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# AFRICA'S VOICES METHODS AND ANALYSIS

Radio forums, both national and local, are powerful tools for discussing issues affecting people's lives. Many listeners respond using SMS texting and this is a rich source of data which, if analysed with care and using sophisticated techniques, can provide invaluable insights into when and how changes in beliefs and opinions occur. These changes can also be readily linked to socio-demographics.

As a large-scale focus group, the engagement of diverse communities in radio discussions allows different ideas to flow. By contrasting opinions across social boundaries, we can identify collective beliefs. Adding a temporal dimension to these opinions allows us to analyse how ideas change over time within certain social groups.

## A window into social worlds

When radio shows invite audiences to send their opinions through mobile phones, a social space is created where people communicate with others "like them" using expressions and references that imply a common understanding of the world. Audiences interact with stations by sending greetings, requesting music or sharing their views on social or political issues with a community of people who speak their language, who live in the same area, or have common concerns or music tastes.

Participation in these spaces is always meaningful for individuals who listen and who are listened to. Being heard on the airwaves is the main motivation to participate in these forums that amplify voices - an opportunity usually confined to community meetings, markets, workplaces and small encounters. As real social spaces, where people participate spontaneously with others with whom they share identities, interactive radio shows offer a window into the inner world of communities expressed through opinions, stories, metaphors, slang and jokes.

## The power of shared beliefs

The idea of citizens (or beneficiaries) as rational actors who make decisions that maximise gains and minimise losses conflicts with behavioural and cognitive theories that consider context frames, social preferences, mental shortcuts and automatic thinking. At play is a deeper social dimension. Groups in society adopt and form common-sense theories about their social and physical worlds, for example stereotypes about other groups, beliefs about causes and treatment of diseases, or gender roles in children's education.

Often these collective beliefs are acquired through interactions with others, through communication or learned implicitly by social norms and rituals that can both persist and evolve across generations. When internalised and widely shared, they constitute their own reality that is then expressed through language and behaviour. Individual or group choices and preferences can best be understood from the standpoint of the community of people that share the same worldviews.

**Citizen engagement means listening intelligently**

The ability to listen intelligently to conversations in order to understand the worldviews of communities presents new opportunities for development and governance actors and policy makers. Shared mental models lie at the basis of beliefs, norms and practices of social groups, as they are used to make sense of the world by filtering information and interpreting situations. Changing practices can be difficult to achieve only by passively transmitting knowledge and changing attitudes of a few individuals. Shared mental models need to be challenged through inclusive discussions, and shifts in norms need to be perceived by individuals.

In some situations, for example if we want to identify, and then shape, the social beliefs toward polio vaccination, we need to look at the ideas that distinguish people who decided to and who decided not to vaccinate their children (given equal access to vaccines). We might probe into whether certain beliefs about vaccination, such as misconceptions about side effects or distrust of 'foreign' medicine, hinder vaccination uptake, and then use insights from the language used by those who take up vaccination provision, to shape new engagement strategies built around social conversations.

**Unique Africa's Voices analytics**

Collective ideas are identified through a molar approach in which the unit of analysis are word associations present in conversational data. Connecting word associations into clusters of words reveals ideas that are specific to certain gender, age or geographical groups. As ideas are abstracted from real discussions, their interpretation needs to be framed within the local context. To achieve this, we use an approach that combines human knowledge with data science and social sciences.

We start by identifying domain (or topic) relevant 'seed words' that are the most frequent in the data and pair them with associated words that are also meaningful within the domain. Some of these words are subsequently paired with others through an iterative process that stops when all the meaningful associations are identified and represented in semantic networks. This initial analysis is performed per group so as to detect ideas shared by well-delimited socio-demographic or behavioural groups. Native speakers who share the social context as the target communities are key during this initial stage to select word associations, label ideas, pinpoint relevant expressions, and decode humour and sarcasm. Often, these native speakers come from within our client organisations, so that we can harness their specialist contextual knowledge, and engage them in the process of exploring data and discovering insights.

Through a data driven process shaped by human knowledge of language and context, we form a lexicon that comprises words that people use to talk about a certain topic. But we also consider domain (topic) keywords that are chosen a priori by native speakers. Thus, using the same method, we start with the keywords to find word associations. Using the word association method, ideas that are dominant can be more easily identified. We understand that ideas are formed within a social milieu, shaped by social identifications and social norms. Though core ideas reflect shared worldviews, there is also space for innovation. Some voices are unique, but are also powerful enough to contest widespread ideas. So we delve into the data to understand not only trends but also outliers by bringing back unique voices in all stages of the analysis.

Social science theories explain the social mechanisms of how ideas change over time, for example, through convergence to group norms, persuasion by high status audience members (real or perceived), polarisation by resisting to conflicting ideas or external events that trigger changes in opinions. Often some of these dynamics are revealed at a smaller scale, for example following intertwined conversations or tracing opinions from the same individuals over time. We combine different levels of evidence to corroborate hypotheses about conversational dynamics, using

snapshots of conversations to probe meaning and generate hypotheses that can be further investigated using large-scale conversational data.

The insights of our analysis result from an interplay between the word clusters and the raw opinions that constitute them. Our analysis is:

1. *Iterative*, as from initial seed words (e.g. most relevant words in data), other words are found based on association rules, and from these words others are found forming clusters of words;
2. *Selective*, as word associations as well as coherent clusters of words, relevant within a certain domain, are selected;
3. *Supervised*, as in all stages native speakers decode, interpret and select relevant inputs and outputs;
4. *Exploratory*, as native speakers and researchers interact with raw messages and derive hypotheses linked to concrete examples;
5. *Emergent*, as higher order findings (e.g. collective ideas) are abstracted from word associations whose meaning is linked to the conversational context embedded in the raw messages.

**What makes our analysis valid?**

Africa's Voices data is skewed, reflecting the reality of voices. Not only are radio audiences or social media discussions skewed in comparison to the general population but also those who chose to participate in these discussions are not representative of the audiences as a whole. Men, younger and more educated people are more likely to engage in radio discussions through mobile phones. But voices of those at the bottom of the pyramid can also be heard. Therefore we can identify these bias and compare groups.

The richness of voice is immensely valued in our analysis, at the expense of statistical generalisations. Because we analyse the full data from participants, often big, messy and unstructured data, representativeness is not the main criterion to assess the validity of our findings. Even if target communities are not represented in a statistical sense, participants' voices echo the reality of radio discussions, and they are influential to a larger group of people that listen to radio shows (i.e. 70-90% of the population in most African countries).

Credible findings are then related to the robustness of our methodology coupled with meaningful data (gathered in a real context). What really matters is that people who participate in the discussions are diverse and heterogeneous, making it possible for us to identify collective ideas from different social groups, and how they change over time. Unlike surveys that "count heads" and frame questions upon researchers' ideas of reality, our methods allow unexpected insights to emerge and interpretations to be grounded in alternative, and actual, social realities.

In our approach we "learn by doing" as new projects usually require tailored techniques and new tools. As human knowledge is central to our approach, we build resources for language interpretation (for example stop-word lists or idiomatic expressions for African languages) so new projects can benefit from previous ones. Using carefully designed methods, we learn what works and does not work, for example, when engaging audiences or working with new organisations.

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