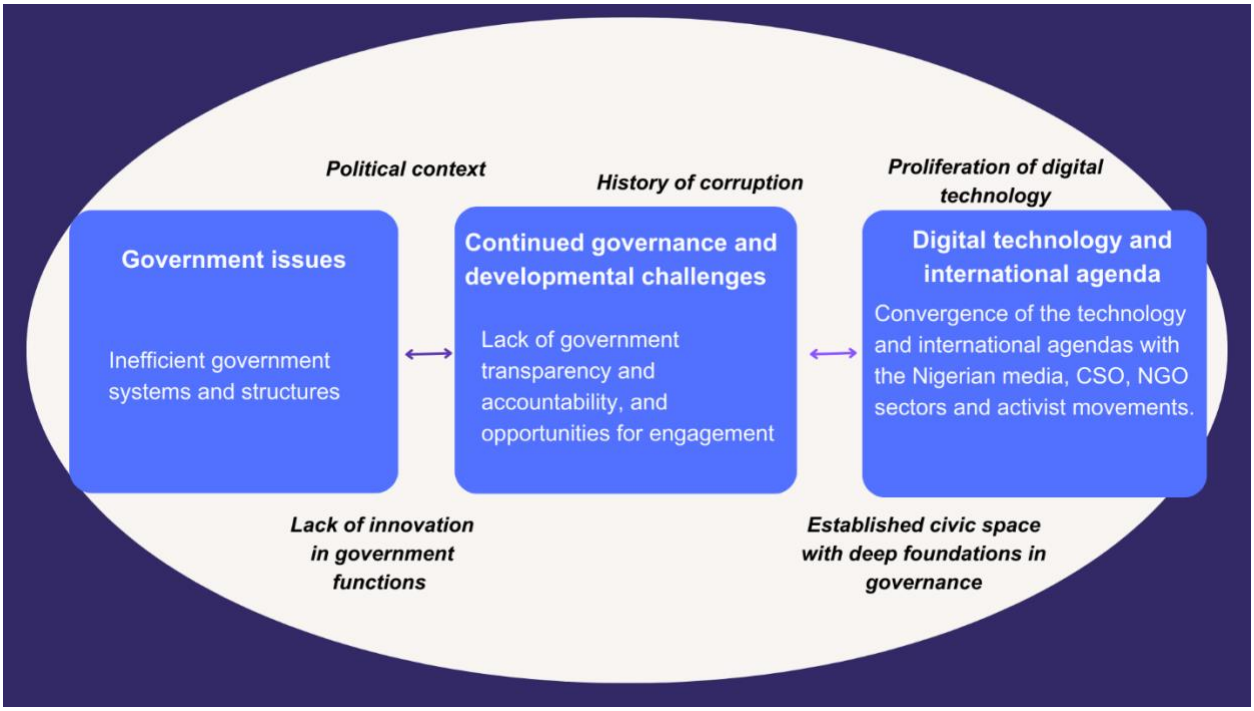


Source: Researcher's own

4.3.3 Nigerians' insights on the drivers of civic tech in Nigeria

Figure 21 below presents the data gathered from eight interviews with Nigerian actors, responding to the question: What are the drivers of civic tech development leading to the emergence of civic tech initiatives focused on governance in Nigeria? The research participants were asked to share their perceptions of what motivated civic tech development in Nigeria. A common theme in the interviews was that multiple motivating factors drove most organisations. Based on the participants' insights, the drivers of civic tech organisations in Nigeria could be grouped into three interconnected main groups: government issues, continued governance and development challenges, and the convergence of increased access to digital technology with the Nigerian media, CSO, NGO sectors and activist movements.

Figure 21: *Drivers of civic tech in Nigeria*



Source: Researcher's own

4.3.4 Group 1: Motivating drivers: Issues within government

Four participants relayed that they believe the inefficiency, lack of internal innovation, unskilled civil servants, limited capacity in government and lack of citizen trust in government have been significant contributors to the development of civic tech projects. The interview participants were generally in agreement that the slow pace of innovation and adoption of technology and innovative practices within government to address the inefficiency of government in many governance areas have contributed to the motivation of most civic tech organisations. NIG01 explained that the Nigerian government still uses analogue processes that create bottlenecks and slow service delivery. This introduces a new challenge: the lack of data to measure progress or monitor governance issues. Participant NIG02 stated:

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

Participant NIG06 postulated that the development of civic tech organisations could be linked to government's failures and inability to engender citizen trust. NIG06 stated:

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

Speaking about skills and capacity within government, participants contended that while civil servants administer governance, they are overwhelmingly under-skilled and insufficiently capacitated.

4.3.5 Group 2: Motivating drivers: Continued governance and developmental challenges

The participants identified the continued governance and developmental challenges as key drivers for many Nigerian civic tech organisations. They stressed that the founding of

civic tech organisations is linked to various governance challenges, like lack of positive outcomes from the funding provided to government, limited government transparency and accountability, and the history of corruption. Participant NIG07 emphasised that civic tech exists because of "*the absence of governance*," civic tech actors believe that developing tools can help citizens pressure government to improve governance. Consequently, if government is responsive, some civic tech platforms become complementary tools for government.

Many participants shared that they believe that civic tech has resulted from many individuals and organisations attempting to use technology to find solutions to the problems faced by the country. Participants NIG04 and NIG08 reasoned that Nigeria's various challenges of governance and different dispositions of administrations led to these civic platforms or initiatives being launched. NIG04 explained:

> *"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.*

Participant NIG08 added:

> *"There are so many problems need attention, health care systems need attention, our elections need awareness, education needs attention, the fiscal process needs attention. Civic tech allows us to do far more than we thought we could. So, the development and how to advance development in the country is one of the things driving or causing the springing up of many civic tech organisations.*

For instance, participant NIG06 postulated that many civic tech organisations develop projects to fill the support gap in areas where government has failed. Participant NIG03 explained further:

> *"The reason is very simple: we want democratic accountability, and if the people are going to get the benefits of democracy, there must 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 whose problems remain unsolved? There needs to be people who stand up and try to fill that gap and bridge it between governance and the people."

Participant NIG07 offered a different perspective, contending that most civic tech projects across many African countries, have been reactive. Developments in the civic tech field were a reaction to current issues in the governance field. For instance, between 2007 and 2009, various civic tech projects were launched, many were focused on elections, as there were woeful elections across many countries. This corresponds with inputs from other participants; for instance, participants NIG05 and NIG06 stated that most civic tech organisations focusing on corruption were a reaction to ongoing corruption. An Afrobarometer study found that Nigerians believe that corruption is the fifth governance issue government must address, preceded by unemployment, economic management, poverty, and food shortages (Ojewale & Appiah-Nyameky, 2018).

4.3.6 Group 3: Motivating drivers: Digital technology, civic and activist movements.

According to the participants, the increasing interest to fund civic tech projects by international development agencies combined the increased use of digital technologies by Nigerian media, CSO, NGO sectors and activist movements, could be a key driver for civic tech. Participants NIG02, NIG07 and NIG08 stated that CSOs, NGOs and the media have always been at the forefront of advancing good governance and social justice in Nigeria. NIG08 explained:

"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 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 becomes a tool that allows that work to be amplified."

Participant NIG02 added a further element to the discussion, that civic tech has been a product of social movements. NIG02 explained that in 2012, Nigeria experienced #OccupyNigeria, a protest about the increase in food prices. Before that, Nigeria had a protest about the disappearance or absence of the president, President Buhari. Therefore, a combination of peak activism, mass protests, and established civil society actors helped accelerate the emergence of civic tech in Nigeria. NIG02 stated:

> *"The explosion of paying more attention to youth and women within this context, has influenced civic tech. The old explosion and the interest of getting more young people and women into civic societies as the transformative opening and the fact that you have periods and times that have accentuates issues, and civic technology has been a product of that."*

Lastly, participants NIG02, NIG04, NIG05, and NIG07 mentioned the increase in 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. NIG02 posited that:

> *"Civil society and philanthropy groups have also shaped and pushed the civic tech community forward because they are also focused on systematic issues such as fiscal accountability, transparency and accountability, efficiency, digital rights, and social justice over the years. And they're looking for ways to apply technology to that work. How does that affect citizen perception of these issues? And I think that led to these organisations backing civic tech projects."*

NIG04 added:

> *"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 with 734 local governments and 36 states and billions of dollars annually you spend to solve infrastructure challenges or other development needs, and you don't see the results. So those issues automatically drive or call for some civic technology intervention where donor funding 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 authoritarian or intolerance from the government."

The issue of closing the civic space in Nigeria and the emergence of digital technology in the civic space was raised. NIG05 and NIG07 argued a nexus exists between the closing civic space, emerging tech opportunities, and best practices from all sectors.

"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 of the military 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 to create those tools for them to engage easily.

4.3.7 Classification of challenges facing Nigerian civic tech ecosystem

Although respondents agreed that the civic tech community is contributing to the governance and changing the quality of governance and citizens' lives, they expressed concerns over their various challenges. The challenges and limitations reveal two themes, internal and external. Internal challenges are about the challenges stemming from the civic tech organisations and their ecosystem. External challenges concern institutional challenges arising from the government and funding sector, political, technological, and socioeconomic factors.

4.3.7.1 Internal challenges and limitations

Based on the participants' responses, five main internal challenges were identified: technical skills and capacity; low awareness of civic tech projects (citizens not knowing the project exists); lack of 'rockstar effect' like the ones found in the fintech sector; and lack of visibility; and, retaining users, continues to be a problem for many platforms. These challenges correspond with the challenges found in various international civic tech studies (Peixoto & Sifry, 2017, p.46; Pade-Khene, 2018; Wissenbach, 2019; Zhang et al., 2022).

Participants NIG02, NIG05, NIG06 and NIG07 emphasised the skills and capacity issues, informing that it is difficult to find people interested in civic tech due to salary, lack of technical know-how and interest in working on civic projects. NIG05 stated:

> *"One of the major challenges is the technical know-how. For example, tech-savvy people who have the skill to build are more interested in places where they can make money quickly. To get on the project, complete that project in one month and then move on to another. Let's juxtapose fin-tech in Nigeria, where we have some unicorns ready to float the waves, if you ask a developer or techie, would you rather work with a civic tech organisation or a fintech organisation they would rather work with fintech because there is money in fintech."*

Relaying further issues with technical capacity, participant NIG05 added that due to the lack of effective templates on successful civic tech organisations, in some cases it can be strenuous and cumbersome to build a civic tech project. While Nigeria is one of the digital leaders in Africa, building civic tech tools requires a certain level of interest and awareness in civic issues. There is a dearth of people in the technology field who understand the call for civic tech to build what is required. Civic tech actors find that accepting technology is still a problem: people do not use civic tech platforms efficiently. The civic tech community often does not have a budget for advertising and marketing, resulting in low visibility, low uptake, and a struggle to retain users. Participant NIG04 mentioned that the civic tech community is to blame for some of the issues, as many civic tech organisations fail to conduct baseline research. NIG05 explained:

> *"Government issues and accountability are typically not as interesting as entertainment. So, it can be difficult to attract and maintain citizens' attention. The next big news or social issue regarding sports, music, and entertainment will have a long-lasting effect on people compared to our sector. When I ask my colleagues what can be done to drive and sustain citizens' interests, I've heard ideas such as running skits and jokes on the platform."*

4.3.7.2 External challenges: Government responsiveness and shrinking civic space

The government's response to civic tech emerged as a critical constraint during the interviews. Civic tech actors emphasised that government can be averse to the civic tech community. This is illustrated by government's inconsistent delivery of government data and its efforts to limit civic space, press freedom, and suppression of dissenting voices. NIG08 maintained:

> *"Government responsiveness can be slow. It's not necessarily because they do not understand civic technology. I postulate that they understand. The understanding of civic technology and how ideas transform the government's relationship with its people is why there's such slow responsiveness. If I am proactively publishing my data, if there is a tech tool that allows everyday citizens to access it, allowing citizens to see what government is doing, then that means people can ask the government questions. In my experience in Nigeria, the government can be averse to questioning. So, we must acknowledge that the system of governance is so infused with corruption that it's not so much a lack of understanding of civic technology that impacts responsiveness. It's an understanding of how that can transform governance in a country that is a factor in that slow responsiveness."*

NIG02 stated:

> *"NIG02: So, you have data consistency and when it comes to access, we don't have government data and so that makes it difficult. A lot of civic technology are also struggling with continuous access to data. You build the tool but cannot build it effectively without the data, and I think that's also a big problem."*

Several participants (NIG01, NIG03, NIG06, NIG07 and NIG08) alluded that one of the key challenges in Nigeria is the shrinking civic space. Participants felt that government is trying to undercut the work of civic tech organisations and the media and civic space. Three participants highlighted that there had been a slew of restrictive digital policies and other digital rights violations, like the Twitter ban in 2022. Moreover, the safety and security of civic tech organisations and people in their fields have become a major concern, as there have been attempts to intercept and hack the organisations.

4.3.7.3 The Internet access and penetration challenge

Another external challenge that feeds into the internal challenges is the country's Internet penetration and services. Participants agreed that this is a typical constraint in their work, as many people, especially in the urban areas, are not digitally connected and thus left behind. NIG07 added that the civic tech community needs resources to reach communities that do not have access to the Internet or cell phones. NIG03 relayed:

> *"One would be the Internet penetration at the grassroots; most civic tech tools target the grassroots. Either budgeting data or information to the grassroots to demand accountability. But the challenge is the target audience is either in areas not reached by the Internet or doesn't have the money to buy data to engage using those platforms so if I have a dollar to spend on the internet, should I use it to look for a job or livelihood, or should I use it on civic tech tools that inform me about who has stolen money? So, it's that issue that people in the grassroots have limited money to stay online or don't even have internet.*

4.3.7.4 Funding, resources, and sustainability

Participants agreed that funding is a significant constraint for the civic tech ecosystem; it is a struggle to acquire the financing to work on their projects, especially projects focused on driving advocacy or good governance, as they do not return the same reward as fintech organisations. The funding issues raise the question of sustainability.

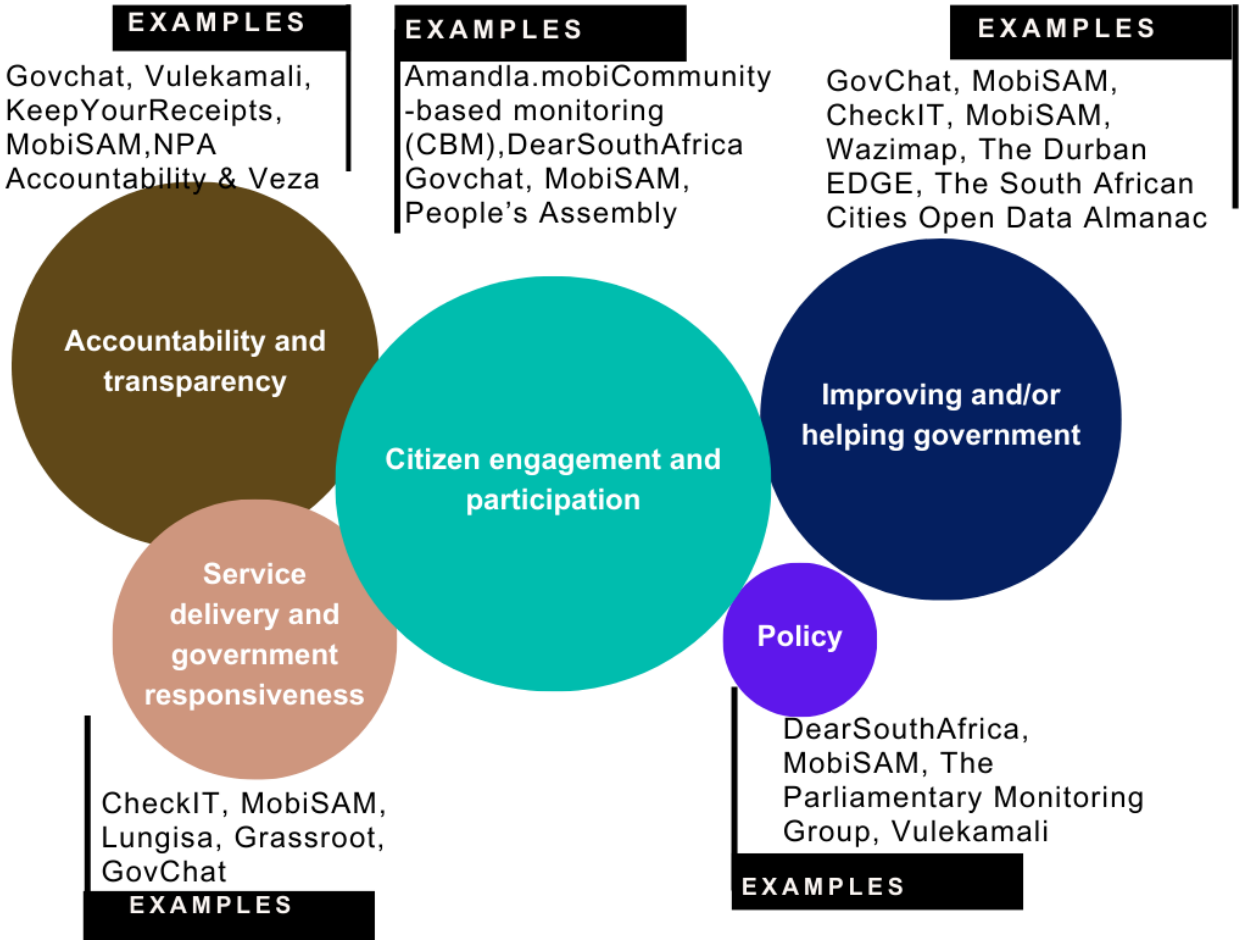
4.4 Case: Characteristics of South African civic tech organisations in the governance sector

After the database clean-up, 42 South African initiatives remained on the civic tech database. The data indicates that 26 initiatives focus on the governance sector. Analysis of the 26 organisations' descriptions, mission, and vision statements indicates that their work is focused on five governance functions that overlap with the focus areas established in the African profile above (Figure 22 below). The first group indicates a high concentration of civic tech initiatives focused on citizen engagement and participation. The second group encompasses a tie of two groups, showing that an overwhelming number of the projects focus on transparency and accountability and improving or helping

the government, while the fourth group focuses on service delivery and responsiveness. The last group focuses on policy, particularly enabling citizen participation and researching policy processes. The data reveals that the projects are often focused on multiple areas of governance.

South Africa has witnessed increased digital citizenship, partly due to social media applications (apps) like Facebook and Twitter creating new online civic spaces to facilitate change. The youth have increasingly used social networking sites to create a new biography of citizenship, marked by more individualised forms of activism (Bosch, 2017). This can be seen in three influential campaigns from 2015: #RhodesMustFall, #FeesMustFall, and #ZumaMustFall.

Figure 22: *Distribution of South African civic tech organisations*

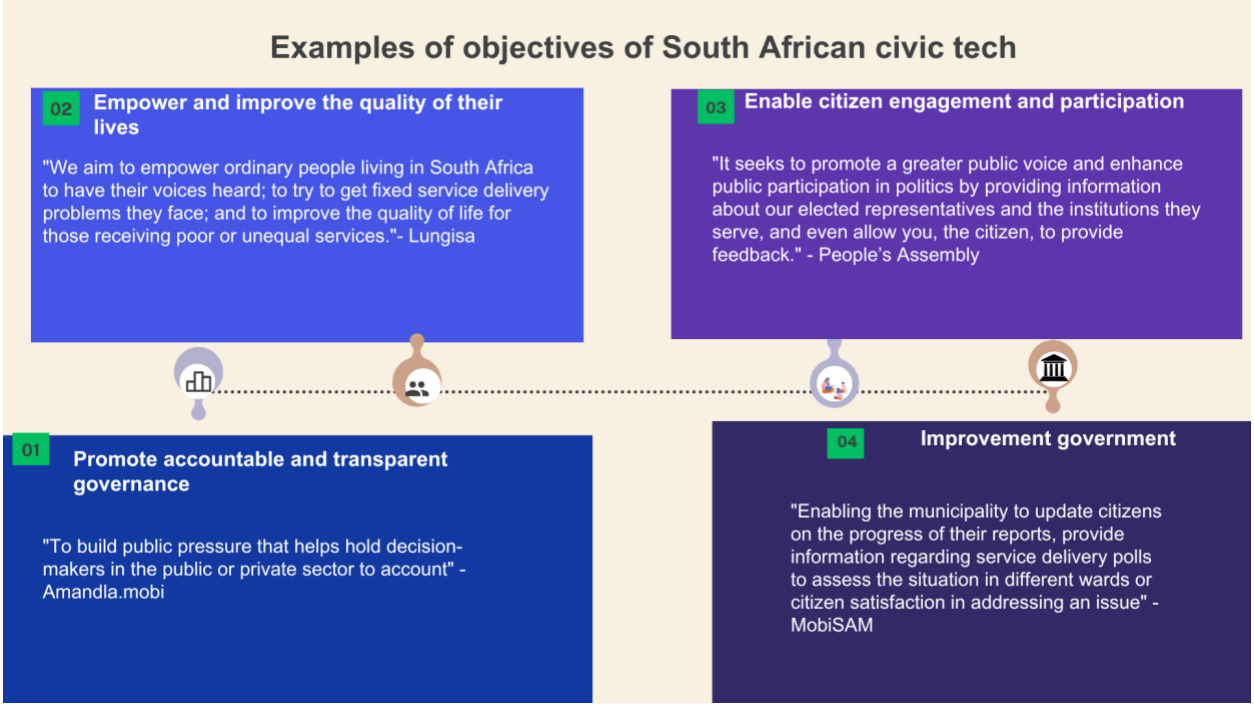


Source: Researcher's own

4.4.1 South African objectives and goals

Figure 23 below illustrates data analysis of 26 South African civic tech projects, showing examples of their objectives and goals:

Figure 23: *Examples of objectives of South African civic tech*

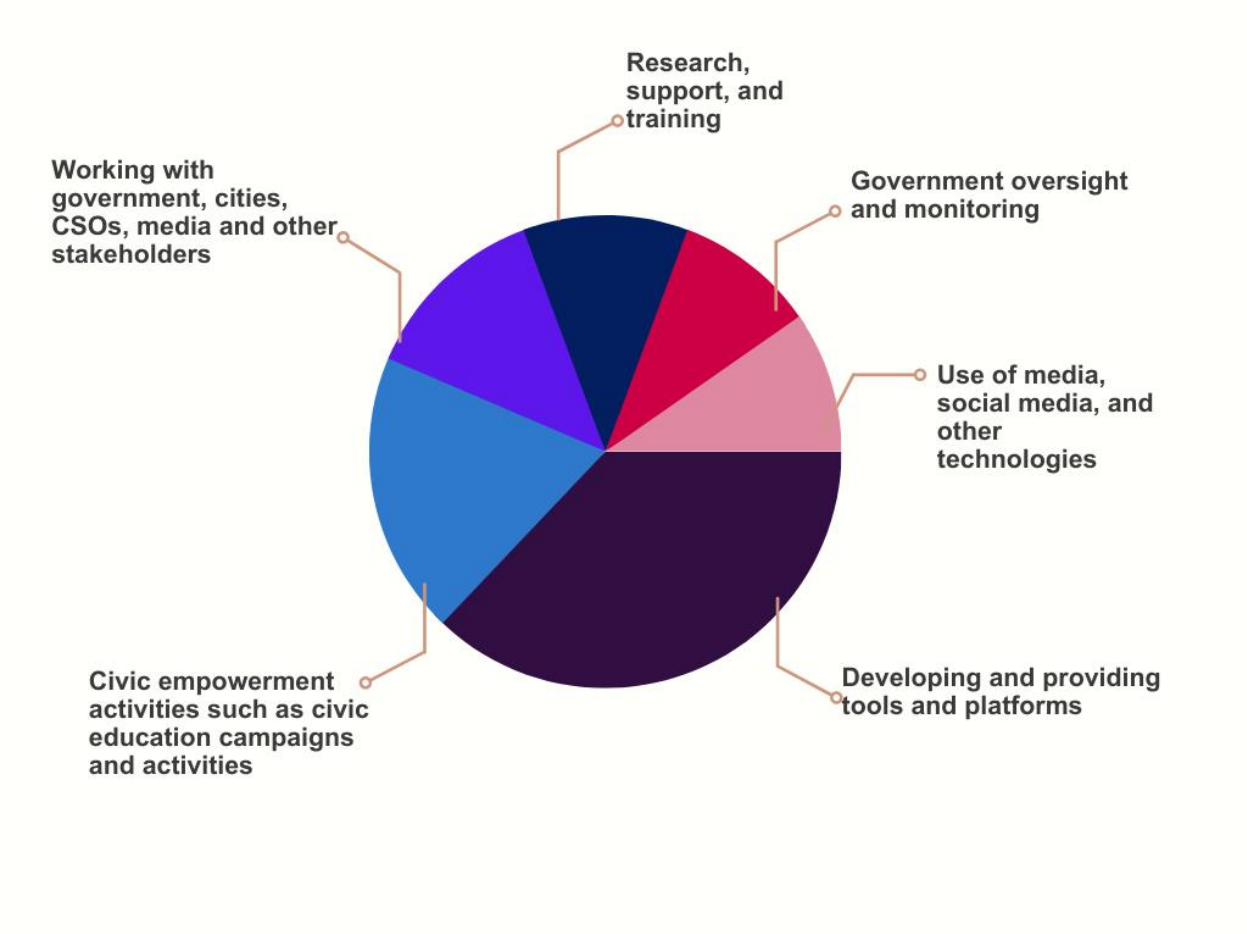


Source: Researcher's own

4.4.2 South African approaches and activities

Similar to the Nigerian civic tech organisations, South African organisations are navigating a common but unique governance issues requiring innovative approaches. The data reveals that South African organisations often prioritise developing and providing tools and platforms while also focusing on civic empowerment activities, working with other stakeholders, including government departments, followed by research and training efforts. The data also indicates that initiatives focused on accountability and transparency concentrate government monitoring activities.

Figure 24: *South Africa: Approaches and activities*

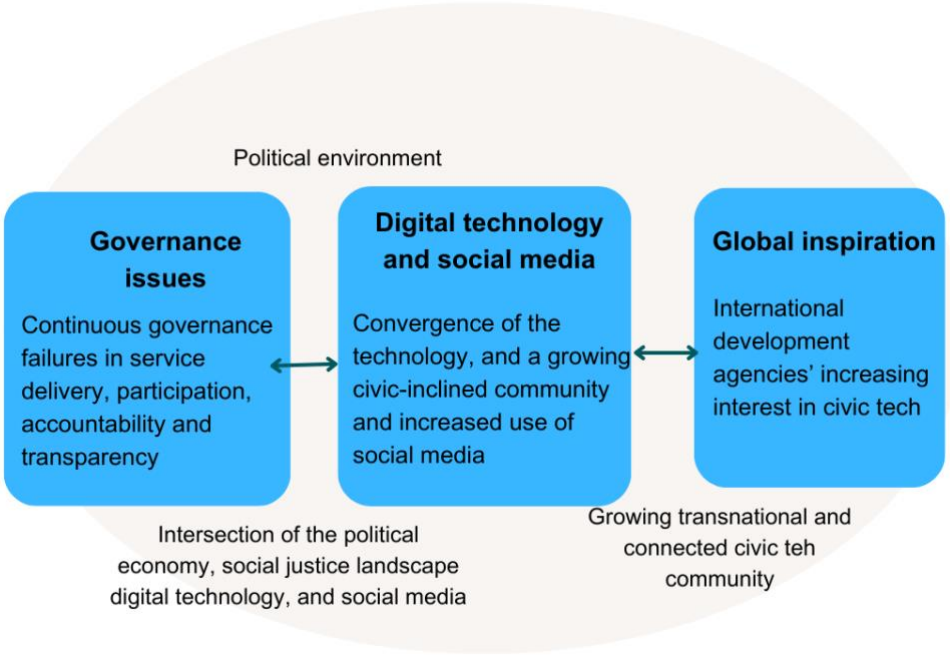


Source: Researcher's own

4.4.3 South African participants' insights on the drivers of civic tech

The following is a presentation of the data gathered from seven interviews (one interview consisted of two participants as the organisation has two main projects) with South African civic tech actors, responding to the question: What are the drivers of civic tech development leading to the emergence of civic tech initiatives focused on governance in South Africa? The research participants were asked to share their perceptions on what drove many civic tech organisations to start civic tech projects. Participants linked the development of civic tech platforms to three broad connected categories: governance issues, the emergence of digital technology, and the global development agenda (Figure 25 below).

Figure 25: *Drivers of civic tech in South Africa*



Source: Researcher's own

4.4.4 Motivating factors: Governance issues in South Africa

Though participants offered various drivers which led to the development of civic tech in South Africa, no participants pinpointed one single motivator. The general responses indicated that diverse factors drive civic tech organisations. The consistent thread across

interviews with SA01, SA04, SA05 and SA07 was that most governance-focused civic tech organisations were motivated to develop projects or build tools due to numerous governance issues. These include corruption, government's inability to reach citizens, poor service delivery, lack of government transparency and accountability, access to data, and failure to include, engage and enable citizens in decision-making. While the Constitution says that government must involve citizens to engage in governance issues, in practice, the role of citizens is often limited to observers. SA04 and SA06 explained:

> *"The main and most obvious issue is reach; it has always been a problem. So, 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 however 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 is aware of the announcements."*

> *"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 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."*

Consequently, frustration with governance issues, especially failures in service delivery, participation, accountability and transparency, have motivated the civic tech ecosystem to build and create tools.

4.4.5 Motivating factors: transformative nature of technology and social media

Participants believe the intersection of the political economy, social justice landscape and the transformative nature of technology and social media has led to the development of civic tech. Some participants link the development of civic tech organisations to the

political environment and civil service culture; state capture; corruption; and the rise in digital technology, including social media and Internet access. Citizens are very active on social media platforms like Twitter. Many organisations understand that they could use social media to advance governance while using existing platforms that citizens already use. Participants SA03 and SA07 explained:

> *"I think a big part of it, is people identifying particular issues. For example, I've worked in tracking budgets and increasing budget participation. And the drive has often been, there's this problem, what are the ways we've tried to solve it so far, in the context of our access to information, where budgets are concerned? We know Treasury has made tons information available, but is it meaningfully accessible? So how do you get around that? How do you make it more accessible? How do you make it more engaging?*
>
> *"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 from the South African civic tech ecosystem here.*

4.4.6 Motivating factors: Global inspiration to use digital skills for social good and development agenda

Some participants suggested that the international development agenda has influenced the development of civic tech. They believe that when development agencies discover the use of civic tech interventions in corruption, transparency and accountability, civic empowerment, and other governance areas, there is an increase in funding opportunities. Global success stories of civic tech inspired civic tech organisations, and they realised the potential of using technology to address civic issues. SA02 expanded:

> *"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 the development agenda, which opened the pipeline for funding."*

4.4.7 Classification of challenges facing South African civic tech ecosystem

The challenges in the South African case study are grouped into internal and external challenges.

4.4.7.1 Internal challenge: Redundancy, duplication, and unsuitable technologies.

SA01, SA02, and SA04 identified redundancy and unsuitable technologies as critical challenges affecting the civic tech community. They contend that organisations sometimes build unnecessary technologies to address governance issues. SA02 suggested that the duplication results from 'all of us' attempting to create the same civic tech project. Both challenges could be linked to a lack of proper research and understanding of the governance problem before building or developing a tool (Jideofor, 2022; Zhang et al., 2022). SA01 added that this research should be expanded to government so that, as a civic tech organisation, you understand the internal challenges existing in government. They explained that the civic tech community is plagued with many pilots who do not evolve into widespread sustainable projects.

SA01 explained:

> *"There is a narrow-minded view of how and where civic tech can work. So civic tech can come in many different forms, and there must be an assessment of the existing level of the existing government. So, it's a local government municipality. What is it like? Have they met particular criteria? What is the situation? if they are like this? What kind of civic tech will work in the interim. Then, if they change and meet certain criteria, can they start implementing this kind of civic tech. But many of these civic tech initiatives assume that one solution fits all. And as a result, you have discarded pilots."*

4.4.7.2 Internal challenge: Human capacity.

Another challenge was finding suitable people to work for civic tech organisations. SA02 noted that because of these issues, trying to keep momentum and continuity becomes significant in terms of organisations of people and the project timeframes. SA02 stated

that finding good people to work in civic tech requires people to be socially minded and understand a complex range of issues:

> *"And that's not always the way that technologists are trained quite often. It also means that quite often you must evangelise or educate your team; that is the human resources element of civic tech."*

This capacity challenge is further linked to the external challenge of funding. SA05 explained:

> *"Funding stops teams from growing and experimenting; if we were start-ups, there would be a lot of room for experimenting. Project-based funding means there's little room for trial and error. You must always know what you're doing if you have a project and need the initiative within a specific deadline. We want to be innovative, but also, we want to deliver at the end of the day."*

4.4.7.3 **Internal challenge: Difficulties with collaborations and the civic tech graveyard problem**.

SA02 informed that the civic tech community struggles with collaboration due to organisational jealousy, mistrust, or the need to protect organisational relationships with funders. An emerging issue stemming from one of the drivers of civic tech, global inspiration and influence, has unintentionally created a significant degree of the civic tech graveyard, as civic tech organisations attempted to import technology from the Global North. This practice means civic tech organisations do not consistently conduct baseline and user research to understand the problem and whether the technology they want to import will suit the local contexts and needs. SA02 noted that there have been successful technology imports, such as Wazimap, created by media monitoring Africa. OpenUp came from the US Census technology; it was an effortless import because South Africa has a census and wanted to explore. Therefore, it is possible to import and reuse technology if the contexts match appropriately.

4.4.7.4 ***External challenges:*** **Funding, sustainability, and business models**

An enduring challenge mentioned by participants was funding and the struggle to find suitable business models to build sustainability on organisational levels and the

ecosystem. Some participants indicated they find philanthropic funders imposing their theory of change or models onto the civic tech organisations they fund. Sometimes, they view civic tech organisations as service providers instead of grantees or equal partners. SA03 added that the current funding models do not spell long-term growth for the civic tech ecosystem because it primarily depends on international philanthropies. SA02 explained that the key challenge in finding a suitable financing model for civic tech organisations is that it is difficult to commercialise civic tech functions in civic impact and try to get people to access their rights. Therefore, commercialising goes against the values of the work they undertake. For organisations to continue their work, they need financial resources. Thus, the conundrum continues.

4.4.7.5 **Perception and understanding of civic tech**.

Some participants emphasise that the fundamental misunderstanding of how technology is not an end in and of itself has negatively affected the civic tech community, especially since civic tech became a catch phrase. Participants stated that civic tech makes people think technology will solve their problems. SA03 noted that:

> *"People are not comfortable with a lot of technologies, and so that discomfort means they don't appreciate the full transformative potential of technologies, but rather see it as this side thing that you do to look impressive. And because of that lack of digital literacy and appreciation, you must spend so much time conscientizing people as to the potential of technology. And many people in decision-making positions on both sides are still morally digital natives. And I think that's a hindrance."*

4.4.7.6 **Lack of government buy-in and loss of government champions**.

Participants shared that, in some cases, government has an adversarial relationship with civic tech. Civic tech organisations have often adopted a simple strategy to build relationships with government departments and create collaborations. SA06 explained that some of their work requires collaboration with government stakeholders to access constituency information. Without the collaboration, SA06 described it as "quite a nightmare." An unexpected challenge has presented itself: the loss of civic tech

supporters or 'champions' within government. SA02 and SA05 noted they often find a few champion departments and strategies with government. The individual champions leave the departments, and the civic tech organisations must start again and create new relationships. This often results in years of delays in terms of project timelines because of the loss of institutional memory. SA05 explained *"Without government buy-in, our projects don't have that full impact that we wanted to"*. Adding to this element, SA01 shared an experience with a local municipality after they had worked together for several years on a project:

> *"But then, when the municipality got new people, they resisted because they thought we were spying on them. And so now what has happened is a lot of the reports we get from Facebook or WhatsApp, and uploaded on the MobiSAM app, remain as assigned issues, but they're not addressed. They don't update as addressed on the MobiSAM. And that's because you don't have the right people in the municipality. People have procedures and processes in place in the municipality that people are willing to use."*

SA01 raised an important question: government response to civic tech organisations or demands from citizens via civic tech is often limited. In contrast, citizens now have access to tools that enable them to communicate with the government. SA01 wondered:

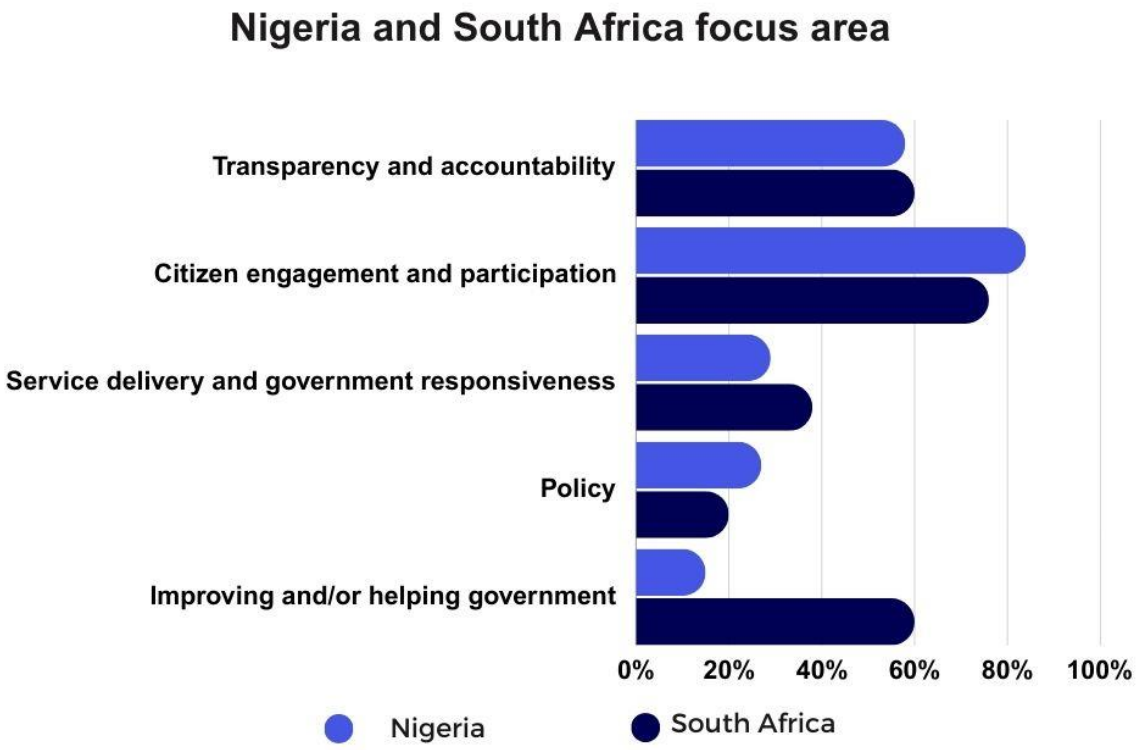
> *"But what happens with that data that has been collected over time? Are they taking a step with it to understand the influence and impact of each of these issues that have emerged over time? Service delivery and understanding what the impact is in their town? And what can they do as citizens as the next step to get the government to act on some of these outstanding issues they are experiencing? I think that gap exists. That gap has created a civil society that's just leading and trying to work on behalf of citizens. But I think there's a lot of growth needed for the individual citizen to have more power in these spaces of government decision-making."*

4.5 Chapter Summary: Civic tech in Nigeria and South Africa

The civic tech landscapes in Nigeria and South Africa share similarities and overlap in interesting ways. Figure 26 below illustrates the similarities and differences between the two countries, indicating each country's focus areas of civic tech organisations. While in both contexts, civic tech is driven by many variables like the proliferation of digital technologies, failing government systems, and international agendas, a key motivation emerging from the study is the identification of governance issues. This motivation is the foundational driver for many civic tech actors; they are determined to use technologies to address issues their communities face.

The study found various established collaborations between civic tech and government in the two countries. A significant parallel between the two countries is the challenges the ecosystem faces. Both countries face systematic challenges like finding buy-in with government departments, funding issues, capacity, and the digital divide. In South Africa, civic tech organisations emphasised improving and working with government as one of the key functions of civic tech organisations, particularly in improving government systems for transparency, citizen participation and engagement. Meanwhile, the Nigerian participants stressed the importance and connection of civic tech to civil society and the media space. Nigerian participants connected this with the shrinking civic space the country is experiencing. They further espoused a strong emphasis on advocacy and human rights in the Nigerian civic tech ecosystem. In both countries, there is a strong emphasis on digitalisation and acquiring and using tech skills for social good. Lastly, the participants indicated the importance of combining innovative tools and methods with offline activities to cultivate communities.

Figure 26: *Comparison between Nigerian and South African civic tech field*



Source: Researcher's own

Chapter 5: Innovating for improved governance – Civic tech in Nigeria and South Africa

This section focuses on the findings reflecting the main research question, “How is the emergent civic tech community contributing to governance in Nigeria and South Africa?” with references to the three sub-questions. This chapter is divided into four main sections: the first two sections focus on the case study findings for each country, followed by a review of the linkages between civic tech and governance and a conceptual analysis of civic tech within the social accountability framework to understand the civic tech phenomenon in the governance sector. The fourth section will discuss the emerging strategies for navigating the challenges.

Civic tech studies suggested that in the governance sector, civic tech typically focuses on citizen engagement and participation, service delivery, accountability and transparency (Chatwin & Mayne, 2020; Gilman, 2017; John & Sjoberg, 2020; McNutt & Goldkind, 2020: Skaržauskiene & Mačiulienė, 2020). The following section focuses on Nigeria and South Africa and uses research data and arguments from the literature review to illustrate the varying ways civic tech influences governance in each country.

5.1 Case: Key findings on civic tech and governance in Nigeria

The Nigerian civic tech community has been building an innovative and transformative presence. Based on the database's content analysis and the interviews' thematic analysis, four overarching themes have emerged on how civic tech is improving governance in Nigeria.

5.1.1 Theme 1: Influencing government to implement systematic change

The study findings reveal an implicit and co-evolution relationship between the digitalisation of government and civic tech. According to most participants, civic tech initiatives are concerned with improving government efficiency as they recognised that most government departments are inefficient due to a lack of innovative systems,

unskilled civil servants and a lack of capacity. A study by Skaržauskiene and Mačiulienė (2020) found that most international civic tech organisations are concerned with digitising and enhancing government. This study found that at least 15% of Nigerian civic tech initiatives are concerned with improving government. While the Nigerian civic tech organisations focus on improving government functions to a lesser extent, their work in other areas often indirectly and directly influences government institutions.

Therefore, innovations in the civic tech ecosystem, motivated by a lack of government innovation, have influenced government institutions to improve governance by rethinking inefficient systems. Participants stated that government efforts focusing on anti-corruption, service delivery, health, education, and waste management are linked to the efforts of the civic tech community to improve governance. Due to the work of civic tech organisations, innovation, accountability and transparency mechanisms have been embedded or institutionalised in many government institutions. NIG04 provided an example, stating that civic tech organisations like BudgIT, Budeshi, Udeme, and others focus on tackling fiscal accountability and transparency (including budget auditing, procurement, elections, health, service delivery) have been instrumental in government departments.

The study found that these organisations employ various approaches, starting with awareness campaigns, sensitisation, and creating open data platforms. Over time, they have become instruments that government departments have adopted or learned from to create their interventions. For instance, participants argue that the trajectory and work of BudgIT and its platform Tracka, Udeme, and Budeshi have collectively strengthened the Independent Corrupt Practices Commission's work on fighting corruption within the budget and procurement ecosystem. The study found that participants believe civic tech has influenced government to launch several other e-government initiatives over the last 15 years.

A key finding in this theme is the adoption or replication of civic tech within government structures. NIG04 explained that the digital technology iterations and interventions

created within government were based on projects initially implemented by the civic tech community. This reveals the significant influence of civic tech organisations as there is notable replication or adoption of civic tech by government. Over time, the adoption of civic tech tools into government is shifting the relationship between civic tech and government. As a result of this shift, civic tech organisations have evolved from organisations focused on providing citizens with tools to participate in governance processes to service providers for government institutions, creating models and helping government improve governance, thus becoming innovators for government. This can be linked to literature, which indicated that civic tech can sometimes be concerned with two areas: technological efficiency streamlining government operations; and civic efficiency, which is linked to civic action and using technology to improve civic life (Gordon & Walter, 2019). Participant NIG08 explained:

> *NIG08: "It was hard to imagine, for instance, as recently as 2015 that government would proactively make available data on their procurement data, their projects, but now we're seeing it. And even though no one has given us a placard and said, we're doing this because you guys forced us to do it. We're empowering government agencies to build their civic technology tools. That helps them advance their agenda."*

BudgIT is a notable example of civic tech and its influence. Since its inception, it has established partnerships with regional governments. It actively provides technical support on fiscal transparency, citizen budgeting, data visualisation, and data analysis to improve the capacities of public institutions to deliver results for citizens. BudgIT has connected the Kano, Lagos, Anambra and Kogi states to the Open Budget System Portal. BudgIT actively provides technical support to 36 states' finance and budget directors on using citizens' budgets through the States Fiscal Transparency, Accountability and Sustainability project (BudgIT Foundation, 2020).

The idea that civic tech is helping government directly and indirectly innovate for governance was present throughout the interviews. The study found consensus that while

there is a noticeable pattern that civic tech is influencing government, there is a lack of acknowledgment from the government sector highlighting the influence of civic tech in their departments. This can be linked to a key argument in literature, which indicated that the civic tech community struggles to measure its impact (Duberry, 2022; Chatwin & Mayne, 2020; John & Sjoberg, 2020; May & Ross, 2017).

Furthermore, elections are integral to governance, and the interviews reveal that civic tech is vital in encouraging and innovating the transformation of electoral processes. NIG08 stated that for the 2023 elections, the electoral commission, Independent National Electoral Commission (INEC), which has faced significant criticism from international and local observers about election irregularities, has established a system enabling them to publish election results in real-time online. They attribute this to the consistent work of civic tech organisations like Snap and Send, and CSOs creating platforms and advocating for free and fair elections. Snap and Send enables and encourages citizens to participate, observe and report issues during elections. The study found that organisations focused on voting and elections, like Enough is Enough and GoVote and YvoteNaija, are often concerned with advocacy, encouraging and enabling citizens to register to vote and participate in the elections, educating citizens about their rights and responsibilities where elections are concerned, encouraging INEC to review electoral policies to ensure inclusivity.

5.1.2 Theme 2: Making government data more accessible: Providing access to direct government data

Nigeria has shown rich activism and collective efforts toward accountability and transparency reforms. Participants believe that providing access to information and access to government can improve governance. This is supported by literature from Cárcaba et al. (2017), who argued that better access to information promotes transparency, civic engagement, and effective decision-making. Participants indicated limited access to quality data on service delivery, budgets and procurement, and channels or platforms to reach government directly. The organisations employ various approaches and tactics to give citizens access to information and government services.

Participant NIG08 shared that government is now proactively sharing procurement data. Civic tech actors, NGOs and civic groups use the data to put government under pressure to solve problems. Participants believe their work has been influential in ensuring that government shares the correct data. Civic tech actors often monitor government data-related activities, highlighting government efforts to manipulate public data. The BudgIT Foundation (2020) explained that there are noticeable shifts in open data. For instance, 33 states have engaged in participatory budgeting efforts by producing and publishing their budgets.

The civic tech platforms use the data in various ways, enabling citizens to track government projects, public services and budgets. The civic tech actors track projects and share this data with citizens using data mining, visual intelligence, infographic displays, and online interface expertise. The researcher found that these organisations are concerned about poor literacy; therefore, in some cases, they undertake baseline analysis of literacy and level of interest in governance issues to inform their work and how they share public budgets. Often, civic tech organisations have found that government publishes open data in inaccessible formats that are not machine-readable. The task falls on civic tech organisations to clean, interpret and simplify the data for citizens.

NIG08 shared that while government has been unresponsive to civic tech efforts due to government structures and the corruption endemic, they are beginning to request assistance on issues such as opening up public data and further advance on the International Budget Partnership (IBP) scores. The IBP rankings rank over 120 countries based on the extent of openness and accountability in their national budget processes. These civic tech organisations have created innovative digital tools that bolster citizen engagement with government, enable public input, and monitor project implementation and participatory budgeting to limit corruption and wastage in public expenditure. The study concludes that civic tech supports the fight against corruption by raising accountability and transparency through online services, open data portals, information crowdsourcing, civic crowdfunding, online corruption reporting, and government monitoring tools.

5.1.3 Theme 3: Improving participation: Creating a generation of informed citizens

Citizen engagement and public participation are essential for accountable and transparent governance (Cárcaba et al., 2017; Fung, 2015; Pade-Khene, 2018). Cheruiyot et al. (2019) maintained that the civic tech movement is rooted in participatory culture. A recurring theme in most interviews is that civic tech has helped accentuate citizens' voices and improve participation and knowledge about government activities. Analysis of the database reveals that 46% are focused on citizen engagement, while 34% are focused on citizen participation. For instance, due to the work of various civic tech organisations like Gavel, Enough is Enough and BudgIT, more people, especially young people and women, have been active in governance issues and are interested in using the tools to transform their communities. Civic tech tools have provided citizens with benchmarks for measuring service delivery, encouraged engagement between government and citizens (building a feedback loop), and the tools to engage with politicians and public servants.

Citizens are now active in monitoring and tracking government spending, especially on community projects. They are more involved and responsive to calls to participate in community development. On a political level, civic tech platforms provide citizens with platforms and opportunities to ask questions of politicians. For instance, NIG07 explained that civic tech has significantly increased the chances and channels for citizens to ask politicians questions before their term in office begins. As a result of the efforts by civic tech organisations when it comes to governance, mainly service delivery civic tech, there are notable changes. A key example is that government and public officials would initially relay what they have done regarding governance without providing any evidence, and citizens had no channels or basis for measuring government statements. The public can measure governance using civic tech tools based on the data and evidence published on civic tech platforms. They are especially aware of the state of governance in their communities.

An example of civic tech being instrumental in enabling engagement and participation is Tracka, which allows a community of active citizens to track the implementation of government projects in their community to ensure service delivery. The platform has enabled citizens to collaborate, track, and give feedback on public projects in their community. This platform is particularly useful for communities with limited information about government projects in their communities. This is consistent with literature which reveals that civic tech has emerged as an avenue for citizen participation and engagement, as it allows citizens to demand transparency and accountability, and better service delivery, condemn politicians' inaction on governance issues, build activist movements for change and more (Duberry, 2022; Khene et al., 2021).

5.1.4 Theme 4: Mutual influence: civic tech and policy

A recurring position with the interviews was that while in some cases policy is a constraint for civic tech organisations, in many situations, civic tech and policy have a mutual relationship; policy enables civic tech, and civic tech influences policymaking. There is limited literature on the relationship between civic tech and policy, especially in Africa. However, Duberry (2022) suggested that civic tech could be valuable in providing citizens access to policy-making processes. Many participants implied that civic tech would not exist without enabling policies. For example, NIG04 stated that the narrative around most civic tech organisations in Nigeria could be linked to existing policies.

The study found consensus amongst the interview participants that, ultimately, civic tech exists to influence and drive policy, particularly through advocacy. Despite the various government attempts to shut down the civic space, civic tech actors believe it can transform the governance sector through policy. For example, BudgIT, Udeme, Dataphyte, and similar organisations have transformed how the government publishes budgets, with the government building its budget tracking. Therefore, civic tech actors embed policy advocacy and engagement in their work as they view policy changes as a strategy that could provide better systematic reforms, especially for people offline. Various civic tech and civil society organisations use real-life engagement with policymakers to share their motivations and the policy reforms they are trying to build.

Additionally, civic tech has been instrumental in other policy reforms, such as the policy change enabling INEC to share election results in real-time and the subsidy removal for the oil and gas sector. Government has, for decades, subsidised fuel and fixed retail prices of petroleum products. The payment has threatened the nation's fiscal position and impacted government's ability to fund developmental projects nationwide. In November 2021, the government announced its plan to remove the fuel subsidy and replace it with a monthly ₦5,000 transport grant. According to NIG08, Nigeria is working towards removing this policy after civic tech actors and other actors advocated through campaigns for nearly three years for its removal. While the subsidy has not been removed, the participant believes that it is likely that the subsidy will eventually be removed. Furthermore, participant NIG01 explained that when the government intends to introduce a bill limiting the fundamental rights of Nigerians, civic tech organisations and the civic space collaboratively advocate against the policy.

Further, through advocacy and other activities in collaboration with other stakeholders, the civic tech community has convinced government to reform police action due to the recent #EndSARS protests. Lastly, civic tech has been at the forefront of advocacy activities related to the controversial bill establishing a governmental body to supervise and monitor NGOs and CSOs, which would effectively be "*government sweeping powers over civil society, to the point of threatening its very existence*" (Gaebee, 2017). The civic space believes the bill aims to give government power to restrict and control the civic space, and has been actively advocating against the bill, which has not been passed.

The study found that civic tech has introduced various shifts to governance and has been actively changing governance processes in accountability and transparency, citizen engagement and participation, policy, and other related areas. Participants NIG03, NIG04, NIG07, and NIG08 shared that the civic tech community has been noteworthy in influencing government to implement systematic change by helping government rethink and institutionalise anti-corruption measures and other transparency and accountability processes to improve the electoral systems. The participants believe that the work of civic tech organisations has encouraged better behaviour in parliamentarians.

5.2 Case study: Key findings on civic tech and governance in South Africa

The following presents the perspectives of eight South African civic tech actors on how they view their contribution to governance. Four overlapping themes can be identified and are individually explored below.

5.2.1 Theme 1: Influencing and embedding innovation culture in local municipal and national government departments

A recurring perspective shared by most South African participants indicates that civic tech has inspired and fostered government to build and create innovations for governance-related areas. At least 60% of the 26 civic tech organisations are concerned with improving government to some extent. Participant SA01 argued evidence on corruption collected by the civic tech and civil society community has significantly motivated government to build platforms such as Vulekamali and made government realise issues in their departments. Participant SA02 shared that civic tech is used in anti-corruption to ensure effective and fair procurement and provide access to information. There are attempts to use civic tech to disseminate or help to connect to government services and support decision-making. This reveals an institutional change within government, particularly within government departments resistant to innovation and change.

Participants highlighted the importance of working in collaboration with government because civic tech organisations typically received limited support and interest from government, therefore "*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"*, said SA01. For instance, some local governments, like the Makhanda municipality, have begun to integrate several systems within government initially introduced by the civic tech community and citizen demands. Government institutions either replicate civic tech tools, create platforms and centralise their systems or use social media platforms like WhatsApp to address citizen demands. This indicates that the government is learning from civic tech activities.

In some situations, the government collaborates with civic tech organisations to create tools and increase government employees' technical capacity and competencies where digital technology literacy is concerned. The government often collaborates with organisations like Open Cities Lab, OpenUp, and MobiSAM. Participant SA03 shared that she has noted a significant shift in government in what she describes as a "*sense of collaboration in the development of technology for social good by the government*". Due to the efforts of civic tech actors, the government is incorporating technology in areas like citizen engagement and participation. SA03 shared that they have viewed their work as an opportunity to improve government technology:

> *"Thus, their work has begun influencing e-government projects. 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 has limited technical capacity therefore they [government] have engaged civil society [civic tech organisations] in the production of technology is fundamentally different."*

Participants believed healthy collaboration between government and the civic tech community has led to the contribution of civic tech in mainly showing government how to implement and build platforms, especially when sharing budget data on platforms like Vulekamali. A city example of the influence of civic tech is the City of Cape Town. Participant SA07 stated that "*the city has been heavily influenced by the civic tech community and open data work in particular and how they implement some of their work*." Cape Town established an open data portal to release public data on 16 topical areas to increase accountability and transparency, which they hope leads to public engagement.

Another notable example of civic tech contributing to better government systems and processes is OpenUp's Department of Cooperative Governance Monitoring Tool. The tool is a digital form management system resulting from a partnership between OpenUp and the Provincial and National Department of Cooperative Governance and Traditional Affairs. The tool was developed to digitise the forming process, help local and district municipalities improve their form management, and provide more transparent oversight

of these processes. Previously, data was collected manually, leading to slow responses, incorrect information, and incomplete forms, contributing to inefficiencies in local government (OpenUp, 2022). Therefore, OpenUp developed a significant tool for multi-tier reporting, which reduced risks of inconsistency, and inaccurate reporting through a lack of standardisation; and created reporting oversight challenges, given the lack of standardised, centralised reporting data.

Participant SA06 indicated that they believe their work has enabled better behaviour in parliamentarians. It promotes public voice and enhances public participation in politics by providing information about their elected representatives and the institutions they serve. It even allows you, the citizen, to provide feedback.

5.2.2 Theme 2: Opening up information and innovating for transparency and accountability

South Africa experiences varying problems concerning transparency and accountability, from maladministration, lack of transparency processes, and lack of ethics to corruption. Expectedly, civic tech actors have identified this challenge as a critical focus area, and the participants alluded to this theme. The participants highlighted that civic tech has been instrumental in transparency and accountability. With key notable movements making government data available on budgets, service delivery, and procurement. Participants informed that civic tech had created better channels for government to share information with citizens more effectively. SA04 highlighted the impact:

> *"Information, but also ways to interact with entities like your municipality informs a lot of work we've been doing. 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 people the power to argue for improving their lives. It helps a lot with accountability. But it also helps for targeted service delivery programs."*

Other platforms, like the People's Assembly, fulfil this theme by providing insight into parliament proceedings. While parliament has a record of its plenary sessions through the 'Hansard', it does not provide public records of the activities of portfolio committees

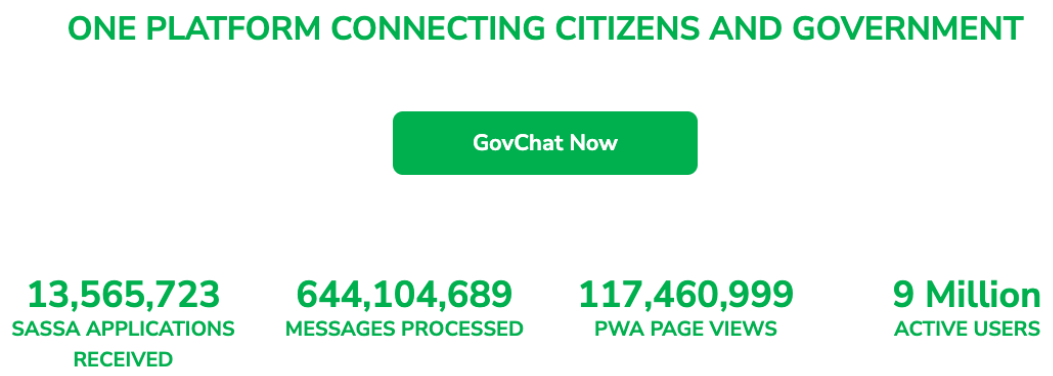
and the other parliamentary committees. Therefore, the People's Assembly and the Parliamentary Monitoring Group provide a comprehensive overview of the proceedings, as they are critical discussions that affect citizens. Citizens can use digital tools to track the proceedings and activities on bill calls requesting citizen participation. Participant SA05 explains that civic tech organisations have made data and government information more accessible, as government data is often in inaccessible formats, and citizens may find them tedious and strenuous to read and find relevant information. According to SA07, civic tech organisations and activists have shown government that there are ways to increase access to information using tools. For instance, National Treasury has implemented open data projects such as Municipal Money and Vulekamali, even budget speeches in collaboration with civic tech organisations.

Participants believe that in the City of Johannesburg, there has been the recognition of a need to open service delivery-related information like procurement information. They were the first city to pilot e-procurement and e-contracting, driven by government. According to SA07, this indicates an increase in the value placed on civic tech-related tools, suggesting a paradigm shift, especially with public servants. Due to the work of civic tech organisations and persistent engagement with public servants, they are now beginning to understand civic tech as an intervention valuable to their work, particularly in the service delivery area.

5.2.3 Theme 3: Institutionalising communication between government and citizens

The researcher determined a trend in the data, showing that communication between citizens and government is limited. Civic tech has been innovative in addressing this challenge. According to participants SA01, SA02 and SA06, civic tech tools have helped to bridge and address the communication gap between government and citizens. They linked this to other efforts in the civic tech community, like civic education and a noticeable increase in interactions between citizens and governments.

Figure 27: *The GovChat platform*



Source: GovChat, 2023

Participant SA07 stated that in some cases, particularly at local levels, civic tech is an intervention that focuses on or highlights the bread-and-butter issues of the community and finds digital and other approaches to address them. For example, using WhatsApp, chatbots, USSD, SMS, and other social media platforms like MobiSAM, Lungisa, and GovChat (Figure 27 above) enables citizens to report service delivery issues and connect and communicate with national, provincial, and local government representatives. For example, MobiSAM, which allows citizens in Makhanda to log a particular issue and have a response of some sort from the municipality, is one of the interventions where the problem revolves around citizens not receiving responses and not finding solutions to fundamental issues.

SA07 mentioned that civic tech contributes to the municipal and local government space connecting citizens and enabling the municipality to better track service delivery issues. In that regard, she believes that civic tech facilitated an essential conversation between government and citizens, as the platform enabled offline and online conversations between municipal officials and those they were supposed to serve. To some extent, building conversation helps build trust between citizens and their local government. Civic tech enables an environment that values and encourages inclusive participation, as accessible tools and interfaces facilitate broader public participation (May & Ross, 2017).

SA06 explained that civic tech platforms are actively enabling citizens to contact public representatives, comment on bills and engage local government about service delivery issues they are experiencing.

5.2.4 Building platforms to support citizen participation processes and enable an informed public

Connected to the communication theme, another common theme that emerged across the interviews was the belief that civic tech has fundamentally changed public participation in public issues and policies. Furthermore, it has significantly shaped an informed and empowered public. SA01 and SA05 shared that due to civic tech, citizens are no longer ignorant of the severity of governance issues, especially in the service delivery area. They are informed and motivated to participate in various ways, including reporting problems, demanding accountability, and participating in policy issues. SA04 notes that civic tech has opened new channels of participation. Previously, opportunities for public participation were often through public meetings over a series of days. Civic tech has introduced digital approaches, enabling more involvement for people who cannot always physically attend meetings.

A notable change is the institutionalising of public participation in the Integrated Development Plan (IDP), which aims to improve and provide faster and more appropriate delivery of services and provide a framework for economic and social development in a municipality. SA07 explained that civic tech has influenced municipalities to recognise and understand the need to begin engaging with people in the IDP processes. As a result, municipalities like the City of Johannesburg and Cape Agulhas have established new ways of inducing social media, government portals, and emails for citizens to engage the municipality on IDP government bills. SA07 contended that this has changed participation and made it open and inclusive.

An example raised by SA04 illustrated the benefit of civic tech to local communities through its approach of providing tools and information. Grassroot, a civic tech organisation created a tool for people to organise around community issues. The

organisation did not have any guidelines for the potential use of the tool. The result indicated that people used it to speak to each other about issues. Before launching the tool, people were often excluded as they could not attend physical community meetings. This tool enabled the community to discuss and organise on issues like power outages and public toilets, and plan remedial action as a community. This is consistent with a finding by Skaržauskiene & Mačiulienė (2020), which revealed that some civic tech organisations are concerned with building tools that can be used to improve citizens' daily lives like healthcare services, improved education, and make accessibility a priority.

Regarding the informed citizen aspect, SA01 contended that CSOs are still leading in more informed engagement with government and on citizens' behalf because they have the skill, capacity, and understanding of government processes and strong relationships with citizens.

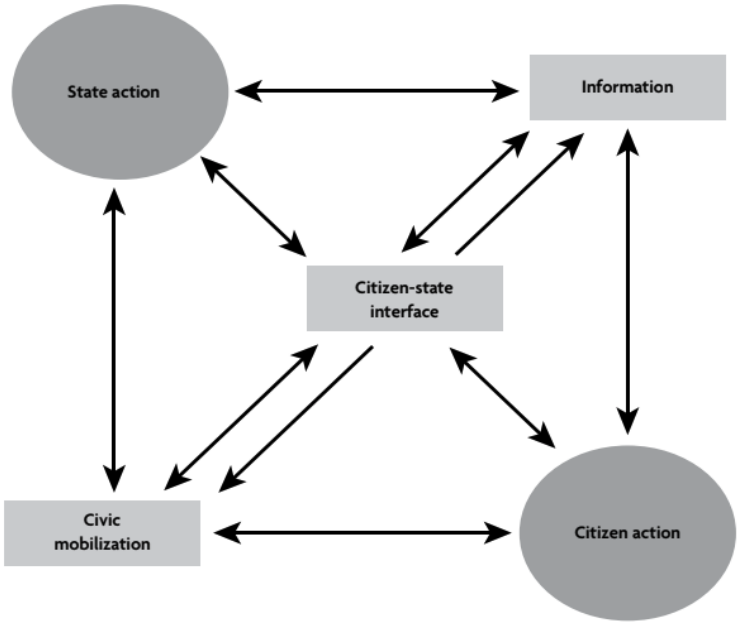
5.3 Discussion: Conceptual analysis of civic tech as a social accountability intervention for improved governance

While civic tech organisations in Nigeria and South Africa use varying approaches and methodologies to increase social accountability in governance, the analysis indicates similar understandings of how civic tech enhances governance in both countries. Therefore, this section combines an analysis of both countries. The interviews indicate a consensus that civic tech has contributed to governance in multiple ways.

The study used the social accountability framework to explore and provide empirical evidence of how civic tech enhances governance in Nigeria and South Africa. Grandvoinnet et al. (2015) explain that social accountability mechanisms present various possible outcomes in improving the relationship between government and the public, improving governance in service delivery areas, and enhancing government institutions. Civic tech initiatives can be viewed as social accountability interventions for improving governance, as their work focuses on the five components of social accountability. Grandvoinnet et al. (2015) conceptualised an interaction between citizen and state action sustained by three 'levers'' that drive government-citizen action, including information,

interface, and civic mobilisation (Figure 28 below). The study combines Grandvoinnet et al.'s (2015) and Brinkerhoff and Wetterberg's (2015) understandings of social accountability to explore civic tech.

Figure 28: *Social accountability as the interplay of five elements*



Source: Grandvoinnet et al., 2015.

5.3.1 Citizen action: Enabling citizen engagement and participation

According to Bergh et al. (2022), accountability can be understood as implementing citizen participation in governance issues, enabling citizens to account for state activities. Civic tech research has found that civic tech has emerged as an avenue for citizen participation and engagement (Duberry, 2022; Khene et al., 2017). Grandvoinnet et al. (2015) explained this concept as citizen action. The data suggests that civic tech platforms have enabled citizens to engage and participate in formal and informal governance processes. These include participating in policymaking, monitoring public expenditures, monitoring and evaluating public service delivery, participating in public committees and hearings, and participating in or directly managing official oversight bodies (Aaref, 2015). Lukensmeyer (2017) argued that the civic tech field could facilitate significant citizen engagement in policy issues. For instance, a South African civic tech organisation developed a Public Participation Guide, a product idea spurred by

engagements with both citizens and government over several years. The guide categorises engagement opportunities and highlights them to citizens, providing meaningful political opportunities for citizens to participate democratically.

Civic empowerment is a foundational concept in social accountability. According to Grandvoinnet et al. (2015), for citizen action to happen, intermediaries are required to encourage and capacitate citizens for collective action. The study can conclude that civic tech organisations are highly concerned with empowering citizens to trigger and support citizens' voices, including the voice of disadvantaged and previously excluded communities. At least 35% (66 out of 189) of African civic tech initiatives included empowerment in their objectives. Focusing on the case countries, both countries' civic tech actors undertake actions towards empowering citizens.

The organisations create and use digital tools which unite citizens and provide interfaces for engagement between citizens and governments, information, and advocacy campaigns for raising awareness and supporting citizens through civic education programmes. Their efforts are geared towards mobilising citizens and encouraging individual and collective citizen action, especially in countries with repressed civic communities. The study also found that inclusion is a significant tenet in many civic tech organisations involved in civic mobilisation. Civic tech actors are conscious that privileged citizens and groups who are already politically engaged could use their platforms and tools. Therefore, they use multiple offline and online channels to undertake their work. Using digital tools in conjunction with in-person channels can be vital to broadening participation opportunities for groups who might not otherwise engage.

A significant finding in Nigeria was the shrinking civic tech field. The participants alluded to this as a critical focus and a challenge. Fox (2015) highlighted that addressing limited citizen capacity and collective action is important due to restricted freedom of information, association, and expression in the social accountability framework. Although there are efforts to repress the civic tech field, research participants indicated that some government institutions are interested in using civic tech to improve their departments and the lives of their citizens. The shrinking civic tech field makes Nigeria an unfavourable

environment for collective action; this study established that civic tech had found a role in providing a digital environment to build these conditions to continue enabling social accountability mechanisms for citizens and within government. NIG07 shared that the digital environment is where people feel a lot more confident in freedom of expression, and others mean that *"naturally civic tech becomes an immediate area of interest because the civic tech field is closing."* The researcher can conclude that Nigerian civic tech actors strongly emphasise the connection between civic tech, CSOs, NGOs, grassroots, media and journalism. Many participants highlighted that their work is connected to the development sector.

Further, the South African advocacy platform, amandla.mobi has enabled better connected and collective action by allowing citizens, particularly black women, to act together on issues that affect them, creating a direct advocacy line leading to positive outcomes, especially with campaigns that have resulted in government action because of the collective action.

According to Fox (2015), social accountability is viewed as an inclusive concept that encompasses citizen oversight of public and private sector performance, user-centred public information access / distribution systems, public grievances and grievance redress mechanisms, and citizen participation in decision-making in resource allocation like participatory budgeting. This study's findings indicate that civic tech in both countries contributes to the improvement of governance through enabling and providing access to government data and information, informing and engaging citizens in governance processes, innovating for and with government, and increasing citizen participation and communication between government and citizens.

5.3.2 State action: Civic tech for accountability and transparency

Often, social accountability stems from citizen engagement, and citizen demands for accountability and improved governance (Ruppen & Brugger, 2022). This study considers civic tech a social accountability intervention using digital technology to improve governance. According to Booth (2012), (in Ruppen & Brugger, 2022), social

accountability interventions focus on two central ideas, enhancing transparency and access to information to enable citizens' voices and encourage them to use available information to demand increased transparency and accountability.

Globally, there has been an increasing demand for accountability and transparency in governance, especially in countries where corruption is rife, like Nigeria and South Africa. The lack of accountability and transparency results in dwindling trust in government institutions and elected representatives. The findings of this study indicate that the calls for leading activities in accountability and transparency have emerged from civic tech organisations, supported by other actors like traditional CSOs, NGOs, activists, and the media. The nature of civic tech organisations in Nigeria and South Africa can be linked to accountability and open government movements and organisations like Transparency International and the Open Government Partnership (Turek, 2019). The study found that civic tech actors and government now use civic tech to deepen accountability and transparency requirements. These organisations are committed to using digital methods to challenge or reform the status quo where accountability and transparency are lacking. Civic tech organisations have created formal and informal mechanisms to bridge accountability and transparency gaps.

For instance, various e-governance projects in South Africa are associated or linked to the civic tech ecosystem. Municipal Money and Vulekamali and others are a result of government recognising efforts from the civic tech community, particularly their work on open budgets. Government institutionalised these open budgets projects and adopted the platforms as official government platforms to provide citizens with accessible and easy-to-read information about government budgets and spending. SA07 stated that

> *"Institutionally some of these things might take a while to change, but there has been some change, for example, the National Treasury has now deepened they're of use of a transparency portal, Vulekamali, by trying to link it to a pre-budget consultation process which is new."*

Although civic tech has positioned itself within governance as a crucial actor which can contribute to increasing transparency and accountability, the outcomes of their

interventions depend on various aspects. These include existing state-society accountability mechanisms, the relationship between government and citizens, the receptiveness of government to respond, and the citizens' willingness, ability, and capacity to challenge and demand better governance (Brinkerhoff & Wetterberg, 2015; Fox, 2015; Grandvoinnet et al., 2015). The study found an increased awareness of this fact in Nigeria and South Africa. While they can create platforms to improve state-society relationships and increase citizens' willingness, ability, and capacity, actors in both countries have found that government remains relatively unresponsive. Often, the result of the work conducted by civic tech organisations is a collection of data reflecting a lack of response and government incompetence, which speaks to the information dimension and shows a lack of state action.

5.3.3 Access to information: Operationalising accountability and transparency mechanisms

Civic tech often relies on data and information to build platforms and undertake its work (Rumbul, 2016b). Civic tech is similar to other social accountability initiatives in that information is central to its work, as there is a deep belief within the community that information can strengthen accountability and transparency (Brinkerhoff & Wetterberg, 2015). According to Brinkerhoff and Wetterberg (2015), an accountable and responsive government that encourages citizen participation in decision-making requires the flow of information between citizens, government, and other governance actors. Ensuring accountability requires a wide range of information, often of a highly technical nature, including laws, policies, standards, targets, performance, assets, budgets, income, and expenses. The study's findings indicate that access to information is one of civic tech's governance challenges and drivers. Civic tech organisations actively create platforms to provide information to citizens and governments.

Social accountability literature highlights that providing information is insufficient to improve governance (Fox, 2015), and the study found that Nigerian and South African civic tech are often concerned with providing information to citizens. The information must be actionable to improve accountability and transparency through access to information.

Information generation, simplification, presentation, accuracy, access, and, most importantly, use must be considered (Fox, 2015; Grandvoinnet et al., 2015). In this regard, the findings reveal that civic tech actors are concerned with providing access to information and ensuring that the information is helpful for citizens and other stakeholders. Civic tech actors in both countries deliberately provide citizens with information on service delivery, elections, government budgets and spending and others. They often combine their open data platforms with other strategies relevant to the context, including information campaigns, working in collaboration with journalists, and offline activities like community hall meetings. These efforts are meant to inspire collective, citizen, and state action. This is consistent with Fox's (2015) assertion that interventions must combine access to information with a supportive environment to foster accurate public sector response and citizen voice and action.

5.3.4 Interface: Civic tech as innovation for the demand and supply sides of governance

According to Bergh et al. (2022), accountability interventions could reduce the distance between government and citizens and restore trust in state institutions. Social accountability literature focuses on the demand-side factors (civil society and citizens) and neglects the importance of the supply-side factors (state structures and processes) (Brinkerhoff & Wetterberg, 2015). Research has indicated the importance of focusing on both sides equally. For social accountability interventions to reach their goals, they must improve governments' capacity and enhance its willingness to respond to citizens (Grandvoinnet et al., 2015).

Where the citizen-state interface dimension is concerned, the findings reflect that civic tech actors value both the demand and supply sides of social accountability in efforts to improve governance. Therefore, civic tech organisations are creating communication interfaces for government and the public. However, the study found that the success and sustainability of these interfaces are negatively affected by the limited responsiveness from the states' side. Civic tech organisations are concerned with embedding citizen participation processes and tools into government institutions and activities. However,

government support or partnership is critical to initiating and embedding tools and processes into the institution. The researcher can conclude that while civic tech organisations in both countries focus on public institutions, the South African actors concentrate on improving government functions more than the Nigerian actors. This could be due to the extent of government receptiveness to civic tech. South African participants indicated a higher interest from government to collaborate, while the Nigerian counterparts have found it somewhat difficult to penetrate the government sector. Nonetheless, the study found that more Nigerian civic tech organisations are increasingly developing an interest in improving government institutions, and the participants indicated that there had been a slow but noticeable shift as government became more interested in working with civic tech actors.

The research found that civic tech has been acting as a social accountability mechanism, triggering and encouraging public offices to implement changes towards better governance. Moreover, after years of peer learning, civic tech actors have adopted the 'Build with, not Build for' mindset. This highlights their commitment to including relevant government actors and affected citizens in their work. This issue is particularly acute in matters affecting local communities and governments, and research by Khene et al. (2021) revealed that building a civic tech tool with government and local citizens has a better chance for usage and impact.

5.4 Emerging ideas: Strategies and approaches for the civic tech field

This section presents the ideas shared by interview participants, and it combines participants from both countries' insights, as the respondents did not limit their strategies to their countries. Research participants shared strategies to circumvent the obstacles and limitations faced by civic tech organisations in their countries and across the continent. According to database analysis, literature review, and participants' insights, both countries are experiencing similar challenges, especially the lack of financial stability and sustainability. The following accounts for the four strategies and approaches civic tech actors have either used or suggested could be helpful in the country and continental civic tech ecosystem.

5.4.1 Collaborative relationships with government departments

First, there was consensus that building and establishing relationships with government could significantly increase the impact of civic tech**.** Due to the long-existing mutual distrust between government and civic tech organisations, civic tech organisations are often unable to conduct their work, as government departments control their focus areas. One emerging understanding from this study is the need for a healthy collaboration ecosystem between civic tech actors and government departments. Participants explained that this required engaging the appropriate government level and understanding the issues. Peixoto and Sifry (2017) and Pade-Khene et al. (2017) considered the importance of including or working with government as comprehensive collaborations with government institutions are linked to governments' willingness, skills, and resources. The notion is that civic tech can be potent to effect change within governance. This implies that when governments are included with civic tech organisations at the beginning of the project, they can better cater to citizens and provide appropriate responsiveness.

5.4.2 Strategic multi-stakeholder collaborations

The second strategy is creating strategic multi-stakeholder collaboration. The researcher can conclude that collaboration is a crucial strategy that civic tech actors believe is vastly underused and could significantly help the community confront some of the challenges they came together with. Participants highlighted the need for creating collaborative groups, especially with other civic tech actors and traditional CSOs. One participant maintained that creating a collaborative group focused on helping the civic tech community regarding product adoption, user testing, and research, could be valuable. Collaboration between the actors would enable the creation and active use of community spaces for workshop ideas, build trust amongst each other, and leverage each other's strengths while learning from each other. Working together enables civic tech actors to share resources by creating, sharing and reusing technologies across the continent, corresponding with Yoshida and Thammetar's (2021) assertion that successful civic tech projects depend on close collaboration and synergies between different groups of actors.

Multi-stakeholder community fields could streamline institutional monitoring and evaluation methods for conceptualising and measuring civic tech impact. This approach could help the civic tech community respond to one of the major criticisms: often, the literature highlights that civic tech is failing to introduce effective and standardised impact assessment methodologies (Duberry, 2022; Chatwin & Mayne, 2020; John & Sjoberg, 2020; May & Ross, 2017).

5.4.3 Engaging with policymakers

The third approach was active participation in the policy field. The study found that civic tech is actively influencing policy and has a role in influencing policy and creating an enabling environment. One participant elaborated that African civic tech organisations could learn from the private sector, as it is often engaged and involved in conversations and decisions on their work, like data protection, data governance or artificial intelligence governance. Consequently, civic tech organisations must establish themselves in innovation communities and policy sectors, as the digital technology infrastructure, data policy, and regulation significantly impact them.

5.4.4 Sustainable funding streams

The final approach was strengthening the revenue component and creating direct funding and sustainability strategies. Participants highlighted the need to assess power relations between civic tech organisations and donors, and advocate for better relationships where the civic tech organisation has the agency to create conditions that will result in a positive impact. Due to changes in the funding landscape, for example, funders change their strategic directions every three to five years, impacting civic tech organisations. Therefore, civic tech organisations must challenge funders more and reduce the power gap between civic tech actors and international funders.

The study found that participants consider these strategies and approaches to navigate the challenges and limitations impeding the transformative potential of civic tech in governance.

5.5 Summation of findings

The study aimed to offer an understanding of the evolution of civic tech and its role in supporting participatory and responsive governance. The study found that civic tech initiatives are influential in empowering the public and strengthening governance. Civic tech has become an instrument to improve governance through providing platforms and implementing for citizen engagement and participation, training and supporting governments to build capacity to respond to citizens, and creating various channels and opportunities for increased citizen empowerment. Civic tech has found relative success in building relationships with relevant government departments, and the data revealed various pockets of collaboration between them. The study showed that civic tech organisations have effectively pressured government to either innovate internally or collaborate with organisations in the civic tech community to address governance challenges. The research indicated that systematic challenges remain and continue to result in the lack of, or slow, government responsiveness to citizens' voices and demands.

Civic tech has become a prominent intervention for driving social change and encouraging better governance that improves the quality of life for citizens. Over the last 15 years, civic tech has created informal, formal, practical, and, in some cases, legal conditions and methods for citizens to engage, participate in governance issues, express themselves, and demand accountable and transparent governance. Civic tech could be linked to increased civic empowerment, civic efficacy, citizen participation and engagement, strengthened accountability and transparency and improved government institutions.

Chapter 6: Building a transformative civic tech ecosystem

This study aimed to explore civic tech's influence on governance in Nigeria and South Africa. This section concludes the study and explains the research contributions. The researcher can conclude that the two cases examined were valuable in illuminating and establishing the drivers of civic tech organisations and illustrating the contribution of the civic tech community in governance. The social accountability conceptual framework enabled the researcher to understand how civic tech enhances governance.

6.1 Multiple interacting and connected drivers

Accordingly, the study can confirm that in Nigeria and South Africa, civic tech is driven by governance challenges, such as decreasing citizen engagement and participation, low levels of trust in government institutions, high levels of corruption, increasing inequality, and lack of transparency and accountability as established by literature (Dickinson et al., 2019; Fan et al., 2019; Gilman, 2017; Rumbul, 2016a; Saldivar et al., 2018). Similarly, the study also connected motivations of civic tech to the rise in digital technology, the tech industry, and various global movements (Chatwin & Mayne, 2020; Rumbul, 2016b; Skaržauskienė & Mačiulienė, 2020).

Therefore, the drivers of civic tech in both countries comprise a spectrum of influences connected to the state of governance, active civic actors, technological advancements, and development agendas. Consequently, civic tech can be recognised as a product of complex and interacting drivers connected to a growing understanding that social accountability interventions can be used to improve governance. The study also found that civic tech is often developed and designed to complement existing governance structures for social accountability. This includes challenging existing inefficient interventions that do not empower citizens, criticising the lack of interventions for governance failures, and finally, providing channels for citizens to participate in social accountability.

6.2 Civic tech as a social accountability framework

Revisiting Brinkerhoff and Wetterberg's (2015) instrumental aims of social accountability interventions, the researcher can conclude that civic tech has been contributing to governance in the following ways:

6.2.1 Enhancing governance

The overall goals of the civic tech studied indicate their main goal is to improve governance, particularly in enabling citizen engagement and participation and strengthening accountability and transparency. The study found that in both countries, countries plagued with corruption, civic tech actors have been using various approaches and techniques to improve accountability and transparency. These include working with government institutions to build open data and budget initiatives, budget monitoring platforms, information campaigns to inform citizens and more.

6.2.2 Increasing efficiency and effectiveness in service delivery

Several civic tech organisations in both countries, such as Tracka, FollowtheMoney, Lungisa, GovChat and MobiSAM, focus on or include service delivery in their primary goals. The study's findings indicate that these civic tech organisations approach this issue in two ways. First, by working in collaboration with the government to improve the delivery of services and capacitate the government to enable better. Secondly, by allowing citizens to track, monitor and report issues related to service delivery. This enables increased citizen input and communication between citizens and government. In Nigeria, for example, Tracka has moderately influenced changes in the service delivery area. The tool has given citizens the channels to demand better service delivery, leading to relevant government actors completing service delivery projects. However, there is limited evidence illustrating consequences for government actors failing to deliver public services. Some platforms do not improve governance; instead, they alleviate the challenges or governance issues citizens experience. For example, the EskomsePush tool does not improve the delivery of electricity but enables citizens to plan their lives better by providing them with power cuts schedules.

6.3 Recommendations for the civic tech ecosystem

The study established and illustrated various collaborations between civic tech and governments in Nigeria and South Africa. This indicates an openness and understanding of civic tech within governments. Effective and impactful civic tech interventions require some engagement with government institutions. The researcher concludes that governments are increasingly working with civic tech organisations, enabling governments to advance their digital governance efforts.

Although the positive shift of government towards civic tech organisations is commendable, sustaining an active and influential civic tech field requires funding. Citizens and government institutions are the two main beneficiaries of civic tech tools. As civic tech organisations rethink ways of strengthening the community's funding and sustainability strategies, they must consider government as a funder. Government institutions could collaborate with civic tech actors to fix government functions and systems as an alternative to government departments replicating civic tech tools.

Furthermore, many civic tech initiatives have faced procurement and bureaucratic challenges when working with governments, as it is difficult for small civic tech organisations to compete with more prominent innovation companies. Most civic tech initiatives adopt agile approaches and user-centred design, making it difficult to collaborate with governments, as governments have siloed structures and, most importantly, work within set parameters and procurement systems. Further, governments are vulnerable to changes in leadership and structures due to elections and politics, which affects the projects and progress and hinders impactful projects and collaborations.

As African civic tech mainly depends on international philanthropic funding, there is a clear need to assess power relations between civic tech organisations and donors and advocate for better relationships where the civic tech organisation has the agency to create conditions that will result in a positive impact. This could help civic tech actors to reduce the power gap between themselves and project funders and therefore help civic tech actors advance governance agendas relevant to their contexts.

While civic tech is improving governance, it remains challenging to measure its influence due to how civic tech is constructed, adopted, and used. Civic tech has grappled with establishing and streamlining institutional monitoring and evaluation. As civic tech has grown for the last 15 years, the need for effective impact evaluations has become increasingly apparent. This raises an opportunity for the community to combine their efforts and create a synergy where civic tech impact measurement is concerned. The study can conclude that the success of civic tech initiatives is connected to the social accountability pre-conditions that existed before the introduction of civic tech. Consequently, the civic tech field needs to establish a causal relationship between its existence as a social accountability mechanism and notable improvements in governance.

6.4 The potential impact of civic tech in Nigeria and South Africa

Although African governments face various governance challenges, civic tech organisations have realised that the governance issues are opportunities to innovate for civic life. Civic tech has engaged citizens and researched ways to build better citizen-focused digital governance. This research and other lessons from civic tech efforts could inform improvements within governance.

The researcher concludes that while civic tech is one of the remedies to governance challenges, it cannot effect change independently; it must be adopted strategically and combined with capacity-building and process improvements. This includes building and improving their relations with government departments. SA02 appropriately stated that civic tech is a mechanism, "*civic tech is the pipe, it's not the water; if you're trying to give people water, they don't care about the specific specifications or technical parameters of the parts; they want water*." This quote captures a fitting understanding of civic tech where governance is concerned. Ultimately, citizens want improved governance that serves their needs and demands, as the purpose of governance is to create societies and communities where people's needs are met, and there is good management of public assets and public space. In that regard, civic tech is one of the mechanisms that can be

used to strengthen governance, and often, it can be used to transfer and scale governance solutions.

The research found enthusiastic support for the opportunities for civic tech arising in the governance space. Although the civic tech community often finds it difficult to penetrate government departments, the progress made by several organisations in working with government shows promise. Furthermore, civic tech is emerging as a community contributing to government capacity, skills, efficiency, and effectiveness while educating and providing citizens with the tools and information they need to engage in governance. Moreover, many civic tech organisations embedded inclusion in their work to address the reproduction of social exclusion, inequalities, and barriers that block women, youth, and other disadvantaged communities from participation due to the existing governance challenges.

The study found high levels of awareness of a significant issue within civic tech ie the lack of sufficient understanding of the governance issues and romanticising the power of civic tech. Participants argued that civic tech organisations' attempts to fix governance problems had not paid adequate attention to the key issues and romanticised civic tech as a panacea for the problem. Revealing that some do not appreciate the significant difficulties in changing or challenging systems. Based on the findings, the study surmised that civic tech organisations understand that improving governance is a long and difficult process. Often, political systems are not interested in an accountable and transparent society that serves its citizens effectively. Therefore, civic tech actors in both cases seek leaders in the civic space, media, government and public to continue this work.

6.5 Reflections on methodology and future research

The research approach was productive, and the combination of the database and interviews enabled the researcher to draw compelling insights about civic tech in Nigeria and South Africa. The research data collection methods allowed the researcher to use and combine secondary and primary data. It enabled the researcher to incorporate the two countries’ civic tech actors’ experiences and perspectives on civic tech and

governance. This allowed the researcher to examine the development of Nigerian and South African civic tech and how it contributes to governance using a combination of the data provided in the database and the interview participants' experiences and examples.

While the case study methodology enabled the researcher to offer a picture of how civic tech influences governance, it was limiting as it did not allow the researcher to delve into the extent of the contribution. Although the study included the mapping and description of the African civic tech ecosystem, it did not include an evaluation of the quality and effectiveness of civic tech platforms. Although the database is a significant resource for research, the lack of information on the platforms due to the platforms shutting down or lacking online records created issues for the study as some organisations had limited data on pertinent research points like objectives, mission, and vision statements. Having this data could have influenced the study differently and offered additional insights.

While this study responded to the main research question, it raised further questions and future areas for research, particularly concerning measuring the effects and impact of civic tech in a particular setting. Future research could investigate the impact and effectiveness of selected civic tech interventions in specific locations to provide comprehensible evidence. As African governments become more focused on digital governance, it is prudent to actively study the civic tech field's efforts in using digital governance tools. Future research could include interviewing citizens and government to help determine how civic tech has changed governance for the demand-side factors (civil society and citizens). This could help substantiate its role in governance. There is an increasing need to evaluate civic tech initiatives as governance intervention, like how civic tech has transformed transparency in a procurement system or impacted service delivery.

This study generated a picture of the civic tech ecosystem in two African countries. It demonstrated how civic tech affects and improves governance in Nigeria and South Africa despite its various challenges. The study's findings reflect civic tech influencing governance in access to information, service delivery, accountability and transparency, citizen engagement and participation. However, there is an increasing need for

evaluations of civic tech initiatives as governance interventions; these could offer a deeper understanding and direct evidence of the long-term contribution of civic tech.

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Appendices

Appendix 1: Interview Guide

Interview Guide for exploring how civic technologies (civic tech) are contributing to governance in Nigeria and South Africa research project

The researcher has developed this interview guide to ensure that both the researcher and participants consistently focus on the research question and its three dimensions while providing structure and flexibility in the interview conversations.

The above-proposed interview guide will aim to answer the main question of this research study: How is the emergent African civic tech community contributing to governance in Nigeria and South Africa??

NB: Interview answers do not need to be exclusive to your organisation, the researcher is interested in your perspective as both an expert and civic tech practitioner.

Sub Questions	Rationale
Sub-question 1: How are civic tech initiatives addressing governance issues?	Civic tech is focused on various sectors, this question helps the researcher understand the civic tech environment and its convergence with governance. It helps the researcher explore how civic tech is possibly sharing/reshaping governance and how governance issues are influencing the civic tech ecosystem in these countries. For example, this question will help in interrogating how the emergence of civic tech has changed governance, i.e what has changed in governance since various civic tech organisations have come onto the scene.
a. Civic tech has been steadily growing in Africa since Ushahidi, what do you think has been its effect on governance since then? b. In what ways do you think civic tech has enhanced/influenced governance? / How is governance benefitting from civic tech in your country? c. In terms of governance, what would you say are the top 4 issues you have seen Nigerian/ South African initiatives tackling? d. Do you think civic tech initiatives are a result of governance issues? If yes, could you offer some examples? e. 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? f. What would you say is the impact of civic tech on governance in Nigeria/South Africa?	
Sub-question 2: To what extent has governance issues in Nigeria/South Africa led to the	Civic tech is influenced and driven by various factors e.g governance issues, the responses to this question will help identify the factors that have been driving civic tech

emergence of civic tech initiatives?	and how they have been influencing the development of civic tech, especially those focused on governance.
a. From your experience, what factors have led to the creation of civic tech organisations, especially those focused on governance? b. What are the key social, economical, and technological factors that influence the development of civic tech in your country and how do they affect civic tech? c. To what extent is the creation of civic tech in Nigeria / South Africa tech-driven, funding driven and/or governance (solutions) driven? d. What technologies have you used and how/for what purposes or objectives? e. 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?	
Sub-question 3: What are the key challenges affecting the governance-focused civic tech initiatives in two case study countries, Nigeria, and South Africa?	By identifying the challenges of civic tech organisations, the researcher can begin to explore how these problems are impeding the progress and impact of civic tech organisations. This also helps highlight the key problems and possible key solutions that civic tech organisations must pay attention to and form new research ideas.
a. In great detail, please share any specific challenges civic tech initiatives are facing in your country. b. How are the issues/factors impeding the success/uptake of civic tech in Nigeria / South Africa in the governance sector? c. What policy issues do you come across in the space, particularly as a challenge? (Do policies in your country enable or constrain or enable and support the development and adoption of civic tech?	

Appendix 2: Database Codebook

This codebook is used to explore the African civic tech database. The codebook is informed by the literature and background of the study and includes some adaptions from the African Civic tech database by the Civic Tech Innovation Network and Civic Tech Field Guide.

Code	SubCodes	Definition	Example
Sectorial focus area	• Agriculture • Education • Environment • Governance • Justice/Human Rights • Gender • Youth • Health • Humanitarian Response • Other	Civic tech often focuses on a wide range of issues in different sectors. This code focuses on the civic tech organisation's operating sector	Civic tech organisations that aim to help students find/provide educational resources or civic tech platforms which digitise educational resources to underrepresented groups.
Governance themes/focus areas *Governance goals	• Transparency • Accountability • Participation & engagement • Service delivery • Policy • Inclusion	Civic tech projects which focus on governance areas	A platform that facilitates civic engagement and participation by providing a two-way communication channel between the government and citizens OR increase transparency and accountability
Social accountability	• Transparency • Accountability • Participation & engagement • Service delivery • Inclusion	Social accountability approaches the organisation uses to contribute to addressing governance issues	• Public information-sharing, • Policy-making and planning; • Analysis and tracking of public budgets, expenditures and procurement processes; • Participatory monitoring and evaluation of public service delivery, • Implementing anti-corruption measures and complaints handling mechanisms.

Motivations	• Drivers • Motivating factors	What motivation, goal or aim led to the creation of the civic tech organisation tech project in action?	Lack of transparency and accountability OR Need to enable participation in public policy OR Unfair elections
Approaches	• Activities • Methods	How are civic tech organisations doing their work i.e The approaches civic tech initiatives are used to contribute to the evolution of governance/ the activities they undertake	• Data-driven engagement and orientating the youth on the importance of participating in voting and election processes. • Tracking the government expenditure and implementation of government projects in their community to facilitate service delivery.
Types of actors	• Non-Profit • Academic & research institutions • For Profit/business • Government • International organisations •	The type of organisation i.e what is the classification of organisation	NGOs, CSOs, startups, philanthropic organisations, advocacy groups, Grassroots organisations
Target Groups		The group of people the organisation, directly and indirectly, focuses on serving with project activities	• Citizens • Communities • Women • Youth • LGBTQ+ people.
Types of technology	Tech methods	The technology choice used by the organisation	SMS, USSD, website, AI

Appendix 3: Initial Database Structure

Variable	Description/Classification
Project Name	Provides the project name
Organisation Description	Describes the project and provides background details
Mission & vision statements	Provides the organisation's stated mission and vision statements
Project Status	Indicates the project status **Based on latest activity on website, announcements, and social media accounts*
Start year/Founded	Provides the project start year
Project_owner/Host organisation	Provides the name of the project owner - the organisation that builds and maintains it
Organisation type	Indicates the owner type
Project headquarter country	Provides the name of the country in which the project owner is/was registered
Project active countries	Provides the names of the countries in which the project is/was active
Project partners/funders	Provides the names of other project partners and funders
Project sector	Indicates the (primary) sector in which the project is/was active
Project objectives	Indicates the project objective - what the organisation aims to achieve
Project Activities	Indicates the project activities - The activities the organisation undertakes to achieve their objectives
Project technology	Indicates the (primary) project technology - The technology choice used by the organisation

Appendix 4: Ethics clearance letter

SCHOOL OF Literature, Language and Media ETHICS COMMITTEE
CONSTITUTED UNDER THE UNIVERSITY HUMAN RESEARCH ETHICS COMMITTEE (NON-MEDICAL)

CLEARANCE CERTIFICATE **PROTOCOL NUMBER:** SLLM-LINK-1

PROJECT TITLE Exploring how civic technologies are contributing to governance in Nigeria and South Africa

INVESTIGATOR Melissa Zisengwe

SCHOOL/DEPARTMENT SLLM/LINK

DATE CONSIDERED 15 September 2023

DECISION OF THE COMMITTEE Approved

RISK LEVEL Minimal risk

EXPIRY DATE 15 September 2024

ISSUE DATE OF CERTIFICATE 18 September 2023 **CHAIRPERSON** Prof. Anette Horn

A. Horn

cc: Supervisor : Prof. Lucienne Abrahams

DECLARATION OF INVESTIGATOR

To be completed in duplicate and **ONE COPY** returned to the Chairperson of the School/Department ethics committee.

I fully understand the conditions under which I am are authorized to carry out the abovementioned research and I guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee.

PLEASE QUOTE THE PROTOCOL NUMBER ON ALL ENQUIRIES

Appendix 5: Interview participation sheet

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

Research Participant Information Sheet

Dear

I am writing this as a Master's student at the University of the Witwatersrand.

My name is Melissa Zisengwe and I am a Masters in ICT Policy and Regulation (MA ICTPR) at the University of the Witwatersrand, Johannesburg. As part of my studies, I have to undertake a research project, and I am exploring how civic technologies are contributing to governance in Nigeria and South Africa as well as using the Civic Tech Innovation Network's civic tech database to explore the African civic tech landscape. I am doing the research under the supervision of Dr Lucienne Abrahams and Mark Burke.

The research has two main aims, to contribute to the existing literature on civic tech and its contribution to governance by offering an overview of the African civic tech landscape as well as a more in-depth look into two African case studies. The research will further explore the key driving factors that influence the creation of civic tech, the governance issues addressed by civic tech and the key challenges in the civic tech ecosystems in Nigeria and South Africa.

Your organisation has been an influential and key player in the Nigerian/South African civic tech space therefore as part of this study I would like to invite you to take part in a virtual semi-structured interview as an expert in Nigerian/South African civic tech. I would like to have an in-depth conversation with you therefore the interview will be around 60 minutes. The interviews will be carried out on Zoom. I will share an interview guide with you before the interview to allow you time to consider your responses. The interview guide will show you the questions I intend to ask and build on during the interview. There will be no personal costs to you if you participate in this project, you will not receive any direct benefits from participation but there are no disadvantages or penalties if you do not choose to participate or if you withdraw from the study. With your permission, I would also like to record audio and video. This recording will be stored in a Dropbox folder and only the researcher will have access to this recording. It will be deleted after 5 years. You may withdraw at any time or refuse to answer any questions if you do not want to.

All participants will have two options for the interview:

- The first option offers complete confidentiality and anonymity. This means that I will not be asking for your name or any identifying information, and the information you give to me will be held securely and not disclosed to anyone else. I will be using a pseudonym (false name) to represent your participation in my final research report. If you wish to remain anonymous during the interview you are welcome to switch off video during the interview.
- The second option offers confidentiality and identification, this means that as a participant your identifying data will be disclosed and anyone reading the results may be able to identify you as the participant.

If you experience any distress or discomfort at any point in this process, we will stop the interview or resume another time.

If you have any questions during or afterwards about this research, feel free to contact me on the details listed below. This study will be written up as a research report for degree purposes. If you wish

Appendix 6: Consent form

Research Consent Form

Title of project: Exploring how civic technologies are contributing to governance in Nigeria and South Africa

Name of researcher: Melissa Tsungai Zisengwe

I, ……., agree to participate in this research project. The research has been explained to me and I understand what my participation will involve as outlined in the participant info sheet. I agree to the following:

(Please circle the relevant options below).

Option 1: If you would like to be anonymous please fill in this section:

I agree that my participation will remain anonymous	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that the interview may be video recorded	YES	NO
I agree that the information I provide may be used in an anonymized format after this project has ended, for academic purposes by other researchers, subject to their own ethics clearance being obtained.	YES	NO

Option 2: If you would like to be identifiable please fill in this section:

I agree that my participation will not remain anonymous	YES	NO
I agree that the researcher may use identifying information and extracts/quotations in his / her research report	YES	NO
I agree that the interview may be video recorded	YES	NO
I agree that the interview may be audio recorded	YES	NO
I agree that the information I provide may be used in an identifiable format after this project has ended, for academic purposes by other	YES	NO

Appendix 7: A copy of the certificate



TRREE

Zertifikat
Certificat
Certificado
Certificate

Promouvoir les plus hauts standards éthiques dans la protection des participants à la recherche biomédicale
Promoting the highest ethical standards in the protection of biomedical research participants

Certificat de formation - Training Certificate

Ce document atteste que - this document certifies that

Clinical Trials Centre
The University of Hong Kong

Melissa Zisengwe

a complété avec succès - has successfully completed

Introduction to Research Ethics

du programme de formation TRREE en évaluation éthique de la recherche
of the TRREE training programme in research ethics evaluation

Release Date: 2022/03/12
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Professeur Dominique Sprumont
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[REV : 20220217]

Appendix 8 Examples of the objectives of African civic tech organisations

Objective	Illustrative quotes
Empower citizens and improve the quality of their lives	• *Citoyenne Tech is a platform like any other civic platform, which aims to raise awareness and sensitise citizens to play their roles well in election periods. That being said, the platform makes videos and audios available to all citizens which can be guides in their choice of candidate. Chad* • *#CreateYourKLA is a civic project that uses data artistry to empower citizens to seek better public services in their communities. Pollicy, Uganda* • *MobiSAM allows residents to report problems with service delivery, and allows the government to view these reports and communicate with residents. It is the government's responsibility to provide basic services, but residents have an important part to play as well. We need to encourage integrity and transparency in our government by communicating with them, monitoring them, and holding them accountable. South Africa*
Improve government and its relationship with the public	• *AskYourGov.ug has been built to help members of the public get the information they want about/from Uganda public authorities – by asking for it. It will also make life easier for Ugandan public officials because they will be less likely to have to answer repeated requests about the same subject: once a question has been answered everyone will be able to find the information stored on this website. Uganda* • *To see a community of active citizens that relentlessly make effective use of public information to demand accountability, geared for institutional improvement, efficient services delivery, and an equitable society - Budgit, Nigeria*
Enhance and promote accountability, transparency, and good governance	• *Odekro promotes transparency, provides online access to public records & empowers citizens to keep an eye on public officials.Ghana*

	● *Our goal is to increase accountability in governance by making it easier for Nigerians to connect with their elected officials. Nigeria: Shine your Eye* ● *Municipal Money is an initiative of the National Treasury, which has collected extensive municipal financial data over several years and would like to share this information with the public. The aim is to make this data widely available in order to increase transparency, strengthen civic oversight and promote accountability.* ● *The Citizens' Watch is a promise tracker that is designed to empower citizens with the digital tools and information that enables them to track, rate and publish the most significant promises of politicians, in a bid to promote public accountability and participatory governance. Nigeria* ● *This is a continuation of the work of Al Bawsala which is based on the monitoring of the various institutions in charge of the management of the affairs of the State and the consecration of the principle of transparency - Tunisia*
Facilitate and deepen citizen participation in decision-making	● *TRAC FM transforms citizens from passive listeners to active participants by facilitating informed and interactive debate. Through live radio talk-shows and SMS polls we collect data that helps us advocate for pro-citizen policies. Uganda.* ● *At SEMA, we believe that a citizen's voice can make a difference in the community. In a quick and easy way, citizens can give feedback on their latest experience at a public institution. We provide citizens and public officials with a real time feedback system. Uganda*
Enable citizen engagement	● *South Africa's largest civic engagement platform accessible online, on any mobile handset and feature phones. GovChat connects you with your government across all platforms accessible via any mobile device or feature phone.* ● *Engagement: Sustained, inclusive and plural dialogue between citizens and authorities. Africa Voices, UK.* ● *The Civic Hub is modelled as an accelerator to help social or civil intervention grow into systems for Citizens'*

	– Government engagement. Nigeria ● *Mzinda is a citizen engagement platform where citizens engage with elected councillors, local city councils, ESCOM and Waterboard on service delivery. Malawi*

Appendix 9 Examples of approaches and activities conducted by Nigerian civic tech organisations

Approach	Cases	Illustrative quotes
Government oversight and monitoring	9	• "Budeshi monitors financial contracts and allows for advocacy for local primary health care centres. Budeshi is a dedicated web platform that links budget and procurement data to various public services using the Open Contracting Data Standards (OCDS)." • PPDC - Our PG initiative has successfully revamped public contracting conducts and access to information by improving disclosure practices of public institutions and their responsiveness to citizens demand; enhanced public service effectiveness in Africa and facilitated increased citizen participation in governance • Udeme: This is a social accountability project which aims to use technology and professional reporting to galvanise citizens to get involved in tracking and implementing various projects promised by the Government • We do not just provide simplified access to the budget using creative tools; we also monitor projects to ensure efficient service delivery, advocate for effective fiscal and resource governance and provide support for CSOs and government institutions.- Budgit
Developing and providing tools and platforms	26	• To use adaptive and creative technology to drive content that can empower the citizens capable of demanding for their rights, accountability, institutional reforms, efficient service delivery and equitable society for development of the nation and world at large - ActHub Africa • Revoda is a mobile phone application that helps citizens observe the upcoming Nigerian elections. The platform also allows the developers send location-specific information to the user anywhere in Nigeria • The Citizens Watch makes use of an offline and mobile technology tracking tools, to track the most significant campaign promises of public office holders
Use of media, social media, and other technologies	12	• In its early stages, was able to amplify the voices of the citizens through online(Social media) and offline advocacy with community reporters.' FollowtheMoney
Civic empowerment activities such as civic education campaigns and activities	18	• "We empower people, institutions, and organizations at different levels with knowledge and information that leads to the development of solutions that impact the lives of millions." • "citizens must be empowered with the information and skills to hold leaders accountable, support pro-people government policies and actively participate in the governance process." • We advocate, visualize and track government spending and international aid, and let you

		know how effective it has been in our rural communities - FollowTheMoney ● GoVote is a platform and campaign to educate Nigerians on how to register to vote in the country's General Elections and to mobilize them to do so.
Research, support, and training	9	● "designing qualitative and quantitative research plans and methodologies, conducting research on fiscal governance, public financial management, development finance, natural resource governance and, more broadly, other public policy-related issues." Budgit ● "Dataphyte collates and curates data from diverse sources and transforms these data into machine-readable formats, generates interactive visualisations, and publishes data-driven insights and analysis to fill the gaps." ● Capacity development, advancing public policies, data-driven advocacy, and reforms that give a more supportive environment for citizen-led development. Kimpact Development Initiative (KDI)
Working with government, cities, CSOs, Media and other stakeholders.	8	● BudgIT has progressed in sustaining partnerships with subnational governments by providing technical support on fiscal transparency, citizen budgeting, data visualization and data analysis, which aims to improve the capacities of public institutions to deliver results for citizens. ● TransparencIT collaborates with relevant government authorities, non-governmental organisations, and the media in evaluating the role(s) of stakeholders and identifying challenges in the fight against corruption and advancing social justice to recommend and push for actions that will reduce the susceptibility of corruption in the public sector and abuses against marginalized groups.

Appendix 10 South African approaches and activities

Approach	Cases	Illustrative quotes
Develops and provides tools and platforms	23	• MobiSAM: through providing platforms (not only technology related) that citizens can use to engage in social accountability practices. The MobiSAM technology incorporates both a reporting interface for citizens (via a mobile application (feature phone or smart phone), website, and SMS), and also a Ticketing function (mainly used by the municipality to address internal communication challenges) used for: Direct citizen reporting (water, sanitation, roads, electricity, stray animals, and finance related), Collating and visualising reported problems through heat maps and graphs per ward area & Monitoring reports by all registered users (citizens, civil society, media, municipalities) to facilitate evidence based engagement • Communication enabling the municipality to send SMSs to update citizens on the progress of their reports, provide information regarding planned/unplanned outages, and push out service delivery polls to assess the situation in different wards or citizen satisfaction in addressing an issue. • Make it easy for ordinary people to raise publicly concerns they have about service delivery problems. Once we receive a report of a problem, we will channel it to the relevant government officials, as well as other partners, and follow up with them to have the problems fixed. - Lungisa • People's Assembly is a website that provides information about elected representatives for example, finding out what member of parliaments have been saying in parliament and it allows citizens to provide feedback to the representatives and institutions. • DearSouthAfrica - allow citizens to co-form policy at all levels of governance
Civic empowerment	12	• amandla.mobi continues to run campaigns with our members that bring people together at critical moments to take targeted, co-ordinated, and strategic action. • This tool draws on the raw data from the Municipal Money API website – www.treasury.data.gov.za and is a clear example of how that raw data can be utilised to enhance civic education and oversight.- Municipal Money
Working with government	8	• MobiSAM allows government to view these reports and communicate with residents. After working with their local municipality, the MobiSAM team identified the lack of communication as a central problem. • provide cutting-edge economic intelligence and insight to economic decision makers.The Durban EDGE • CBM provides strong evidence to take back to government and, where necessary, into the public domain, in order to better the delivery of services where needed and to acknowledge good service where it is provided.
Research, support, training	7	• The project adapts a pragmatic approach to research, based on experiential knowledge development, and the application of artefacts to address the problem area. It is transdisciplinary in nature, incorporating information systems, computer science, journalism, sociology, and public policy - MobiSAM
Government	6	• PMG's key activity is the attending of all Parliamentary Committee meetings, where a monitor will tape and minute

oversight and monitoring		the proceedings and obtain all documents tabled in the committee
Use of media, social media data, and other technologies	6	• Data Zetu is driven to produce data use stories—tangible examples of local communities and governments using data to inform better decision-making, particularly to improve health, economic growth, and gender outcomes. • This is done by using a variety of visual elements and tools - including interactive maps, charts, graphs, and short videos. Municipal Money