

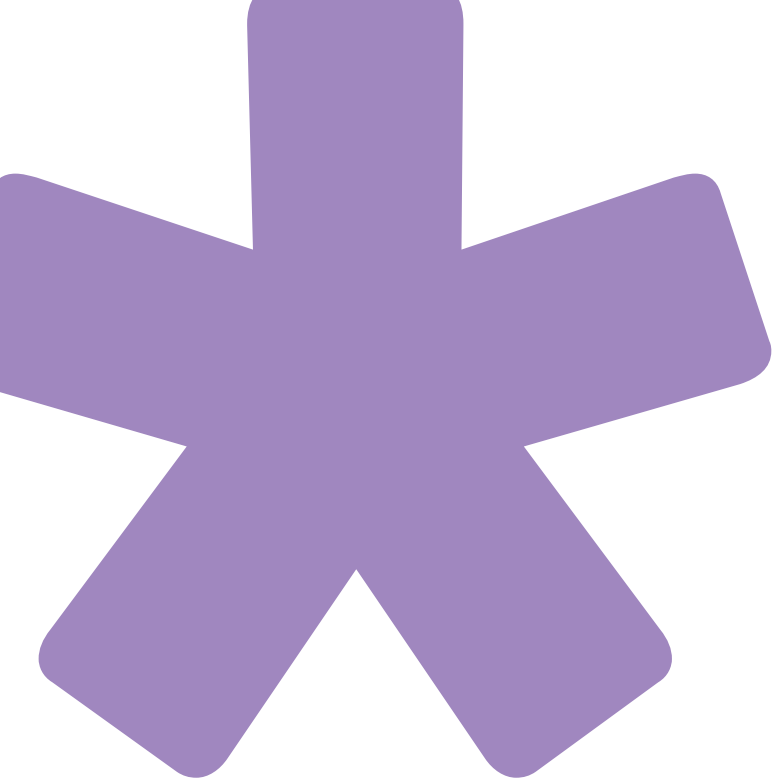
The 3 Vs Crowdsourcing Framework for Elections

Viability, Verification, Validity

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***iHub**Research
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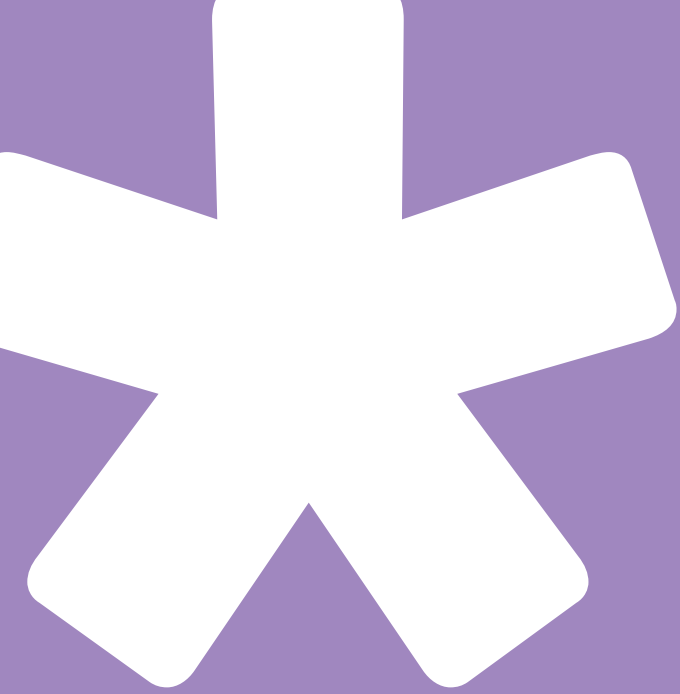
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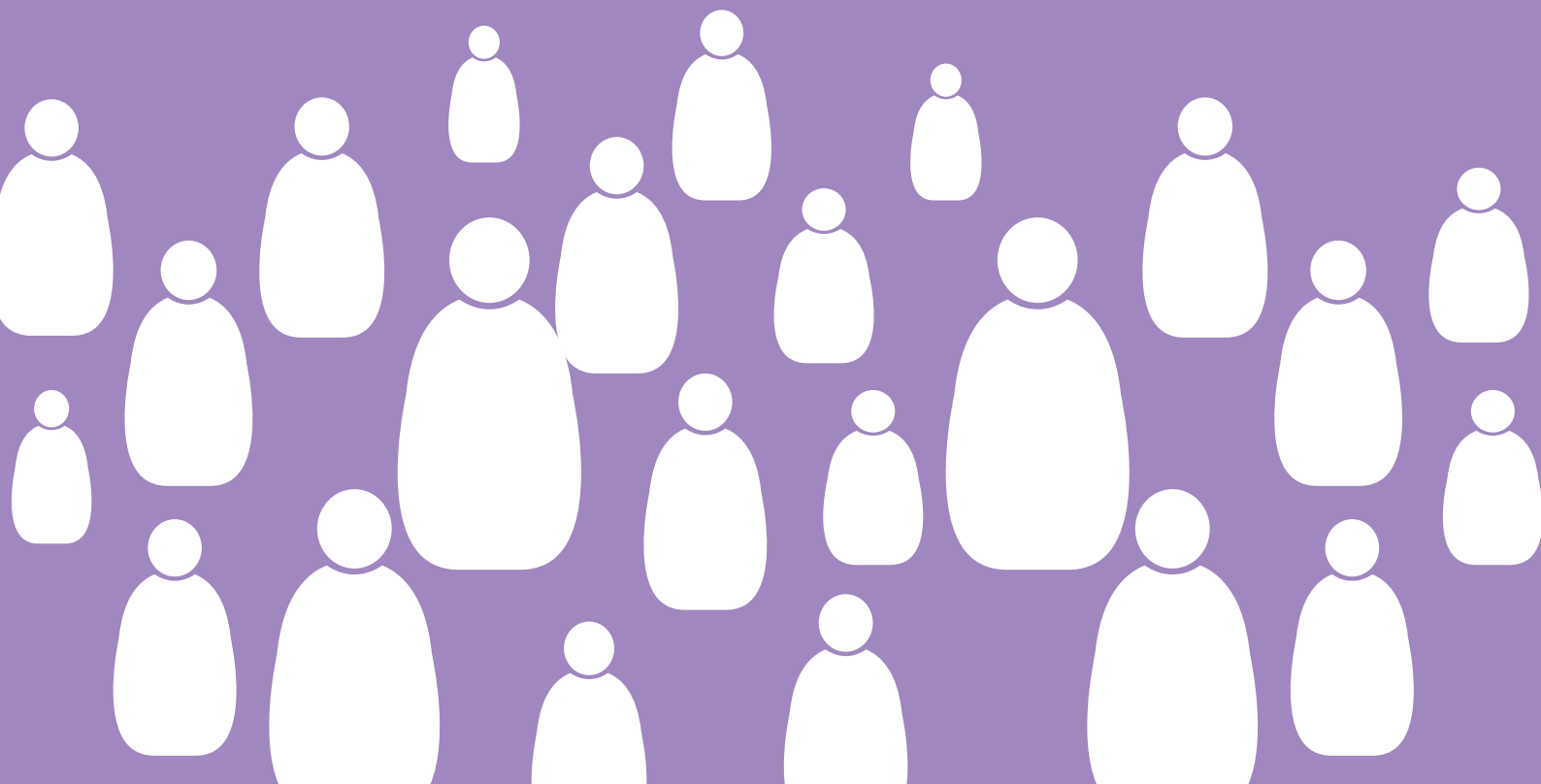
This guide to crowdsourcing walks you through considerations to help determine if crowdsourcing using online/mobile technology is a viable tool for you to use during an election context. The key considerations include:

- 1) the kind of data you are interested in collecting;*
- 2) the freedom and risk factors in the country in which you wish to conduct the crowdsourcing; and*
- 3) demographics and the people's access to, and cultural approach to, technology.*

These will each be outlined in turn to help you make your decision. This guide also offers advice on crowdsourcing tools that can help based on your verification and validity needs.



KEY CONSIDERATIONS





DATA DESIRED

This is a critical consideration that influences the type of crowdsourcing you conduct, and methodology employed. Some of the factors that come into play include the person or institution seeking to crowdsource, the type of data required from the crowdsourcing activity, e.g. whether actionable upon collection or retrieval, and so on. This section guides you through considerations based on the type of data desired.

- Who are you? What type of institution wants to conduct the crowdsourcing?
- Where are you located? Are you in the same location as where you want to crowdsource?
- Why do you need the data? What do you expect to do with the data? (e.g. for mere visualization, for leads for a news story, for immediate action)
- Do you need verified data? Will you require the data to be verified?
- Do you need near real-time data?
- Are you looking for a representative sample of the voting population?

'FREEDOM AND RISK FACTORS' TO CONSIDER

INTERNET FREEDOM (Access, Openness, Freedom of Expression Online)

The state of Internet freedom could influence online freedoms and rights of expression. According to the Universal Declaration of Human Rights,² freedom of expression is the right of every individual to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers. Freedom of expression, however, is not absolute, since open debate and personal autonomy can cause conflict between the values and rights respected by the system. Therefore, rights of expression can be limited.³ How such limits are applied or enforced varies by country, and is important to consider, as it affects whether or not people will be willing to share true information online or whether they are more likely to engage in self-censorship.

- Is access to the Internet considered a right? a privilege? a market good, i.e. if you can't afford it, you remain offline?
- Is Internet openness filtered, monitored, obstructed or manipulated? What restrictions may exist in response to the potential legal, economic, and security challenges raised by new media?
- This would influence whether people can access the Internet, what sites they can access, what people post online and where they post it (e.g. ubiquitous social networks), whether they can exercise freedom of expression, whether information is (can only be) posted anonymously.
- Is the freedom of online expression acknowledged as a right? Is it a protected right?
- Is there a government history of cracking down on dissent online? What is the applied definition of dissent?

FREEDOM OF THE PRESS (Media Independence)

How the press reports news or disseminates information could influence how citizen reporters or contributors to crowdsourcing projects share information with you. Contributors may follow the press precedent or they may take to online media with the intent of sharing information that hasn't been covered by the media. The openness of reporting by media houses is important to consider, as it affects the type of content being shared through traditional channels and possible validity of the content.

- Are journalists able to do their work without being subject to intimidation or actual violence? Are they able to report freely without censorship?
- What is the legal environment (laws and regulations) that governs the operation of the media?
- What is the extent of political influence (editorial pressure by government or other actors) on media reporting?
- What are the economic pressures (structure, transparency and concentration of media ownership) on content and news dissemination?⁴

For instance, in the recent Turkey (Gezi Park) protests (31st May 2013 onwards), many citizens believed the mainstream media failed to adequately cover the events. Citizens then took to social media where protesters live-tweeted and live-streamed the protests. Protesters even urged Turks to turn off their televisions in objection over the inadequate media coverage. The protests eventually morphed into an expression of discontent of government policies, as they continued to spread. Within the first 18 hours of the protest, 90% of all tweets coming from within Turkey usage were geo-located tweets, and at least 2 million tweets mentioned hashtags related to the protests. 88% of the tweets were in Turkish, suggesting that they were mostly for a Turkish audience.⁵ In this case, Twitter was adopted to spread information about what was happening with the demonstrations on the ground as well as to recruit more protesters.⁶ Local shops around the protest areas removed security from their WiFi networks to allow Internet access when the 3G network was down in much of the affected areas,⁷ enabling the continued dissemination of information online.

INSTITUTIONAL ROBUSTNESS

(Adaptability of governance systems to meet/support growth trends in Internet and mobile device usage?)

It is important to assess the institutional frameworks that support access to the Internet, mobile technology and how they are disseminated and used. Aspects such as the state of Internet governance in a country, the adoption of e-governance and how major institutions in the public, private and NGO sector leverage Internet and mobile technology are considered.

- What is your country's state of Internet Governance?⁸
 - This includes the technical governance of the Internet - its protocols and standards, coordination, domain name management etc. - as well as the interface between the Internet and other public policy domains, which are affected by its use.
 - It also includes the infrastructure and management of critical Internet resources, as well as developmental aspects such as capacity building.
- Has the government adopted e-governance?⁹ Has government been involved in any top-down initiatives democratizing the access and flow of information, or engaged in crowdsourcing activities that have highlighted the potential advantages and opportunities that exist in tapping into the wisdom of the crowd?
 - This can be assessed using the United Nations' E-Government Survey¹⁰ that reviews features on the national and ministerial websites of its member states. These features include: information dissemination/outreach, access/usability, service delivery capability and citizen participation/interconnectedness.¹¹
 - As participants in the online space for governance purposes, government institutions and authorities could be more trusting of the space and also crowdsourcing activities. This could facilitate the dedication of resources to expanding/enhancing access to Internet and mobile technology through policy.
- Do other major institutions (private sector, civil society, NGOs) actively engage in the online space?
 - This is useful for assessing familiarity with the concept in order to determine if prospective parties are ready to be involved in crowdsourcing activities.

STEPS TOWARDS E-GOVERNANCE IN KENYA:



Morning guys- I'd really like to have your input on the 2011-2012 budget. What are your priorities? Suggestions? Ideas?

bit.ly/la3qfp

6 May via Twitter for Mac

In 2011, Kenyans were invited, for the first time, to contribute to the formulation of the country's National Budget via social media. Then Finance Minister, (current President) Uhuru Kenyatta leveraged his social media presence, most notably Twitter and Facebook, to send out a request to Kenyans to participate in the process, citing Article 10 of the Constitution of Kenya that recognizes participation of the people as part of the national values and principles of governance.¹² A Google Document with sets of questions was also used to collect insights. Questions posed included which sectors should receive funding and how the government could increase its tax intake. The Budget Outlook Paper was shared online via Scribd.¹³ On Twitter, hashtags such as #Budget2011 and #KEBudget2011¹⁴ were used by citizens to discuss the budget contents. Within the first three hours, more than 300 people had submitted responses to the Treasury.¹⁵ Although its unclear to what extent public suggestions and opinions were taken into account in the final outcome, these actions by the Kenyan government demonstrated its recognition of the power of social media to enhance public participation in governance, and in strengthening the democratic process.

POLITICAL RISK /STATE FRAGILITY:

(Political Risk Dynamic Index¹⁶ - Political Stability, Political Violence, Ethnic Tensions, Terrorism Risk)

An authoritarian or embattled regime may tend to oppose and interfere with crowdsourcing, perceiving broad-based participation and citizen empowerment as threats to its very existence,¹⁷ especially if such a regime has never previously engaged with social media itself, as stated above (institutional robustness).

- What's the state of political stability in your country? Is the country considered a fragile state? ¹⁸
- Is your target audience in conflict environments?
- Are there tensions that are likely to arise or be heightened during an election period? If so, what are they?
- What political bias factors are likely to arise that would affect the quality of crowdsourced information you receive? These political bias factors might include the deliberate propagation of lies, manipulations or rumours that skew the quality of information disseminated to and received by your crowdsourcing platform?
- Is there likely to be government surveillance set up to intercept communication that has the potential to expose crowdsourcers or other participants to the risk of arrest and torture? ¹⁹

TECHNOLOGY-BASED FACTORS TO CONSIDER

This section explores factors that influence the access to technology by consumers who would be tapped for a crowdsourcing activity. In particular, we look at the state of broadband and mobile phone penetration and how it may be measured in a country, digital divide as facilitated by which areas in a country have (easy) access to the internet and to mobile devices demographic factors that assess behavioural and cultural dynamics on adoption and use of such technology, who uses social media (age groups), as well as literacy levels.

CONNECTIVITY (BROADBAND/MOBILE PENETRATION)

- What's the rate of Internet/broadband and/or mobile device penetration in your country?

DYNAMICS OF SOCIAL MEDIA, SMS AND PHONE ADOPTION

- Which social media platforms are popular? Is it feasible to collect information on the platform(s)?
 - Twitter, for instance, facilitates ease of data analysis as tweets generated are public information, while Facebook is far more difficult to gain access to in the aggregate.
- Are SMS/phone calls a widely used means of communication?
 - If so, are they a trusted means of sharing information? These could be useful means of collecting information, especially if they are used in such a way that keeps the cost of sending an SMS or call in a report to a minimum for prospective participants.

DEMOGRAPHICS

*Digital Divide:*²⁰


- Do the mobile phone and/or Internet users constitute a representative sample of the voting population or the desired population? (Does your target population use mobile phones/have Internet access?)
- Is mobile phone/Internet penetration widely available in the country? What is the urban versus rural availability of mobile networks, Internet, and broadband connectivity?
 - This is important because a digital divide could exclude communities of interest from participating in an online-based crowdsourcing activity.
- What demographic biases are likely to exist, and what additional measures might you need to take to mitigate them?
 - Such biases could include for example, gender dynamics in technology access and use, socioeconomic dynamics of online access, particularly important to look out for where market forces create barriers to access for broadband and internet for lower income earners.

Behavioural/Cultural, Language and Literacy Dynamics:

- What are the behavioural and cultural trends of social media, SMS or phone usage in your context? For example, rural Kenyans may be more likely to send an SMS rather than to use social media because of the affordability and simplicity of access.
- What languages are used in the to communicate or disseminate information?
 - If more than one language is used, including slang languages, it can be crucial to factor in how to collect and aggregate data based on the various languages, or how to filter data into different language 'buckets' for further analysis/interpretation. Having staff fluent in the local linguistic usages is essential.
- What are the adult literacy rates²¹ in the country/among interest groups? This rate will influence whether a text-based crowdsourcing method (via SMS, social media or other platforms requiring input in text format) is feasible.



CROWDSOURCING OPTIONS



This section describes options for crowdsourcing based on your needs and country context. In summary, open crowdsourcing actively calls for participation by any and all citizens; closed crowdsourcing actively calls for participation from smaller group(s) of citizens; data mining culls through already existing content in order to select the relevant information; and offline crowdsourcing can be used in situations where online and mobile based crowdsourcing may not be considered viable.





'OPEN' CROWDSOURCING

Active, targeted crowdsourcing on dedicated, or non-dedicated platforms.

- An open call made for participation.
- Anyone who hears of the call to crowdsource can participate.
- Platform used for crowdsourcing should be easy-to-use and require minimal training for users to participate. Basic prerequisite conditions can be shared beforehand, which may include things like geo-tagging of information submissions collected online via social networks, or the inclusion of basic information like social network URLs that can facilitate any follow-up you might do like credibility assessments.
- Assess if there are existing incentives for the crowd to participate, or how to create incentives if there are not. These could be established from the factors above, such as exercising freedoms of online expression, sharing information online to counter what mainstream media reports or overlooks.
- Open-source platforms such as Ushahidi, developed to facilitate crowdsourcing and mapping of events, are free to use; therefore, open crowdsourcing could be an affordable option. However, time and financial costs of using such platforms could increase if you find down the line you need to develop a new platform to better accommodate the crowdsourcing deployment's needs.
- While this method is likely to get large amounts of information, it is not guaranteed that the 'crowd' participating will constitute a representative sample of your target population.
- Large volumes of data could prove difficult to verify in near real-time. Because this method requires minimal communication with your participants in advance, it could also prove difficult to identify events as defined for your crowdsourcing purpose, as participants are not aware of the particular kinds of information you are after for your crowdsourcing.

'CLOSED' CROWDSOURCING

Option 1: 'Closed' crowdsourcing using pre-selected participants

Active, targeted crowdsourcing on dedicated platforms.

- This method uses a sampling frame, selecting physical sites through systematic random sampling and identifying specific reporters or 'crowdsourcers' on each site.²² These 'crowdsourcers' are then trained in how to use the system and what to report. Unlike the 'open' crowdsourcing model where anyone with access to a device or connection can contribute to the crowdsourcing, this method only allows the pre-selected reporters to do so.
- Useful for collecting high-quality, sensitive data in limited statehood or conflict areas, particularly well-designed for gathering information that is rapidly actionable.
- By using a representative sample, this method could provide a more holistic representative picture of the population than open crowdsourcing.
- This type of crowdsourcing builds relationships with the participants, which increases incentives to report truthfully.
- Information can easily be disseminated to the participants, as the 'crowd' isn't anonymous.
- While this approach is particularly successful in collecting large amounts of high-quality information in real-time from populations that otherwise would have been very isolated, such an approach also leads to concerns for participant protection, and may place data researchers in an uncomfortable position of acting as data censors.²³
- Also important to keep in mind is the sensitivity of such information. This has the potential to limit its further use or sharing with others (e.g. authorities in a position to act on the information), especially if that would put participants at risk, since they are identifiable as opposed to an open crowdsourcing deployment where information is received from an anonymous, unidentified public. Ethical considerations to 'do no harm' could result in a certain denial of agency²⁴ to populations with whom such an exercise would be conducted. However, information collected could be shared with organizations and institutions identified and approved by participants.
- This type of closed crowdsourcing could also prove difficult to scale, especially in situations where scaling could draw the attention of groups that would target the participants.
- However, it might very well be possible that the scale-insecurity relationship is bell-shaped. That is, an initial expansion would bring more risk, but if the project is implemented throughout the region, known among many and supported by many, that the risks would be low again.²⁵
- It could also inadvertently create expectations among participants that crowdsourcing could lead to intervention, assistance or relief as a result of the events reported. If this is not the primary purpose of the crowdsourcing effort this could cause problems for relations with participants.
- Cost implications of this type of crowdsourcing will depend on (among other factors):
 - the desired size of the participating crowd,
 - the availability/accessibility of devices and connectivity to your information collection system (e.g. mobile network availability),
 - cost of sending information (e.g. cost of SMS).

FOR MORE INFORMATION, SEE
*the Voix des
Kivus project.*²⁶

Option 2: 'Closed' Crowdsourcing using referral-based participants

Active, targeted crowdsourcing, on dedicated or non-dedicated platforms.

- An alternative approach to traditional 'closed' crowdsourcing is to start with a few individuals you consider trustworthy. In turn, these individuals identify and introduce others whom they consider trustworthy. With relevant information based on their location and contacts, this continued until a desired number of participants are identified, your desired project sale is achieved, or the time for identifying participants has expired. The 'crowd' in this model could grow exponentially, just like in open crowdsourcing, but bound by an invite-only criteria.²⁷
- Although unlikely to produce representative samples, this approach is likely to produce more trustworthy or reliable information.
- This approach also requires that invited participants be connected (e.g. have access to the necessary online or mobile technology), be able to use or learn the necessary submission system quickly, and be able to share that information adequately with others participants they identify.
- In this method, verification can be conducted through a model in which it is assumed that the probability of each referred participant submitting a false report has a given probability. Each report could be verified by the person who referred the reporting participant. Reports returned to the organizers may or may not have been confirmed to be accurate. Should a false report make its way to the root, the recruiter who failed to verify the report is penalized. This model essentially uses a compensation scheme that minimizes the cost of retrieving the correct answer.²⁸

DATA MINING

Passive, non-targeted crowdsourcing on non-dedicated platforms.

- This method casts a 'wide net' to capture all information that is available. Verified data is not a prerequisite condition for.
- This can be done using a third party application or developed software to mine data, employing filters that return information relevant to your crowdsourcing activity.
- This method is likely to capture information that may not exist elsewhere; the minimum 'restrictions' applied to aggregating the data are likely to facilitate that.
- A useful technique if information captured is to be used for post analysis.
- Large volumes of data collected this way could limit ability to verify in near real-time, unless captured and run through previously built 'verification filters.'
- Likely to capture a lot of 'noise' or irrelevant data. In this case, a previously created spam classifier can be useful to fast track the noise filtering process, especially if information output is required in near real time.

'OFFLINE' CROWDSOURCING (ONLINE OR MOBILE-BASED CROWDSOURCING NOT VIABLE)

Online and mobile-based crowdsourcing require that prospective participants have some access to the Internet and/or mobile phones. When this is not the case, it is likely that online crowdsourcing will not be viable. Crowdsourcing may also be unwise where there is a high risk (e.g. risk of imprisonment or of violence) to participants and crowdsourcers. If this is the case, crowdsourcing may still be possible using 'offline' methods like organizing events where information can be collected through direct interaction.



CASE STUDY:

**Assessing the Viability of
Crowdsourcing During Elections
in Kenya March 2013**





Data Sources Assessed During the Kenyan General Election 2013

Data mining from social networks

We used a third-party Twitter application, DataSift, to capture and store tweets using Kenyan election-related keywords, user names, place names and hashtags from March 3 (the day before the elections) until April 9 (the date of the Presidential Inauguration). This information was mined for newsworthy information over the course of 3 weeks once the full dataset was collected. Newsworthy information was defined for the project as that which provides situational awareness of poll-related incidents, and is actionable. We were interested in aggregate data, employing the above-mentioned filters to capture tweets generated largely within the country (where geo-tagging or home location was specified), and specific to the Kenyan election context. Even if the tweets were not geo-tagged, they were still used.

Data from crowdsourcing platforms that made an open call to the public to share

Data was obtained from the Uchaguzi platform that saw collaboration between citizens, election observers, humanitarian response agencies, civil society, community-based organisations, law enforcement agencies and digital humanitarians to monitor elections. On-the ground election monitors from partner organization, CRECO, verified events reported through Uchaguzi. A digital and local team of volunteers reviewed the reports and sorted them.²⁹

Data from traditional media

We obtained newsworthy reports (as defined above) posted on 15 traditional media websites through manual and automated searches of traditional media (local and international).

Data from fieldwork

Through in-depth interviews with media houses prior to the elections, we established that local traditional media outlets do not collect or aggregate 'raw' data towards reporting. From these interviews, we learned that all published event reports are verified through networks of correspondents and authorities. We identified three locations from which events were picked up on and reported by the above sources, and conducted in-depth interviews with 85 citizen respondents to gain insights into the activities that occurred on-the-ground before, during and after the election period. Through these investigations, we also sought to find out if respondents used social media or other mediums (SMSs, phone calls) to share, alert or report events that they may have witnessed.

A. Data Desired

	Data Mined Directly from Social Network Site (e.g. Twitter)	Data from Crowdsourcing Platforms (e.g. Uchaguzi)	Traditional Media Data (e.g. Nation Media)	Fieldwork Data (e.g. in-depth interviews)
Expected Use of Data	Insights on a very broad wide 'crowd'; insights on events that might not be reported elsewhere	Specific, actionable information	Interesting, newsworthy information	On-the-ground 'truth' from eye-witnesses
Description of Data Characteristics	Wide net; trying to capture all information that is available	Geo-tagged; reported by an individual who could be followed up with	Newsworthy	In-depth qualitative information
Method of Data Collection	A third-party Twitter application to capture and store tweets using election-related keywords, user names, place names, and hashtags.	Largely through SMS, although a web form, social media handle, and email option were available	On-the-ground connections and/or correspondents, phone calls, and social media used for leads.	Face-to-face interviews with citizens on-site
Accuracy & Velocity	Initially low accuracy, but with spam filter added, can become very accurate. High levels of 'noise' and velocity.	More likely to have accurate information reported compared to data mining. Can have high velocity based on citizen awareness.	Often verified and accurate. Relatively lower velocity of data than open call and data mining.	Possibility of omission of information, but often easier to obtain evidence (e.g. photos, primary documents). Low velocity.
Real-time?	Not yet easy to analyze in real time. Collected in real time but analyzed post-election.	Near real-time at best; collected in real-time but delay in analysis as the data goes through the work flows such as Verification team; translation team; Geo-tagging team; etc. ³⁰	Normally delay of a few hours to a few days.	Can be near real-time if staff are on the ground already in location. However, staff may not be in the location where the incident is occurring.
Verification	Data is not verified pre-collection. If verification is needed, it will need to be done post-collection.	Verification normally occurs as part of the workflow process through on-the ground verifiers.	Data is often verified via phone calls using human social network, but the media's verification process is not always transparent and may be hard to assess.	Often verified through triangulation from interviews with different individuals or through primary documents.

B. Freedom and Risk Factors*

Factor	Internet Freedom (Freedom on the Net) ³¹	Freedom of the Press	Institutional Robustness	Security/ Stability/ Conflict Factors ³²
Consideration	<p>Freedom House ranked Kenya as 'Free' in the 2012 Freedom on the Net survey, with a total score of 29, an improvement from 2011's score of 32.</p>	<p>Freedom House ranked Kenya as 'Partly Free' in the 2013 Freedom of the Press survey, with a total score of 53, a decline from its 2012 score of 52.</p>	<p>Freedom House ranked Kenya 'Partly Free' in the 2013 Freedom in the World survey,³³ with a score of 4 in both political rights and civil liberties.</p> <p>Internet Governance Infrastructure and Access:³⁴ International connectivity in Kenya has been transformed by the arrival of submarine cables along the East African coast at the end of the last decade, dramatically changing the availability of international bandwidth in Kenya.</p> <p>Communications Market and Licensing Framework:³⁵ The Communication Commission of Kenya began the transition to a technology-neutral licensing regime in 2004.³⁶</p> <p>Government Policy Towards The Internet:³⁷ The Government's overall strategy for national development is set out in its Vision 2030 document, which was agreed in 2007.</p> <p>E-Governance: With an E-Governance Development Index³⁸ score of 0.4212, Kenya ranked 7th in Africa and 119th in the world.</p>	<p>Political Risk (Dynamic) Index- Political Stability, Political Violence, Ethnic Tensions, Terrorism Risk: Kenya ranks 'high' on the country risk assessment.</p> <p>Early 2008 was marked by post-election violence across Kenya. Over 1,200 people were killed and 300,000 displaced. This unrest, coupled with the effects of the financial crisis, reduced gross domestic product (GDP) growth to 1.7% in 2008. The economy recovered in 2010, but in 2011, Kenya's economy experienced further shocks, including drought, higher food and fuel prices and electricity shortages.³⁹</p> <p>'Stage of fragility': Kenya was one of the 47 fragile states and economies used for quantitative analysis in the Organisation for Economic Co-operation and Development (OECD)'s Fragile States 2013⁴⁰ report. The 47 countries are derived from the World Bank-African Development Bank-Asian Development Bank harmonised list of fragile and post-conflict countries for 2012 and the 2011 Failed State Index (FSI).⁴¹</p> <p>Kenya is one of the 26 Low-Income Fragile States (LIFS) in the analysis.</p>

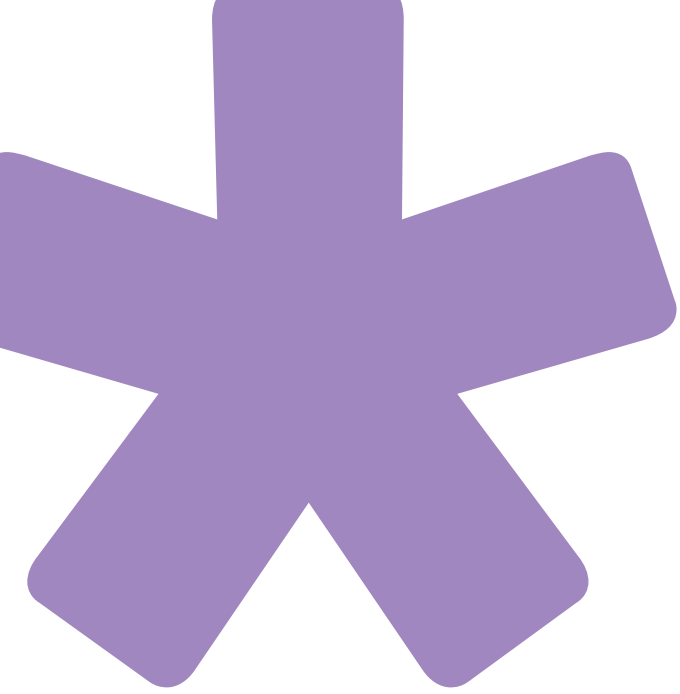
*It is advisable to assess these factors as measured by various surveys. Those used here are just one example. Most recent Freedom House surveys cited.

C. Technology, Infrastructure, Demographics and Behavioural/Cultural Factors - Kenya Case Study

Factor	Connectivity (Internet/ Mobile Penetration)	Social Media Adoption	Demographics	Behavioural/ Cultural
<p>Consideration</p>	<p><i>(Quarterly Sector Statistics Report, October-December 2012)</i></p> <p>30.7 million subscribers registered to Kenyan mobile networks⁴²</p> <p>78% mobile penetration in Kenya⁴³</p> <p>7.3 billion minutes of local mobile traffic.⁴⁴</p> <p>3.6 billion SMS (an average of 40.1 SMS sent by each subscriber per month)⁴⁵</p> <p>9.4 million Internet/ data subscriptions (mobile Internet/ data subscriptions contributed 99% of all subscriptions)⁴⁶</p> <p>16.2 million Internet users⁴¹</p> <p>41.1% Internet penetration⁴⁸</p>	<p>Facebook: 2,015,600 Kenyan Facebook Monthly Active Users in April 2013 (The number of people who have been active on Facebook during a 30-day-period).</p> <p>As of April 2013, this number grew by more than 58,400 within 6 months.</p> <p>5.03% penetration of total country population</p> <p>19.21% penetration of country's online population</p> <p>Twitter: 2,476,800 geo-located tweets generated in Kenya in the last quarter of 2011.⁴⁹</p> <p>2.6 million election-related tweets collected between March and April 2013; 1.8 million (69%) generated from Kenya (determined by assessing user location).</p>	<p>Mobile: To register to any mobile network, a national ID card is required (issued by government to anyone over 18 years).</p> <p>Facebook: The largest age group is currently 18-24 with total of 810,080 users, followed by the users in the age of 25-34.⁵⁰</p> <p>Twitter: While comprehensive Twitter statistics are unavailable, in April 2013, Kenya was assigned the Twitter Local Trends allowing users to search for what's trending in the country.⁵¹ The assignment is an indication that Twitter has been receiving enough tweets⁵² from the the country to add it to the list.</p> <p>Adult Literacy Rates (age 15 and above who can read and write, 2010 estimates): Kenya has a total adult literacy rate of 87.4%, with 90.6% of men and 84.2% of women.⁵³</p> <p>Literacy levels by province (2007 estimates most recent) indicate that the North Eastern part of the country has significantly lower literacy levels as compared to other administrative regions.⁵⁴</p>	<p>Media houses, politicians and influential personalities all invited people to share information and opinions on election-related events on social media. On Twitter, the use, and even the debate of which hashtags to use, captured the popularity and intensity of information sharing online.</p> <p>A pre-election data-mining test run (during the first ever Presidential Debate that was held one month prior to the election) resulted in capturing 90,000 tweets over the 2-hour debate period, collected using Twitter hashtags.</p>

In the Kenyan context, politics is a popular subject matter, drawing opinions, sentiments and information on political events. In assessing the viability of crowdsourcing, we have been looking at the 'social media culture' in Kenya (i.e. what events draw interest and consequently lead to the production of 'crowdsourced' information). In our preparatory research we found that Kenyans have frequently used Twitter in recent years. For example, it was used to carpool during a public service transport strike in December 2012, or as a platform for raising awareness about fake political parties membership registration that some were inadvertently victims of in the lead-up to the general election.

The answers to each category above led us to believe that crowdsourcing during the Kenyan General Elections is viable, as information around the event was being generated by the public. Based on the various categories, we found that although Kenya ranks high on risk indices, the country also is relatively high in freedom of speech; there is a culture of speaking out and reporting among the citizens even when the traditional media is wont to self-censor. The high technology uptake, especially mobile phone penetration, also creates an avenue for increased citizen reporting. Coupled with the continuously increasing growth in mobile, SMS and Internet penetration and usage, as well as the behavioral and cultural contexts informing what Kenyans discuss, a case study of the 2013 Kenya General Election was a feasible platform for exploring how citizens make the news.




Endnotes

1. "Universal Declaration of Human Rights, Article 19," *UN.com*, <http://www.un.org/en/documents/udhr/>.
2. Rikke Frank Jørgensen, "Internet and Freedom of Expression," Thesis for European Master Degree in Human Rights and Democratisation, Raoul Wallenberg Institute, 2001, <http://www.ifla.org/files/assets/faife/publications/ife03.pdf>.
3. Freedom House, "Freedom on the Net Index," 2012, <http://www.freedomhouse.org/report/freedom-net/freedom-net-2012>.
4. Freedom House, "Freedom of the Press," 2013, <http://www.freedomhouse.org/report-types/freedom-press>.
5. Social Media and Political Participation Lab: New York University, "SMaPP Data Report: A Breakout Role for Twitter? The Role of Social Media in the Turkish Portests," http://smapp.nyu.edu/reports/turkey_data_report.pdf
6. Ibid.
7. Ibid.
8. "The development and application by Governments, the private sector and civil society, in their respective roles, of shared principles, norms, rules, decision-making procedures, and programmes that shape the evolution and use of the Internet." "Report of the Working Group on Internet Governance," 2005. <http://www.wgig.org/docs/WGIGREPORT.pdf>.
9. E-government is defined as the use of ICT and its application by the government for the provision of information and public services to the people. UN Public Administration Programme, "E-Government Development," http://unpan3.un.org/egovkb/egov-ernment_overview/ereadiness.htm.
10. "United Nations e-Government Survey," New York, 2012, <http://unpan1.un.org/intradoc/groups/public/documents/un/unpan048065.pdf>.
11. United Nations, "Main Features Reviewed by the United Nations e-Government Survey," February 2008, <http://unpan1.un.org/intradoc/groups/public/documents/un/unpan029361.pdf>.
12. Constitution of Kenya, 2010, <http://www.kenyaembassy.com/pdfs/The%20Constitution%20of%20Kenya.pdf>.
13. Republic of Kenya Office of the Deputy Prime Minister and Ministry of Finance, "Budget Outlook Paper," November 2010, <http://www.scribd.com/doc/56953624/Kenya-Budget-Outlook-Documents-2011>.
14. Collins Mballo, "Kenya: Finance Minister Uses Social Media to Prepare Budget," *Globalvoicesonline.org*, 11 June 2011, <http://globalvoicesonline.org/2011/06/11/kenya-finance-minister-uses-social-media-to-prepare-budget/>.
15. Kui Kinyanjui, "Treasury Invites Kenyans to Tweet their Budget Views," *Business Daily Africa*, May 9, 2011. <http://www.business-dailyafrica.com/Corporate-News/Treasury-invites-Kenyans-to-tweet-their-budget-views/-/539550/1158522/-/xun3ft/-/index.html>.
16. "Maplecroft's Political Risk Atlas 2013 forecasts global risk hotspots," September 1, 2013, http://maplecroft.com/about/news/pra_2013.html.
17. Maja Bott and Gregor Young, "The Role of Crowdsourcing for Better Governance in International Development," Center for International Development at the University of Albany State University of New York, (2012), <http://fletcher.tufts.edu/praxis/~media/Fletcher/Microsites/praxis/xxvii/4BottYoungCrowdsourcing.pdf>.
18. "A fragile region or state has weak capacity to carry out basic governance functions, and lacks the ability to develop mutually constructive relations with society." from "Fragile States 2013: Resource flows and trends in a shifting world," OECD, 2012, <http://www.oecd.org/dac/incaf/FragileStates2013.pdf>.
19. Wired for Repression, *Bloomberg.com*, <http://topics.bloomberg.com/wired-for-repression/>.
20. Refers to the gap between those who can benefit from digital technology and those who cannot. Craig Warren Smith, Digital Divide Institute, <http://www.digitaldivide.org/digital-divide/digitaldividedefined/digitaldivide.html>.
21. Adult (15+) literacy rate (%). Total is the percentage of the population age 15 and above who can, with understanding, read and write a short, simple statement on their everyday life. The World Bank Data Catalogue, <http://data.worldbank.org/indicator/SE.ADT.LITR.ZS>.
22. Peter van der Windt, "From Crowdsourcing to Crowdseeding: The Cutting Edge of Empowerment?," <http://petervanderwindt.files.wordpress.com/2012/03/crowdseedingoup.pdf>.
23. Ibid.
24. Ibid.
25. Ibid.
26. Ibid.
27. Patrick Meier, "Why Bounded Crowdsourcing is Important for Crisis Mapping and Beyond," *iRevolution (blog)*, December 7, 2011, <http://irevolution.net/2011/12/07/why-bounded-crowdsourcing/>.
28. Victor Naroditskiy, Iyad Rahwan, Manuel Cebrian, Nicholas Jennings, "Verification in Referral-Based Crowdsourcing," *PLoS ONE* 7, no. 10 (2012), accessed March 20, 2013, <http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0045924>.
29. Rhoda Omenya, "Uchaguzi Kenya 2013 Monitoring and Evaluation Report," *iHub Research*, July 2013, http://www.ihub.co.ke/ihubresearch/jb_UchaguziMEFinalReportcompressedpdf2013-7-9-11-28-48.pdf.
http://www.ihub.co.ke/ihubresearch/jb_UchaguziMEFinalReportpdf2013-7-5-14-24-09.pdf
30. Ibid.
31. Scale: 0= most free, 100 = least free; Freedom House, "Freedom on the Net Index," 2012, <http://www.freedomhouse.org/report/freedom-net/freedom-net-2012>.
32. Maplecroft's Political Risk (Dynamic) Index, 2013, http://maplecroft.com/about/news/pra_2013.html.
33. Freedom House, "Freedom of the Press," 2013, <http://www.freedomhouse.org/report-types/freedom-press>.
34. David Souter, Monica Kerrets-Makau, "Internet Governance in Kenya - An Assessment for the Internet Society," September 15, 2012. Accessed on April 23, 2013, <http://www.internetsociety.org/internet-governance-kenya-assessment-internet-society>.
35. Ibid.
36. Communications Commission of Kenya (CCK), "Kenya -- Consultation on the Implementation of a Unified Licensing Framework," <http://www.ictregulationtoolkit.org/en/toolkit/notes/PracticeNote/3135>.
37. David Souter, Monica Kerrets-Makau, "Internet Governance in Kenya - An Assessment for the Internet Society," September 15, 2012. Accessed on April 23, 2013, <http://www.internetsociety.org/internet-governance-kenya-assessment-internet-society>.

38. "United Nations e-Government Survey," New York, 2012, <http://unpan1.un.org/intradoc/groups/public/documents/un/unpan048065.pdf>.
39. OECD Development Assistance Committee (DAC), "Ensuring Fragile States Are Not Left Behind," February 2010, <http://www.oecd.org/dac/fragilestates/44822042.pdf>.
40. "Fragile States 2013: Resource flows and trends in a shifting world," OECD, 2012, <http://www.oecd.org/dac/incaf/FragileStates2013.pdf>.
41. The Fund for Peace, "The Failed States Index," <http://ffp.statesindex.org/>.
42. Statistics from the latest Communications Commission of Kenya, Quarterly Sector Statistics, October- December 2012) report. http://www.cck.go.ke/resc/downloads/Sector_statistics_for_Quarter_2_-_2012-2013.pdf
43. Ibid.
44. Ibid.
45. Ibid.
46. Ibid.
47. Ibid.
48. Ibid.
49. Portland, "New Research Reveals How Africa Tweets," February 2012, <http://www.portland-communications.com/2012/02/new-research-reveals-how-africa-tweets/>.
50. Social Bakers Statistics, April 2013, <http://www.socialbakers.com/>.
51. Royce Cheng-Yue, "Trends in 160+ countries." *blog.twitter.com (blog)*, April 11, 2013, <https://blog.twitter.com/2013/trends-160-locations>.
52. Twitter Help Center, "FAQ about Trends on Twitter," *support.twitter.com (website)*, <https://support.twitter.com/articles/101125-faq-about-trends-on-twitter>.
53. Ibid.
54. The CIA World Factbook, "Literacy," *www.cia.gov*, <https://www.cia.gov/library/publications/the-world-factbook/fields/2103.html>.
55. A.K.M. Kilele, "Adult Literacy in Kenya," Kenya National Bureau of Statistics, <http://www.knbs.or.ke/downloads/pdf/KNALS2007.pdf>.



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