

**MAINSTREAMING DIGITAL TOOLS FOR
CITIZEN ENGAGEMENT in SEEFOR**

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2022

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List of Abbreviations

AI	Artificial Intelligence
CE	Citizen Engagement
CF	Citizen Feedback
CSV	Comma-Separated Value
CBO	Community-Based Organization
CSO	Civil Society Organization
DSN	Data Science Nigeria
DSN ²	Data Scientists Nigeria (formerly known as Data Science Nigeria)
FBO	Faith-Based Organization
FCV	Fragility, Conflict, and Violence
GEMS	Geo-Enabled initiative for Monitoring and Supervision
GIS	Geographical Information System
GPS	Global Positioning System
HTML	Hypertext Markup Language
ID	Identification
KML	Keyhole Markup Language
MDA	Ministries, Departments, and Agencies
MS	Microsoft
ODK	Open Data Kit
OSS	Open-Source Software
PITB	Punjab Information Technology Board
SLB	State-Level Benchmarking
SMS	Short Message Service
SPSS	Statistical Package for Social Science
TV	Television
WBG	World Bank Group
XLS	Microsoft Excel Spreadsheet
ZIP	File format for compressed or encrypted file

Section 1: Introduction

1.1 Background Information

1.1.1. Citizen Engagement

Citizen Engagement (CE) is the umbrella term used to denote a multitude of different interactions between citizens and a variety of stakeholders such as governments, the private sector, and development institutions, – at varying points in the project or program cycle to give citizens a stake in decision making to improve development outcomes. It is a two-way relationship that implies the existence of a tangible response to queries raised by project beneficiaries and community members resulting in superior service delivery. In addition, many donor and government agencies are increasingly embedding these engagements into the program design to facilitate constant feedback throughout the programs. This change aims to elevate CE from being a grievance redress mechanism to a more collaborative engagement that results in improved ownership of programs by communities with higher trust in institutions and stronger social contracts.

1.1.2. Revolution in Government-Citizen Interaction

The twenty-first century witnessed a revolution in government-citizen interaction, with a movement pushing for greater transparency, accountability, and participation in governance (Diamond & Plattner, 2012). This necessitates increasing and widening the roles of citizens in government processes and giving new spaces for citizen engagement and participation, which form the basis for the government's decision-making process. While for millennia, citizens have engaged their governments in executing their civic duties, exercising their rights, and demanding public goods, access to technology and ease of communication have exponentially amplified these engagements (Chun et al., 2010). Despite this progress, the quality of engagement and experiences with government bureaucracies across the globe vary widely (Perotti et al., 2018).

1.1.3. Importance of having a Feedback Mechanism

Positive engagement between a government and its citizens can greatly enhance trust and engender confidence. However, this requires that concerns are addressed promptly and solutions communicated clearly in formats that are accessible. Citizen feedback is essential as it helps inform and guide the government on what is working, what is not, and areas that require attention or improvement (Steuer & Seiter, 2021). It is often an effective means for evaluating the quality of public service delivery. The rationale behind this approach is that collective or organized feedback can be used to demand accountability from providers of public services. One of the most widely cited examples of organized citizen feedback is the 'report card' or 'scorecard,' where users are asked to rate their satisfaction with various aspects of service provision. Examples include evaluating service delivery in India, the

Philippines, Ukraine, Malaysia, and the United States. Report cards that solicit feedback can allow citizens to shape the decisions that affect their lives (Deichmann & Lall, 2007).

1.1.4. The rise in the Use of Digital Tools

The proliferation of high-quality interactive technologies has embedded digital tools in daily life. Consequently, these tools have become cheaper and easier to access with mobile phone technology now available to low-income users. For example, in Sub-Saharan Africa, mobile phone penetration is at 54%, with countries like Kenya close to 100%. Given this trajectory and continued improvement in Computer Science and Artificial Intelligence, the role of technology is bound to grow, aiding in decision-making and improving public administration (Sambira, 2013).

Governments in the digital age are leaning on Open-Source Software (OSS) solutions to build open, robust, interoperable, and secure service delivery platforms. From passport applications and registering for social assistance to paying parking tickets, digital media are increasingly replacing the physical government office. Modern identification (ID) systems among them smart biometric cards allow for more efficient and transparent administration and service delivery, reduction in fraud and leakage related to transfers and benefits payments, increased security, collection of accurate vital statistics for planning purposes, and greater capacity to respond to disasters and epidemics (*Open-Source-for-Global-Public-Goods*, 2019).

1.1.5. Use of Geo-Enabled Monitoring and Tagging in the Feedback Mechanism

As a consequence of better technology, governments can now deploy geo-enabled monitoring and evaluation systems with feedback components to significantly improve service delivery, especially in the FCV context. Geo-tagging is the practice of appending geographic coordinates using mobile devices to ascertain that data is coming from a specific geographic location. The use of such technology can reduce noise in data, resulting in more accurate, targeted, and credible decision-making. Such technology, for example, the Geo-enabling Initiative for Monitoring and Supervision (GEMS) used by World Bank teams, is critical for remote project monitoring and supervision, especially in fragile and low-capacity environments where the physical presence of monitoring experts may not be possible due to insecurity or logistical constraints.

The use of such tools is fungible and is not only limited to project M&E. With a minimal additional cost, such platforms can also be used to capture feedback from project beneficiaries and can be the bedrock for CE work across government programs. The technology is relatively easy to learn and deploy and is freely available through smartphones. This note aims to show how this has successfully been done in Nigeria through the SEEFOR program and make the case for scaling it up across other programs. In addition, the note is accompanied by a manual on how to deploy the technology. For this case, the KoBoToolbox was the preferred tool but other over-the-counter tools are also

available. Ultimately, mainstreaming digital tools for citizen engagement is about effective access to information, participation, collaboration, and empowerment to accelerate progress toward closing the accountability gap.

Section 2: Review of SEEFOR pilots and other projects deploying similar tools

2.1. Pilot Digital Citizens' Feedback Mechanism

The SEEFOR (State Employment and Expenditure for Results) program supported youth employment projects operating in four states of the Niger Delta (Edo, Delta, Bayelsa, and Rivers). The activities included the construction and maintenance of 905 rural and 402 urban roads, and 1,307 community-level projects such as classrooms, water mains, and health clinics. Additionally, the program supported 2247 community groups in crop production, fishery, livestock, poultry, processing, forestry, and market infrastructure. At the onset, the SEEFOR program digitized and geo-tagged over 4000 project locations using KoBoToolbox. States were required to create an online database and input photographs, primary project data, and GPS coordinates for capital projects. A feedback questionnaire with brief responses was then developed using the KoBoToolbox to solicit beneficiary feedback on the individual projects from those targeted as beneficiaries. A major communications campaign in each state was then conducted using social media, local radio stations, and short video clips and posters to raise awareness of the exercise. The questionnaires were then disseminated and feedback was monitored using the KoBoToolbox with the responsibility for follow-up on the feedback left to the relevant states.

In a separate pilot of the SEEFOR program conducted in Edo State, a mobile phone application developed by Data Science Nigeria (DSN) was added to the toolkit. The unique feature of Check4me, the application used, was its built-in AI algorithms that enabled it to perform on-the-spot quality checks on data before it was submitted to the central database. The application took in the geofenced data received through the KoBoToolbox and performed quality assurance in real-time. The use of these tools and their interoperability resolves many concerns about the reliability of crowdsourced data.

2.1.1. Tools Deployed: KoBoToolbox and Datacrowd or Check4me Apps

KoBoToolbox is a free open-source web-based tool that may be used to gather data in the field using the Kobocollect App on mobile devices, and also via the web. It is a simple, robust, and effective tool for data collecting and analysis, especially in challenging environments. The KoBoToolbox platform is used to quickly design and deploy forms, surveys, and questionnaires by reusing existing questions and blocks of questions, developing complex forms with skip logic and validation, easily sharing forms with colleagues, and importing templates through URL and excel forms. The software also displays a map of the geo-tagged projects and gives a default report analysis of the data

acquired. The Kobocollect App, when installed on an Android device, can collect data both online and offline, with robust data loss protection and data availability right away.

A key addition that greatly improves the functionality of the KoBoToolbox is the integration of ground-truthing applications for capital projects. Applications such as Datacrowd or Check4me both created by Data Science Nigeria (DSN) import project data from the KoBoToolbox database via the account API and deploy AI algorithms to geofence project locations, compare and confirm the presence or availability of an infrastructure project during data collection. This is important to eliminate false reports or information on various projects that have not been implemented by the service provider, the system verifies and confirms the true state of the infrastructure by utilizing the stored project data already imported from the KoBoToolbox database.

2.2. Related Works on Digital Citizens' or Beneficiaries' Feedback Mechanism

2.2.1. Previous related digital tools used for citizens' feedback by different organizations and governments.

In Punjab, a Pakistani province of about 110 million people, the government has scaled up a small pilot in one of its districts to create a wide-ranging monitoring program that leverages the ubiquity of cell phones to solicit feedback from users of public services proactively. The Punjab Information Technology Board (PITB), the government's technology agency, turns that data into easily digestible quantitative and qualitative information provided to senior officials who can then hold frontline civil servants accountable for their performance. A team in the central office categorized responses, quantified them, and uploaded them to a dashboard system through which Officers could monitor offices around the country (*Engaging Citizens to Improve Service Delivery: The Citizen Feedback Monitoring Program in Pakistan*, 2018).

In India, the State-Level Benchmarking (SLB) Connect, a service-level benchmarking initiative, aims to strengthen CE in selected urban areas to provide water and sanitation services and thereby help improve service outcomes. An innovative ICT-based citizen feedback system "SLB Connect" has been operationalized as a comprehensive approach for the conduct of ICT-based citizen feedback surveys. Using an integrated mobile-to-web system, an Android-based mobile survey application is used to get citizen feedback on various service aspects, and a GPS in the cell phones tracks the location from where data are collected, thereby enhancing the reliability of data collection. Feedback data is publicly accessible on an interactive online platform. In addition to tracking service outcomes for specific projects and programs, SLB Connect allows for analysis by area, including the city's poorest neighborhoods. Following the success of a recent pilot initiative, plans are underway to expand the effort to other cities (Bhatnagar et al., 2017).

In North Macedonia, in response to the European Refugee and Migrant Crisis, the United Nations High Commission for Refugees (UNHCR) established an Information and Advice Desk that captures feedback from a refugee using a mobile data collection application on a tablet; from August 2015 to April 2016, thousands of people crossed the border from Greece each day; this movement peaked sometime with the arrival of 11,572 people. This situation raised obvious concerns about individuals' well-being and safety, as well as significant communication and logistical challenges for the government, UNHCR, and other organizations. There were various problems in communicating with transit communities and reacting to their feedback. They included a limited amount of time to earn people's trust, several language obstacles, a fast-changing setting, as well as the necessity to combat the spread of negative rumors. Other issues raised included how to respond directly to refugees and migrants who had relocated to new locations.

In light of these difficulties, UNHCR determined that it needed to improve its engagement with refugees and migrants to make it more comprehensive and consistent. A mobile data collection capability was established to allow workers to collect comments in real time and was designed through the Information and Advice Desk to allow for the systematic recording of solicited and unsolicited feedback and complaints. The form was created to collect two forms of feedback: good or negative emotions about a product or service, and requests for information or referral. Both categories can be recorded as individuals or as part of a group. The service/product sentiment data was chosen for collection to identify trends that reveal the success or failure of operational adjustments. The aspect of information request/disclosure contained built-in accountability elements (i.e. space provided to input points of action). To improve disaggregation and analysis, basic information such as language, gender, and age were recorded. To the UNHCR data protection policy, all data collected in the surveys was supposed to be anonymized. In addition, Standard Operating Procedures (SOPs) were developed.

There have been no complaints of a sensitive and/or serious nature reported in North Macedonia throughout the existing feedback mechanism (as of 16 February 2017). While this is intrinsically helpful, it also highlights the need for a more thorough examination of the mechanism's potential to create a sense of security for persons seeking help with increasing difficulties. When UNHCR and UNICEF received reports of system discontent, they reviewed the Standard Operation Procedures to improve the follow-up of comments received (UNHCR, 2017).

2.2.3. The Case for KoBoToolbox

Cost: The KoBoToolbox software and app are freely available with no licenses required for their use making them easily deployable at a minimal cost. In addition, the code is open-source and can be customized as needed and adapted to project-specific needs.

Questionnaires: This tool allows for the building of complex questions with follow-ups, and skip logic, and offers quality control using built-in checks and validation criteria. The software offers a form builder that allows users to reuse existing questionnaires and blocks of questions from different questionnaires; create forms with the possibility of filling and validating the fields in any order, and import/export XLS forms.

Data: The tool can automatically generate a real-time report and graphical visualization of data received. Users can create summary reports with graphs and tables; view the data collected on a map; group the data collected in a report or on a map; and export data to Excel.

Operation: the tools can collect and store data when offline and then automatically upload the data feed into a database when a mobile cellular network is available. This is suitable for use in remote off-grid areas. Data is also collected in real-time, and immediately available for use. The downside to this capability is that the tool does not support offline editing of records once submitted. Any subsequent changes after submission of a questionnaire require admin permission and should be done online from the backend.

KoBo Community: KoBoToolbox has a vibrant community forum with experienced users across the globe that can respond immediately to any issues raised or questions on the use of the application.

3.1. Stakeholder Engagement

Stakeholder engagement involves interactions with persons, groups, communities, or organizations who may be affected by a program, project, or service. Stakeholder engagement is crucial to the successful delivery of any program, project, or service. Stakeholders should be adequately informed as their buy-in is important for proper ownership of any program. In programs where their feedback and constant engagement are needed, it is necessary to assure them of action and change as a result of their feedback. There should be an obvious link between feedback received and changes to project implementation or service delivery. Any perception of inaction is likely to result in disengagement and apathy. During the pilot phase, we ensured that stakeholders were properly informed and actively participated in the engagement processes, ensuring that their voices were heard and mainstreamed. This was accomplished by directly communicating with them through their existing community-led management committees and association leaders. While all necessary stakeholders must be involved, program leads must be intentional about engaging those who are most vulnerable and at risk of not being heard.

3.2. Inclusive Stakeholder Mapping

stakeholder mapping is critical to identify, empowering, and giving voice to marginalized stakeholders and ensuring their fair representation in decision-making. Inclusive stakeholder mapping specifically targets and considers the opinions of individuals and groups

at risk of being excluded or under-served (Reed & Curzon, 2015). It is worth noting that social exclusion – depriving individuals or groups of adequate participation in society, encompasses not just material deprivation, but also agency and control over decision-making.

At the onset, it is critical that one identifies a framework to determine who is excluded and in what ways they are excluded. This information then acts as a benchmark for tracking progress, assessing the impact of inclusion-promoting measures, and ultimately ensuring that all voices are accommodated. While this is the ideal sequence, quantifying social exclusion presents significant challenges key among them the dearth of information and reticence among the marginalized group who tend to be wary of such engagements. Ultimately, the solution may require a compromise between theoretical considerations and what is empirically possible.

In preparation for the pilot, we first conducted a desk assessment of the project beneficiaries' information and communication needs. This was done in collaboration with social media specialists and World Bank communication experts, the aim was to identify preferred means of communication and factors that deter many beneficiaries from participating in the digital engagement processes. Different pathways were mapped among them the use of SMS Code or KoBoToolbox, as well as how to overcome participation barriers, especially for the vulnerable and women groups, and buy-in by the citizens were clearly outlined. Finally, to ensure inclusive participation by stakeholders, including marginalized groups in the communities, all SEEFOR State Project Coordinating Units (SPCUs) procured Android Smartphones with data bundles, and a team of indigenous enumerators (who understand the culture and language of people) was co-opted and trained on how to use the Kobocollect App to go around the communities and solicit feedback from interested persons, with special attention to vulnerable or marginalized groups who can't have access.

Stakeholder Meeting

Community-level fora and gatherings are a great entry point when seeking sustainable community involvement and feedback. For the SEEFOR pilots, we engaged citizen-led management committees, community leaders, faith-based organizations (FBOs), civil society organizations (CSOs), community-based organizations (CBOs), and non-governmental organizations (NGOs) who in return invited citizens to the stakeholder meeting. This first point of engagement is critical as it lays a foundation for building trust and ownership of the program. In addition, and to facilitate quick dissemination of information, the project's website, radio/TV, and social media channels were deployed. As a last resort, town criers were used in some localities to overcome barriers to the engagement of underserved or vulnerable stakeholders.

During the stakeholder meeting, the project leaders should clearly define the scope of the project and its benefits to the community. In addition, they must also emphasize the importance of having input and feedback from the participants for the successful implementation of the relevant project., This forum can also be used to clarify any initial concerns the participants may have and also elaborate on technical concerns that could arise during the filling of the questionnaire.

Data Collection and Analysis

A digital questionnaire built using KoBoToolbox is utilized to collect data. Following the design phase where a set of questions are formulated in line with project needs, the resulting questionnaire is deployed to the KoBoToolbox server, and a web link is made for citizens to share via social network handles, SMS, fliers, and posters., This questionnaire is then downloaded by participants on mobile phones using the KoBoCollect App. Here, participants can fill and submit the questionnaire from the privacy of their own homes, and in the cases where they may not have access to requisite technology, enumerators can be engaged to solicit feedback. While this may be a challenge due to concerns about the privacy of citizens, security of enumerators, and lack of resources to deploy sufficient manpower, enumerators can reach low-income and vulnerable members of society. Where enumerators are locally sourced, their presence could reassure participants. the mobile phones and computers capture data in real-time and are automatically submitted into the M&E central database for analysis. Each data submission includes tabulated feedback from the participant, the geotagged project location, and the media used to verify the information submitted. this information is aggregated and used to generate a default report and summary statistics. For further analysis, data can be exported from the database in XLS files or other forms that may be compatible with r statistical software.

Privacy and Confidentiality of Data

The KoBoToolbox webforms and app have built-in security and confidentiality guarantees that serve to reassure participants of adequate privacy. From identification and contacting of participants to the platform and methodology used to obtain information from participants, and the nature of the requested information, the toolkit offers virtual engagement which distances the participants from enumerators and authorities hence offering a sense of privacy in the engagement processes. During the SEEFOR pilots, the identity and personal markers such as phone numbers of respondents were not required in the questionnaire to reassure respondents of their privacy and anonymity. If necessary, the questionnaire can be designed with fields that capture personal identifiers if they are deemed critical to the project. However, the spillover effects of such disclosures should be considered before the data is collected.

In addition, the Enketo Web Form is specifically designed to run on a web browser with embedded security features that automatically erase and leave no traces of information

provided by the participant. The system data handling and storage is cloud-based with administrator password protection (IRB, 2009), providing adequate protection of participants' identities and information. While this provides reassurance that no unauthorized personnel may access the database, password sharing is a common problem and enumerators must be vigilant. In addition, adequate communication must be provided to the participants to engender trust. Actual or perceived breach of privacy among participants is likely to have long-lasting consequences and detrimental impact on further citizen engagement.

3.3. Structuring of Questionnaire using KoBoToolbox (Annex 1)

A detailed step-by-step guide on how to deploy the KoBoToolbox is attached in the annex. The guide delves into the process of accessing the KoBoToolbox website, creating and configuring a KoBoToolbox account, creating data collection forms, questionnaires, and surveys, deploying finalized forms for data collection in the field, creating web links and medium of distribution, accessing and filling forms from the web link and finally, viewing and exporting of data out of KoBoToolbox for further analysis.

3.4. Deployment of Communication Campaign using Relevant Media

Sensitizing stakeholders through relevant media platforms on how to access and respond to the questionnaire is key to achieving the desired level of engagement. This step should be prominently baked into the engagement process and adequately resourced before the deployment of the questionnaire. It is important to get a robust response from participants to avoid skewed decision making which could exacerbate the challenges being addressed. Where possible, short audio and video media can be disseminated on mobile phones and aired on radio and television augmented with leaflets and posters for those who may not have access to the aforementioned media. The proliferation of social media can be a boon in the deployment of mass communication as it has great reach and is cost-efficient. In addition to a robust initial engagement, it is important to keep stakeholders updated regularly, and tools such as WhatsApp, Facebook, Twitter, SMS, Poster, Flyers, etc. can come in handy.

3.5. Integrating Ground Truthing Application (Data Crowd) to Geo-Fence Project Location (Annex 1)

Where the CE entails feedback on capital project and infrastructure service delivery, it may be necessary to augment the KoBoToolbox with "ground-truthing" technology. Previously, it has been necessary to physically visit project sites to determine the physical condition of a project and the veracity of the information provided. However, this has been upended by the introduction of reliable geofencing technology that locks in the location of a project and can only accept feedback provided in specific geographic locations. For the SEEFOR pilots, the bank team deployed apps designed by Data Science Nigeria, a Lagos-based NGO that creates data collection tools with AI capabilities for on-the-spot quality checks to ensure that high-quality data is collected and transmitted.

3.6. Setting up Monitoring Platform and Dashboard (Annex 1)

After data has been accepted into the central database, KoBoToolbox links the dataset with Microsoft's data visualization software - Power BI, to produce interactive data analytics and visualization displayed on a dashboard for ease of use. In addition, reports can be autogenerated. While the KoBoToolbox is freely available, the Microsoft software necessary for the dashboard requires the purchasing of a license.

Section 4: Conclusion

Governments and service delivery platforms should embrace digital tools for better and more effective communication with the citizens they serve, the proliferation of reliable data collection toolkits such as ODK and KoBoToolbox makes it easier for governments to engage with their citizens. The toolkits are freely available and run on open-source software which allows for customization of the platform as may be needed. Many off-shelf digital tools may serve similar purposes but the KoBoToolbox is reliable and easy to use.

Among the numerous challenges facing the deployment of these toolkits is the lack of mobile phones and internet access, especially among marginalized groups. This effectively isolates them and if not well addressed can result in negative social impact and even further marginalization. For the SEEFOR pilots, the State Project Coordinating Units (SPCUs) addressed this problem by providing smartphone and data bundles to a team of indigenous enumerators who went into the communities to collect feedback.

Ample time should be dedicated to building trust in the community before the rollout of the programs. This can be accomplished through regular engagement and sensitization of citizens to reassure them of their privacy and anonymity.

On the technical side, multiple form submissions by citizens provided a challenge during data analysis, necessitating data cleansing before analysis resulting in a significant loss of time. However, the program developers have recently rectified this issue. When you successfully deploy your form or questionnaire to the KoBoToolbox server, there are seven different options presented as a drop-down menu to choose from by clicking on the "collect data" button on the "Form" page. These parameters provide constraints on how to collect or send data to the server.

Another issue that arose during the pilot was how to respond to citizen feedback on an individual basis. Because phone numbers were not required in the questionnaire, there was no way to respond to questions raised by individuals. This can be addressed by including an option that explicitly explains the data protection system's anonymity and requires the respondent's "consent" before collecting data on their phone number.

Section 5: Annexes

- 5.1. Annex 1 (Structuring Digital CF Questionnaire using KoBoToolbox, Integrating Ground Truthing Application (Data Crowd) to Geo-Fence Project Location, and Setting up Monitoring Platform and Dashboard)**

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