

Who Can Deliberate?

Deliberative Reasoning in Ghana's First Deliberative Poll

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Summary. — Who can deliberate? Skeptics contend that deliberation is for policy experts and representatives. So what are the prospects for this kind of public consultation in developing countries where the populations are impoverished and often lack formal education? This paper examines the quality of reasoning in a structured deliberation setting - Deliberative Poll - in Tamale, Ghana with a random and representative sample of citizens. We probe a double counterfactual: what if a representative sample of a population living in poverty and with little formal education were placed in a formal setting designed to provide good conditions for deliberation, to what extent could they reason about public affairs? Can they deliberate in a manner comparable to the mass public in the most developed nation? We draw upon the Discourse Quality Index and propose a revised measure of communicative reasoning to assess the reasoning quality. To analyze the quality of reasoning, we employed large-scale hand coding as well as computational methods to study thousands of speech acts from the deliberation transcripts.

Key words — deliberation, mass public, comparative discourse analysis, good conditions, communicative reasoning

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1. INTRODUCTION

Deliberation is a form of communication with certain characteristics that facilitate the public will. Deliberation can happen in daily life, including formal discussion among elites within institutions, talks in the media and among political activists as well as citizens' everyday talk (Mansbridge, 1999). Yet, these everyday conversations are usually less structured than deliberation in organized settings (Conover et al., 2002). Deliberation entails mutual respect and reasoning that is based on good information. There are specific democratic designs such as moderation of online discussion (Wright and Street, 2007) and Deliberative Poll (Fishkin and Luskin, 2005) that are supposed to enhance the deliberative character of everyday political talk. However, these designs are thought to be demanding for ordinary citizens (Conover and Searing, 2005).

This paper asks: *Who can deliberate about politics? Can ordinary citizens from developing countries, who are poor and have limited formal education, deliberate at a level comparable to those from the most developed countries?* We explore these questions by examining the quality of deliberation in a Deliberative Poll that was conducted in Tamale, Ghana in 2015. For this purpose, we employ the Discourse Quality Index to study reasoning in deliberation. To provide a hard benchmark to evaluate the quality of reasoning, we also study a Deliberative Poll in California.

This paper tempers the skepticism that limited literacy and poor socioeconomic conditions are barriers to reasoning in deliberation. Through providing systematic evidence that goes beyond anecdotal data, this paper enriches a new strand of research that is optimistic about citizens' capacity to deliberate in the global south (Heller and Rao, 2015) and the universality of political deliberation across cultures (Sass and Dryzek, 2014; Sass, 2018). The systematic

evidence comes from analyzing the reasoning quality of deliberation from a randomly selected sample of ordinary citizens with limited education in one of the most impoverished areas of a developing country (Ghana). To demonstrate that the reasoning quality of this population is high, we compare it to the reasoning quality from a randomly selected sample of ordinary citizens from one of the most developed countries as a benchmark. This provides a hard test: if the reasoning quality of populations from the developing nation is comparable to the most developed nation, it points to the promise of empowering citizens in developing nations with the capacity to provide input on decisions. We show how we could envision deliberative quality through drawing upon Discourse Quality Index (DQI) as well as enhancing DQI by proposing the indicator of “substantive response” to capture people’s communicative reasoning during deliberation. We also demonstrate how we can use machine learning methods to analyze a much larger number of speech acts.

Since deliberative democracy theories have been raised, scholars have maintained that the use of reasoning required for such an engagement may elude ordinary citizens (Mill, 1874:419; Schumpeter, 2013: 257-262; Posner, 2003:107; Jacobs et al., 2009:4; Rosenberg, 2013). Skeptics question ordinary citizens’ capacity to weigh competing arguments and to respond to each other substantively (Mendelberg, 2002:166-173; Posner, 2003:107). Extensive theories have demonstrated the importance of high level of formal education and socioeconomic conditions to the ability to deliberate politics (Verba et al., 1995:5, 304-334, 514; Nie et al., 1996:31, 41; Cohen and Rogers, 1983: 158; Galston, 2001; Jacobs et al., 2009:48). Evidence has shown that even in the most developed nations, only the very few educated and wealthy can deliberate (Rosenberg, 2007: 143-158; Rosenberg, 2013:107). Therefore, the application of deliberative

democracy is believed to be problematic in developing countries where citizens' literacy rate and socioeconomic status are extremely challenged (Murphy, 1990; Humphreys et al., 2006).

The skepticism brings in question the goal of the development of freedom advocated by international organizations such as the United Nations and the World Bank. These organizations advocate that for developing nations to achieve development of freedom, it is crucial to empower ordinary citizens with the opportunity and capacity to participate and decide their own development (Sen, 1988, 1990, 1993 and 1999; Dreze and Sen, 1999; Deneulin, 2006). However, if low literacy and poor socioeconomic status are incompatible with deliberation, development of freedom can never be achieved. To respond to the prevailing skepticism of the possibility of deliberative democracy in developing nations and to provide promising solutions to the development of freedom, we pose the following question: if the mass public in the least developed parts of the world are provided with the proper conditions, can they deliberate about public affairs at a high level as measured by the discourse quality index?

2. THEORY ON DELIBERATIVE REASONING

To answer the whether the mass public in the least developed parts of the world can deliberate or not, we first need to understand what deliberation requires. At the core of the theories of deliberative democracy is the requirement of reason-giving (Gutmann and Thompson, 2004:3; Mercier and Landemore, 2012). Reason-giving of deliberation has two important features: 1). it requires individuals to use reasoning in all three stages: the formulation of opinion, the expression of opinion, and the exchange of opinion; 2). reason-giving of deliberation is communicative. It requires individuals not only to use reasoning when they state their opinions, but also when they respond to each other.

In the stage of opinion formulation, reasoning requires individuals to weigh the pros and cons of competing arguments (Fishkin, 2009: 35; Fishkin, 2013). This requires individuals to seek and analyze competing reasons offered by their fellows and to contemplate the merits of information from diverse sides (Gutmann and Thompson, 2002). Reasoning also requires individuals to justify their opinions by reasons when they state them, which is central to deliberation (Mansbridge, 2010; Scanlon, 1982; Bohman, 1998). It demands that individuals to apply reasons when they express their opinions rather than simply declaring their preferences and demands alone. Types of justification/reason can include facts, valid norms, or truthful subjective experiences (Habermas, 1984:70). Compelling reasons account for public interest, justice, freedom, equality (Rawls, 1997) as well as self-interest (Mansbridge, 2010). It is important to note that deliberation is a unique process of communication grounded by reasons. This means that individuals should not only use reasoning when they state their opinions but also when they respond to each other. Individuals must answer others' arguments seriously, not simply offer opinions (Fishkin, 2011:34, 36). As Siu (2008, Chp.3: 64) stressed, "before people develop and reconsider opinions, we need to learn and understand both sides. Thus, in deliberations, we need to ensure that participants have access to all of the necessary information and competing arguments needed to voice an informed opinion." Because deliberative reasoning is communicative, it recognizes the importance of individuals offering substantive responses to others. To give substantive responses, individuals should think over others' ideas seriously to reflect upon and refine their own opinions and to respond to others' responses in a substantive manner.

3. SKEPTISIM ON WHO CAN DELIBERATE

Because deliberation requires a strong reasoning capacity, many skeptics contend that only elites - not ordinary citizens - can deliberate. The founding fathers established the system for the United States governed by a chosen body of citizens “whose wisdom may best discern the true interest of their country, and whose patriotism and love of justice will be least likely to sacrifice it to temporary or partial considerations (Madison, 1787).” Madison believed that this chosen body of citizens could overcome the myopia that most ordinary citizens supposedly suffer. In a similar spirit, the early Mill also preferred that deliberation be led by the better educated (Mill, 1874:419). Contemporary scholars have advanced theories and evidence demonstrating how socioeconomic resources (such as education and income) contribute to civic skills. Using the 1990 citizen Participation Study, Nie et al. (1996:31) found that “well-educated citizens display substantially greater levels of understanding of the principles of democratic government, have a much better ability to identify incumbent local and national leaders, and can more frequently give the correct answers to questions about current political facts.” Verba et al. (1995:305) point out that “education enhances participation more or less directly by developing skills that are relevant to politics – the ability to speak and write, the knowledge of how to cope in an organizational setting.” Thus, education makes for more cognitively competent deliberators (Mendelberg, 2002; Nie et al., 1996: 41). Besides education, income also impacts the capacity to reason about public affairs. Scholars indicate that people with higher income have more desire and resources to participate in politics (Verba et al., 1995; Cohen and Roger, 1983: 157-158).

Empirical evidence has proven that even in the most advanced nation, ordinary citizens cannot deliberate, and that deliberation remains dependent on one’s level of education and income. For instance, some scholars have criticized that deliberative democracy theory is premised on unrealistic assumptions that ordinary citizens are competent in communication

(Posner, 2003:107; Rosenberg, 2013). The complexity of public issues creates a cognitive burden on ordinary citizens (Rosenberg, 2013). Ordinary citizens in the most developed nations such as the United States have even been shown to lack this communication skill (Rosenberg, 2007: 143-158; 2013: 107).

In less developed nations, where the illiteracy rate is much higher and living conditions are much more challenging, evidence shows that it is even harder for people to deliberate. For instance, Humphreys and his coauthors (2006) examined a deliberative democracy experiment in the African island state of Sao Tome and Principe in 2004. They found that although the deliberation experiment took precautions to provide an ideal communication environment, the influence of leaders on the deliberation outcomes remained extremely strong. Thus, although that the World Bank have promoted the participatory approaches (i.e., the Comprehensive Development Framework) toward governance in developing countries, deliberation on the ground suffers severe problems: undermined or used strategically by bureaucrats/politicians/vested interests from the clients (Murphy, 1990; Lancaster et al., 2003; Gibson and Woolcock, 2008; Sheely, 2015), had little “emancipatory and inclusive impact at the grassroots (Cooke and Kothari, 2001)”, disconnected from actual decision-making (Delli Carpini, Lomax Cook and Jocabs, 2004), or misrepresented by these citizen representatives who deliberate (Mustalahti and Rakotonarivo, 2014). As Fontana and Grugel (2016) pointed out, these problems are due to lack of a clarity on “who is entitled to participation, why they do, and whether they are doing so as a corrective to exclusion, a promotion of citizenship, or as a mechanism for redistribution.” Therefore, lacking an appropriate method to consult the citizens in the developing country have put at stake the promise of deliberation.

Reflecting upon the literature that questions citizens' capacity to deliberate, one factor that needs greater emphasis is the institutional design that might help people with limited education and socioeconomic status overcome the barriers to deliberation. These designs would: immerse people in an environment of diverse views, offering balanced information material (or videos) to cover competing perspectives and establish deliberation ground rules or norms of discussion to ensure that participants are given an equal opportunity to express themselves and to listen to each other. These conditions can potentially empower populations in developing countries with the capacity to deliberate because they provide the knowledge required to understand public issues and the opportunity to weigh trade-offs. Moderated small group discussion can also encourage individuals who feel less confident due to their low socioeconomic status to express their thoughts in public. The impact of these potential conditions is understudied, especially in organized settings in developing countries, mystery in the field how well such a design would work

4. EMERGING AND PROMISING EVIDENCE IN DEVELOPING COUNTRIES

One example of a method for providing these good conditions is the practice of Deliberative Poll. DP aims to explore what the public opinion would be given good conditions (Fishkin, 1991, 2018). These good conditions include “random recruitment of participants, informational input about the issues discussed in balanced briefing materials, moderated small group discussions, plenary sessions in which questions from the small groups are answered, and repeated attitude measurement (Isernia and Smets, 2014).” DP has been proven to empower citizens in challenging environments the capacity to deliberate about public affairs. For instance, after examining multiple Deliberative Polls in Ulaanbaatar, Uganda, and Europe, Fishkin (2018, pg.123-125) showed that citizens are indeed deliberating using identifiable reasons and weighing

competing arguments. Therefore, the author reminded us that “in the right context, we get reasoning citizens, not infantile ones (pg.124).”

In fact, a growing body of literature that study deliberation/everyday political talks in developing nations more or less find that citizens in developing nations are capable of deliberating to hold their leaders accountable or to raise demands to solve their poverty problems. For instance, Paller (2016) investigated informal practices of accountability between citizens and leaders in daily life settings such as town hall meetings, house visits, and street protests in Ghana. He pointed out that citizens are exercising their participatory capacity to hold their leaders accountable. Rao and Sanyal (2010) further examined the discursive quality of these informal practices in the South Indian villages through studying 290 transcripts of deliberation in public meetings in South India villages. The authors found that villagers weighed the merits and demerits of different methods to solve the poverty issue. Similar evidence of the strong reasoning capacity is also shown in rural Malawi where citizens raise legitimate claims on others and of their right to pursue their interests strategically (Swidler and Watkins, 2011: 133-161), in the Brazil participatory institutions where less educated/low-income groups participate in the policy-making process to increase their power (Wampler, 2007; Donaghy, 2011), in democratic talk in church (Smith 2017), in ethical listening in mosques in the Egyptian Islamic Revival (Hirschkind 2006:69; 108-110) and in Botswana’s postcolonial transition (Sass, 2018).

The emerging evidence suggests that illiteracy is no insurmountable obstacle to deliberation as long as participants are provided the appropriate communication and information (Wisor, 2011, Chp.10; Wisor, 2012). Sen (2003) and Sass (2018) further contended that democracy as public reason is for all societies and is across diverse cultures.

These emerging studies point to a new direction for future research: “cross- cultural learning can enrich the theory of deliberative democracy and give democratic theory a more universal reach (Sass and Dryzek, 2014).” Despite that scholars in recent years have begun to look into practices of participatory/deliberative democracy in developing countries, there is still surprisingly thin empirical literature on democratic deepening in the developing world (Heller and Harilal, 2007) and there is little research that goes beyond anecdotal evidence to systematically examine the discourse quality itself to understand whether people in developing nations can deliberate about politics or not. There are even fewer studies conducted to explore the proper conditions that can make deliberation possible for populations in the developing world. Moreover, despite these important efforts at public consultation in developing countries, a majority of them did not employ random sampling to ensure representativeness of the sample and thus we did not know whether the resulting conclusions are representative of the whole population or not. Our paper changes this situation.

We examined when given good conditions in an appropriate democratic design, whether ordinary citizens in the least developed part of the world can engage with each other in substantive political talks. We do not just look at their opinions from opinion polls but at their reasoning on how they reach their opinions. We provided the first systematic discourse analysis, employing automated text analysis, on citizen deliberation in a developing country by analyzing thousands of speech acts. To measure the quality of reasoning, we drew upon and enhanced a well-grounded discourse quality index (DQI). Our study enriches the understanding on whether citizens in the developing country can be consulted and how to consult them in an effective way. It also contributes to the methodological discussion on how to study deliberation in developing

countries by using a revised DQI and applying it via machine learning to thousands of speech acts.

5. THE CASE OF TAMALE

Our data come from a case study of a Deliberative Poll (DP) that was conducted in Tamale, Ghana on January 10 -11 in 2015. Ghana ranks at the lowest 25% on the Human Development Index (HDI) by UNDP ¹: its mean year of schooling is 7 years (in the United States it is 12.9 years); its gross National Income per capita is \$3,852² (in the United States it is \$52,947). The level of education and socioeconomic conditions in Tamale is even worse than the general population of Ghana. The city of Tamale lies in the Northern Region of Ghana with a population of 360,579 in 2010³. Its residents have suffered a range of life challenging problems such as disease and food insecurity⁴. Deliberative Poll selected a random sample of 208 ordinary citizens in Tamale participants. The participants are representative of the whole population in both demography and attitudes toward city policies: 48% male with an average age of 33.7, 27.9% never been to school, and 3.9% first degree holders⁵.

Tamale citizens' very limited level of formal education poses a challenge for reasoning about public affairs. As discussed in the section of "skepticism on who can deliberate," scholars have stressed the challenge of limited level of education to deliberation. Echoing with these skepticism, Smith (2017) further explained that "in new and developing democracies, levels of education are often low and many citizens lack experience with democratic processes.....In low-income and low-education neighborhoods, where access to media and political information through everyday social networks is more limited." Therefore, this limited level of education constrains people's capacity to develop deliberation skills to reason about public issues since

they have on one hand lower access to political conversations and media sources and on the other hand do not know how to make sense of the information they have received (Smith, 2016).

Citizens in Tamale are not only disadvantaged in their level of education, they also struggle with extremely low socioeconomic status. Tamale is one of the three poorest regions in Ghana⁶. These poor living conditions further force most inhabitants to focus on daily sustenance rather than public affairs (Verba et al., 1995; Cohen and Roger, 1983: 157-158).

On the other hand, Ghana is found to have vibrant political discussion and a competitive democracy. As Hasty (2005: 1-2) noticed during her field trips in Ghana, “whether you walk, take a taxi, or ride the bus to work, someone around you is reading, listening, or discussing the news, usually adding context and commentary and inviting your own participation. And when you get to work (or school or the market or wherever you’re going), you meet up with friends, colleagues, and customers throughout the day, engaged in intermittent yet ongoing commentary on local, national, and global events.” The level of democracy in Ghana is also quite high (Freedom House, 2018). Since 1992, Ghana has held competitive elections with peaceful transitions of power and the country has paid great efforts to ensure political rights and civil liberties.

Thus, while the skeptics offer reason to question the potential for deliberation in Ghana, there are some promising aspects. We will test the viability of deliberation by looking inside the deliberative process in a structured design for public consultation posing important policy issues for decision. The structured design will specify what we regard as good condition for engaging with competing arguments and producing the conclusions from a representative sample. Our data will shed light on the extent to which the participants reason about the issues, weighing the competing arguments.

The Deliberative Poll (DP) is a unique method of public consultation which exposes participants to a balanced, diverse, and equal information environment. In every Deliberative Poll, participants are selected using random sampling method from the whole population to ensure representativeness. They are given well-balanced information material (or video) before the deliberation event to get an understanding about the issues to be discussed. These 15-minute videos were prepared by an extensive advisory committee consisting of academic experts, NGOs, stakeholders and government officials. On the deliberation day(s), participants are randomly divided into small groups of 10-15 people. The 1-2 day's discussion is moderated by a well-trained moderator to ensure that everyone in the small group has the opportunity to express their opinions and thus no one dominates the discussion. The small groups are convened once during the deliberation event into a big plenary session where they can ask questions to an expert panel consisted of intellectuals in the area of discussed issues. In the case of Tamale, considering that one third of the participants are illiterate, the briefing materials were replaced by videos to introduce participants about the issues to be discussed⁷. The topics discussed in the Tamale DP are water, sanitation, and hygiene (WASH) and Livelihood and Food Security⁸ which are the pressing issues facing the city. And the purpose of the poll is to “provide direction for local government and the donor agencies on how to address the most pressing needs of the people in the metropolis⁹.”

6. DATA AND METHOD

Data. To analyze the reasoning capacity of participants in Tamale, we studied the deliberation transcripts from all the 15 deliberation groups in the Tamale DP. The deliberation lasted for two days with four sessions. Each session lasted about two hours. The number of

dialogues (i.e., speech acts) in these transcripts is around 3,000. By speech acts, we follow the definition from Steenbergen et al. (2003) as “the public discourse by a particular individual delivered at a particular point in a debate.”

To provide a baseline for analyzing the reasoning capacity of participants in Tamale, we also studied the deliberation transcripts in the California DP as a hard baseline. The rationale of choosing a baseline is two folded. On one hand, since our research interest is to examine whether populations with limited level of development can deliberate or not, we need a reference point for evaluation. We choose California DP because the participants are much more highly-educated (e.g., first degree holder: 3/9% vs 93.5%) and wealthy compared to the Tamale participants. If the Tamale participants can deliberate as substantively as the Californian, it offers a very strong case that limited level of formal education and socioeconomic condition are not incompatible with the ability to deliberate. On the other hand, although the topics of Tamale DP and Californian DP are different, with Tamale DP focusing more on public affairs (i.e., water, sanitation, and hygiene (WASH) and Livelihood and Food Security¹⁰) while the California DP focusing more on politics issues (i.e., the statewide initiative process, legislative representation, local government, and tax and fiscal policy¹¹), both topics are multifaceted and complex. Since our interest is to compare the level of deliberative reasoning, it is independent of the content of the topic but more dependent on the complexity of the topic. Moreover, although DP has been conducted in many countries, they follow the same design and procedures. Finally, not every deliberation meeting was transcribed every time due to the culture and politics of the experimented country. Among the ones that are transcribed, the Californian and the Tamale ones are the most complete and the translation of the Tamale transcripts were checked by local experts

who are bilingual to ensure the accuracy. This method of baseline comparison has been justified in studies such as Himmelroos (2017) and Pedrini (2014).

Measuring Deliberative Reasoning. The unit of analysis in this paper is a speech act, which consists of a single declaration of one sentence or a paragraph, in the deliberation session during the small group discussion. This paper excluded 10,000 speech acts that are not related to the deliberation session, for example, speech acts about the introduction of participants and about the logistic issues. This paper also excluded speech acts from the moderators since the paper compares the discourse quality of participants. Therefore, a total of 3,073 speech acts in the deliberation session were identified in the Tamale transcripts and a total of 38,749 speech acts in the deliberation session were identified in the Californian transcripts. Since all the small group discussions were recorded and transcribed for both the Tamale DP and the California DP, it allows researchers to analyze and compare the quality of speech acts between the two DPs. This paper developed the coding scheme by strictly following the principle of mutually exclusive and collectively exhaustive (MECE). The key factor (coding variable) to compare is *the level of reasoning* in the deliberation. We draw upon the latest Discourse Quality Index (DQI) on how it evaluates reasoning but we will also enhance the DQI by proposing a crucial indicator to measure “communicative reasoning”. We will present analyses using the standard DQI and our proposed revision.

Since DQI was proposed, it has been widely used. DQI was first applied to measure parliamentary debates in Germany, Switzerland, UK and U.S (Steiner et al., 2014) and was recently revised to be applied to measure citizen deliberation in Colombia, Bosnia-Herzegovina, Belgium and Finland (Steiner, 2012). One typical project that applies DQI is the EuroPolis Deliberative Poll conducted in 2009. Fishkin and Isernia (2014) have been using DQI to code

various small group discussions to explore whether citizens of Europe can deliberate together across barriers of language and nationality. Gerber (2015) used DQI (the indicator of responding to counter-argument) to assess the equality of consideration in deliberation. He found that inclusion is still a challenge during deliberation. Since DQI was first designed to evaluate parliamentary deliberation, some scholars have revised the standard DQI to measure citizen deliberation better. For instance, Caluwaerts and Reuchamps (2014) added the use of respectful language and respectful listening to the original DQI to study the effect of deliberative quality on attitude changes. Conducting two experiments in Belgium, they found that the overall effect of deliberation quality on opinion change is limited.

Despite the growing application of DQI, some scholars pointed out the deficits in the standard DQI. One typical criticism is from Bächtiger and his coauthors (2009). They noted that indicators (such as the counter-argument) in the standard DQI do not capture reciprocity, which is an important component in deliberation. Therefore, they suggested coding interactivity through identifying whether participants refer to other participants' arguments or not. We take this point into consideration by enhancing the DQI to incorporate communicative reasoning. They further pointed out that standard DQI only captures "type I deliberation", which is a rational discourse. Yet, it ignores the "type II deliberation" which embraces story-telling and is especially important to understand political talks across cultures. Thus, we regard story-telling or testimony as a form of reasoning when we developed our coding scheme.

We first draw upon the indicator of "level of justification" in the standard DQI which measures to what extent one uses reasoning when they express opinions (for specifics of our coding variables and examples, see Appendix I). If a speech act is opinion-expression, we coded it into: opinion that is expressed without reasoning, opinion that is expressed using reasoning.

Using reasoning include citing a fact, using moral claim, or using storytelling/testimony. We secondly propose the indicator of “substantive response”, which captures whether people utilizes reasoning when they respond to others’ arguments. As mentioned in the theories of deliberative reasoning section, deliberation is a process of communicative reasoning and communicative reasoning requires individuals to use reasoning during exchange of opinions.

The importance of raising this indicator is that it extends the “respect” and “level of justification” indicators in the standard DQI. In the standard DQI, the authors attempt to measure intersubjectivity through the indicator “respect”. Yet, a deeper examination of the components in the respect indicator, we found that it is far from “substantive response”, which is the essence of deliberation. In the latest version of the standard DQI (Steiner 2012: 269), Steiner decomposed respect into three aspects: respect (foul language), respect (respectful language) and respect (listening). Examples of the foul (respectful) language are: “*you are a liar*”; “*your argument is truly brilliant*”. The foul/respectful language does not tell us whether the speaker responds to other arguments in a substantive way or not. For instance, a reply such as “*Yes, I agree with you*” is coded as respect. However, it is a simple reply to other arguments and this reply cannot inform whether the speaker weights the merits of competing arguments or not. Moreover, another component in Steiner’s respect indicator is “respect (listening)”, which measures whether the speaker ignores arguments addressed to him or not. Yet, it still does not cover how the speaker responds to other arguments, whether in a simple or a thoughtful manner. The indicator of “level of justification” only captures to what extent one uses reasons when one speaks. Yet, this indicator cannot distinguish whether one’s use of reasoning is a response to other opinions or is one’s own opinion statement. Therefore, it is necessary to have a separate indicator in addition to the level of justification to evaluate the quality of reasoning when one

responses to competing arguments. Under the proposed the indicator of “substantive response”, we are able to measure if a speech act is a response to others’ arguments, whether it is a simple response or a substantive response. Examples of a simple response are: *“I agree; Yeah; Well, yes.”* Conversely, a substantive response is defined as a reply that adds additional information to the other arguments or offers reasons to justify why a speaker supports/opposes the other arguments. An example of a substantive response is: *“Okay, then I would say, yes. But first we have to establish that there is indeed that administrative savings. Because we don’t know that for a fact.”* It is substantive because the speaker responded to the previous speaker’s opinion on supporting a flat sales tax by pointing out that we need to ensure the fact that it can bring administrative savings.

Besides capturing the “substantive response” side of reasoning, this paper also elaborates on the level of justification of arguments in the standard DQI through identifying different types of reasons used by the speakers: testimony, fact, raising condition/assumption/suggestion for the discussed proposals to work. In particular, we regarded story telling/testimony as one type of reasoning.

Moreover, based on the nature of the speech acts in the Tamale and the California DP, each speech act is categorized into one of the four types: a speech act that is not related to the proposal, a speech act that is an opinion about the proposal, a speech act that is an inquiry for information/deliberation and a speech act that is a response to others’ opinions or inquiries. Therefore, for each speech act, we coded its type and its level of reasoning. These four types capture all the cases of the speech acts and are mutually exclusive to each other. To decide the type, we asked during the coding what the main purpose of a speech act is. To ensure the clarity of the coding rules, this study chose random samples from all the speech acts in the Tamale DP

and the California DP and multiple researchers manually coded them. We did several rounds of inter-coder reliability check to ensure that the coding rules are as clear as possible. We used a standard reliability measure, Krippendorff alpha (Hayes and Krippendorff, 2007) to check inter-coder agreement of each coding variable. On average, the inter-coder reliability of the manual coding is 0.86, indicating a high agreement among coders about the clarity of the coding scheme.

Method of analysis. We applied large-scale hand-coding and machine learning methods to code all of the speech acts in the Tamale and California transcripts. The procedures are: 1). We first manually coded two randomly chosen group discussions from the Tamale DP and two randomly chosen group discussions from the California DP. Several researchers hand-coded 2,648 speech acts for California DP (account for 6.83% of the total number of speech acts in California DP) and 442 speech acts for Tamale DP (account for 14.38% of the total number of speech acts in Tamale DP¹²). The number of speech acts to code for the training dataset is decided by ensuring that every variable in our coding scheme has enough samples for computational learning. 2). To strengthen the validity of the findings from manual coding, we employed several advanced text analysis methods to automate the coding of the rest small group discussion transcripts in the Tamale DP and the California DP. We used the Hopkins-King algorithm. Hopkins and King et al. (2010) developed the algorithm and the software for automated content analysis. It takes input as a set of documents such as blog posts, speech acts and newspaper pieces. The user chooses a categorization scheme (theoretically grounded) to code a small subset of all the data. For the rest of the data, the software codes all of them and reports the proportion for each category. Compared to existing approaches of document classification in the purpose of obtaining the proportion of each category, Hopkins and King et al.'s algorithm has been proved with its unbiased estimates and high accuracy¹³. The assumption

for the algorithm to provide the correct estimate is that the hand coded categories are clear among coders and are mutually exclusive and as complete as possible. The coding scheme deployed in this study, as described above, satisfies this assumption well. The other algorithms we also used include Supporting Vector Machine, Boosting, Bagging, Random Forest, Tree, and Neural Network. To decide which algorithm to be used to code our variable, we conducted validation tests to select the algorithm that gave the best performance. Thus, we ended up analyzing around 41,727 speech acts that are most related to the deliberation session. Automated content analysis methods have been used in a variety of studies in recent years (Grimmer and Stewart, 2013; King, Pan and Roberts, 2013) and we hope to use this study as a demonstration of its usefulness to analyze political deliberation.

7. RESULTS

Basic statistics. Deliberation happened during the small group discussion and lasted for two days in the Tamale DP and the California DP. Not every proposal in the briefing materials was discussed but most were covered in the small group discussion. The basic statistics is in Table 1.

Statistics (Table 1) on the number of speech acts and the number of proposals discussed show that Californians had a more extensive deliberation on each proposal than the Tamale participants since the Californians discussed more on each proposal than the Tamale did. However, when counting the total number of speech acts that are related to the proposals, the Tamale group showed a much higher proportion of related speech acts than the Californian group. A related speech act means that the speaker talks directly about the proposal rather than other things that have very loose relationship with the proposal. This indicates that deliberation in the California DP is more likely to be off the topic than in the Tamale DP. Examining upon

those off-topics situations, we found that these usually happened when one speaker began to deviate from the main proposal and the other speakers just discussed what this speaker said.

Figure 1 shows another interesting aspect of the nature of speech acts in both groups: types of the speech acts the two groups used. It is apparent that speech acts concentrated on “opinion” in the Tamale deliberation, indicating that the Tamale participants spent most of the time expressing their views rather than interacting with each other. Conversely, speech acts in the California DP are more diverse. Particularly, over 70% is a “response” to another.

The above basic statistics depict a picture of the Tamale deliberation as more targeted but less interactive and the California deliberation as less targeted but more interactive.

Standard DQI analyses. To measure the level of reasoning of deliberation, this paper draws upon level of justification suggested by the DQI. Table 2 illustrates the percentage of each level of justification in the Tamale deliberation and in the California deliberation. In the Tamale deliberation, among all the speech acts that are about opinion expression, the percentage of speech acts that do not use any reason is 9.90% while in the California deliberation is 33.70%. This contrast indicates that the Californians expressed many more opinions without justification.

A further examination of the types of reasons used (Figure 2) reveals that the Tamale participants tended to raise conditions and suggestions to modify proposals as their reasoning. These types of reasons accounted for 35.93% of their total number of opinions that used reasons. For instance, on the proposal of “whether the assembly should encourage and also train people in Tamale to practice backyard poultry farming,” one participant’s opinion is: *“if we get agric extension officers to guide us keep this animals we can get the full benefit of keeping animals. But if they don’t come to guide us on how to keep these animals, I don’t think any benefit can be obtained. The benefit for keeping animals depends on how well you feed them and also how well*

you keep their environment clean.” This participant raised “guidance” as an important condition to make the backyard poultry farming effective.

Therefore, using the level of justification in the standard DQI as the indicator to measure reasoning in deliberation, we found that the Tamale participants exerted more reasoning and more sophisticated reasoning than the Californian participants when they expressed their opinions. Nevertheless, as mentioned in the theoretical foundation section, level of reasoning is not just about using reasons while expressing oneself, but also about responding to others’ arguments using reasons. Therefore, the next part captures this communicative reasoning.

Revised DQI analysis. As introduced in the methodology and data section, each speech act is categorized into opinion, inquiry and response to opinion/inquiry. To examine the “substantive response” side of reasoning, we coded each response into whether the response is simple or substantive. Table 3 compares this communicative aspect of reasoning between the Tamale and the Californian participants.

First, among all the response to opinions/inquiries, the percentage of substantive responses in the Tamale deliberation is much higher than that in the California deliberation. This indicates that when responding to other speakers’ arguments, Tamale participants tended to apply more reasoning or provide more information than the California participants did. Nevertheless, it is also necessary to take into consideration the total number of responses that occurred during the Tamale and the California deliberation. During the Tamale deliberation, as shown in figure 1, responses only accounted for 10.11% of the total speech acts. In contrast, responses accounted for 72.05% of the total speech acts in the California deliberation.

The revised DQI proffers a more nuanced picture of the level of reasoning during deliberation. One side of the picture is that the Californians responded to each other much more

frequently than the Tamale participants. Yet, the other side of the picture is Californian participants uses much less reasoning when they responded to each other. The essence of deliberation, as stressed by Habermas (1984), is “communicative rationality,” which means that speakers exchange opinions based on mutual understanding and justification. This essence regards deliberation as a combination of communication and rationality. Therefore, communicative rationality differs from merely justifying one’s own opinions because it values the extensive exchange of opinions among speakers. It also differs from simple communication because it requires the use of reasoning when exchanging opinions. As is shown, the analyses from both the standard and the revised DQI demonstrate that the Tamale people, though limited in formal education and poor in socioeconomic statuses, can deliberate.

Yet, if we only use the level of reasoning indicator in the standard DQI - the level of justification, we would think that the quality of reasoning of deliberation among the Tamale people is better than the Californians’. What the revised DQI informs us is that if we consider communicative rationality as a crucial criterion to evaluate the reasoning quality of deliberation, it is hard to make a quick judgement on whether the Californian or the Tamale people deliberate more rationally since the Californians performed better on the interaction side while the Tamale people performed better on the reasoning side. Nonetheless, their utilization of reasoning during deliberation proves strongly that it is not always the case, as contended by the skeptics, that the mass public who are poor and lack education cannot deliberate. Given good conditions of balanced information material about the proposals and a moderator who coordinates and ensures that everyone has the equal opportunity to state their opinions, people who have limited level of formal education and live in challenging socioeconomic conditions can develop the cognitive ability to reason about public affairs.

Robust check. To strengthen the above findings, this study utilized the automated content analysis method to code all the 15 small group discussions in the Tamale DP and the 25 small group discussions in the California DP. Table 4 and Table 5 compare the proportion of different levels of reasoning between the Californian and the Tamale DP. We found that overall, results from the manually coding method still hold when extended to automated analysis on all the transcripts.

8. DISCUSSION AND CONCLUSION

This paper offers counter-evidence to the prevailing skepticism that ordinary citizens, especially those with limited level of formal education and living conditions, cannot reason about politics. Deliberative democracy can be applied successfully in very poor, developing countries. It also challenges current theories about the relationship between level of education (socioeconomic status) and the ability to deliberate, which unconditionally believes a positive relationship between the two. Methodologically, we point out the importance of understanding communicative reasoning in addition to DQI. We also showed how we can automate the process of analyzing large-scale transcripts. Through providing the first systematic evidence to explore the quality of deliberation particularly the reasoning aspect of deliberation in a developing city, we demonstrate that under appropriate democratic design, people who lack formal education and live in challenged conditions can reason about public affairs in a substantive manner and can apply sophisticated reasoning when they analyze the public issues that matter to them.

The results might be surprising at first sight, yet, the data is illuminating. A key factor driving the quality of deliberation among Tamale participants is the institutional design which empowers populations which engages their capacity to deliberate. Deliberative Poll is one

example of an effective democratic design to consult the public and to nurture thoughtful opinions. Our findings echo with the literature on how deliberative process fosters increased political knowledge, efficacy, and civic participation (Fishkin and Luskin, 2005; Eggins et al., 2007; Fishkin, 2009; Esterling, Neblo and Lazer, 2011; Boulianne, 2011; Knobloch and Gastil, 2015). Specifically, there are several aspects in this institutional design that help citizens in developing countries nurture the ability to deliberate.

First, instead of majority public consultation practices under which only a self-selected sample of citizens participate, in the Tamale Deliberative Poll, participants were selected based on a scientific random sampling method to ensure the diversity and the representativeness of the population. This random sampling method allows people to hear diverse voices to expand their understanding about the issues, which helps them form more thoughtful opinions.

Second, the balanced information material (in the video format) provided before deliberation has a substantial impact on mitigating the knowledge gap on public affairs. To help participants weigh the merits of different arguments, they were provided with information that describe the pros and cons of each proposal. In the Tamale case, considering many participants are illiterate, the information briefing was provided in the format of a short video talking through each proposal's pros and cons. These materials allow participants to have a comprehensive understanding of the issue. In fact, we see that there is a significant knowledge gain among participants in their knowledge about the city and public issues comparing their pre and post deliberation surveys¹⁴.

Third, the role of the moderator in the Deliberative Poll design is intended to ensure equality. Scholars who are skeptical about the equality of deliberation point out the problem of really achieving inclusion in the deliberation. Some will be intimidated to participate. Others will

talk too much. Without a moderator, the more knowledgeable and the more powerful people will dominate the deliberation, thus undermining the opportunity of others to deliberate. In DP, each small group discussion is moderated to guarantee that everyone can speak out. This design helps people with little education and socioeconomic resources practice their speaking skills to excel at deliberation.

Thus, the Deliberative Poll is one example of an institutional design that provides participants good conditions to have thoughtful interactions about public affairs. It offers the promise that people with limited level of education and socioeconomic resources can deliberate about public issues when given good conditions. Under good conditions, they can reason about public affairs as well as or even better than people who are more educated in the developed nations.

Results from the paper demonstrate that deliberation is not an ability that only experts or people in developed nations can own. When empowered by domain knowledge, balanced information, and equal opportunities, people who are disadvantaged in education and social position can engage in impressively sound and substantive exchanges. These good conditions, which tap and nurture people's capacity to deliberate, are crucial to achieve the "well-being freedom (Sen 1993)" for populations in the developing nations.

Studies of deliberation in non-ideal or non-western context comprise an ongoing research trajectory. Our paper contributes to it in several aspects. First, we show the viability of deliberation with a random sample of the population to provide thoughtful inputs into public policymaking in developing countries. Instead of just letting experts or stake-holders make decisions for distributing public resources or instead of consulting self-selected and mobilized groups, we show that it is possible to consult the people themselves in a representative and

thoughtful way. As long as the sample is representative of the population, we can get unbiased voices in microcosm rather than voices from the powerful or the mobilized. Secondly, we demonstrate that inputs from the people can be of high quality as shown by the Discourse Quality Index, both in its widely used version and in our revised version. By examining the actual reasoning people used in the deliberative process, we found that people have the capacity to weigh tradeoffs with complex public policy problems. Their level of reasoning is comparable to those from populations in the most highly developed countries. In this comparison we focus on the crucial element of discourse quality—whether they offer justifications for their positions. Rather than just looking at the conclusions of the deliberations, we have examined the discussions themselves to classify the reasoning and level of discourse in order to establish what is really going on when the people gather to consider the policy choices. Finally, we show how we can combine hand-coding and machine learning methods to systematically analyze a large quantity of deliberation transcripts which helps test the robustness of anecdotal evidence on a larger scale. The data show that the people can reason. They can reason together and they can weigh competing arguments and come to considered judgments about the policies they must live with.

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Table 1: % of Related Speech Acts

Group	Total Number of Proposals Discussed in the Train Dataset	Total number of Speech acts that are in the deliberation session	Total number of Speech acts that are related to the proposals	Proportion of relevant speech acts
Tamale	35	409	366	89.73%
California	14	2,648	1,514	60.81%

Figure 1: Composition of Speech Types Comparison

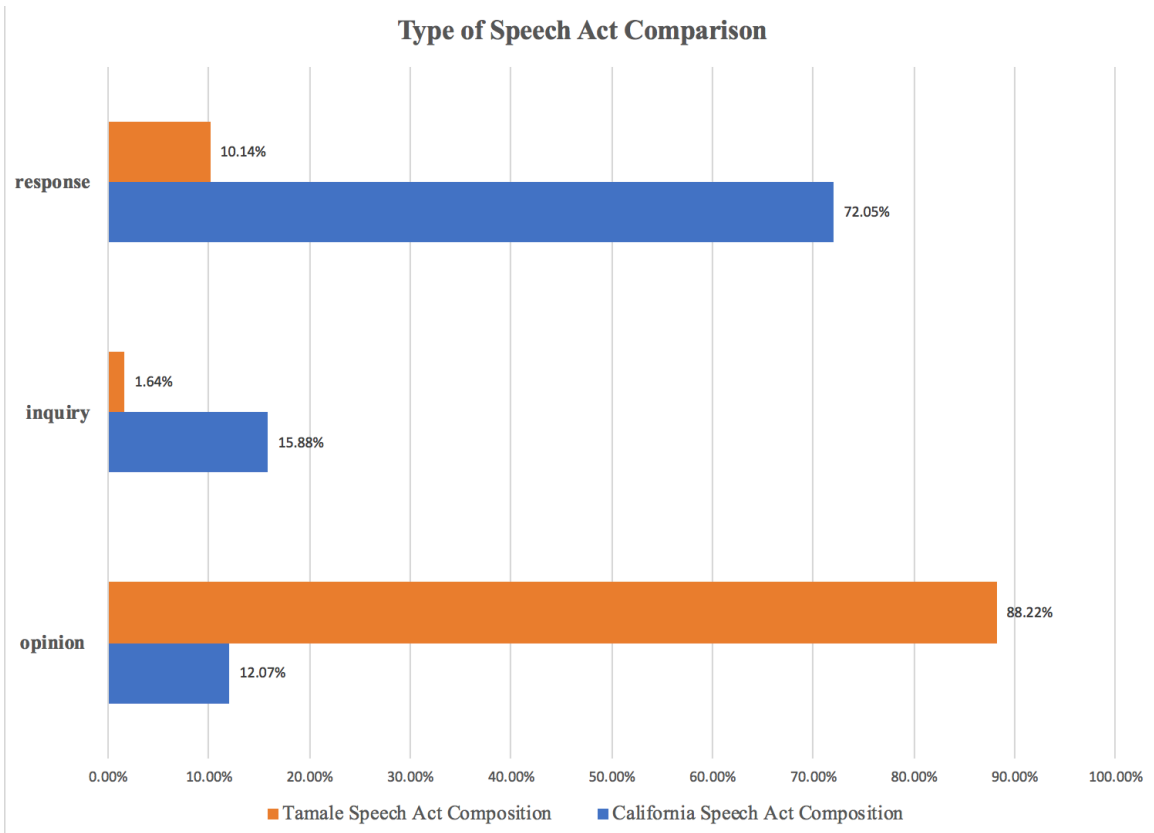


Table 2: All Opinions - Level of Justification (DQI)

Group/Level of Reasoning	Tamale (%)	California (%)
1 (no reasoning)	9.90%	33.70%
2 (reasoning)	90.09%	66.30%

Figure 2: Types of Reasoning Used Comparisons

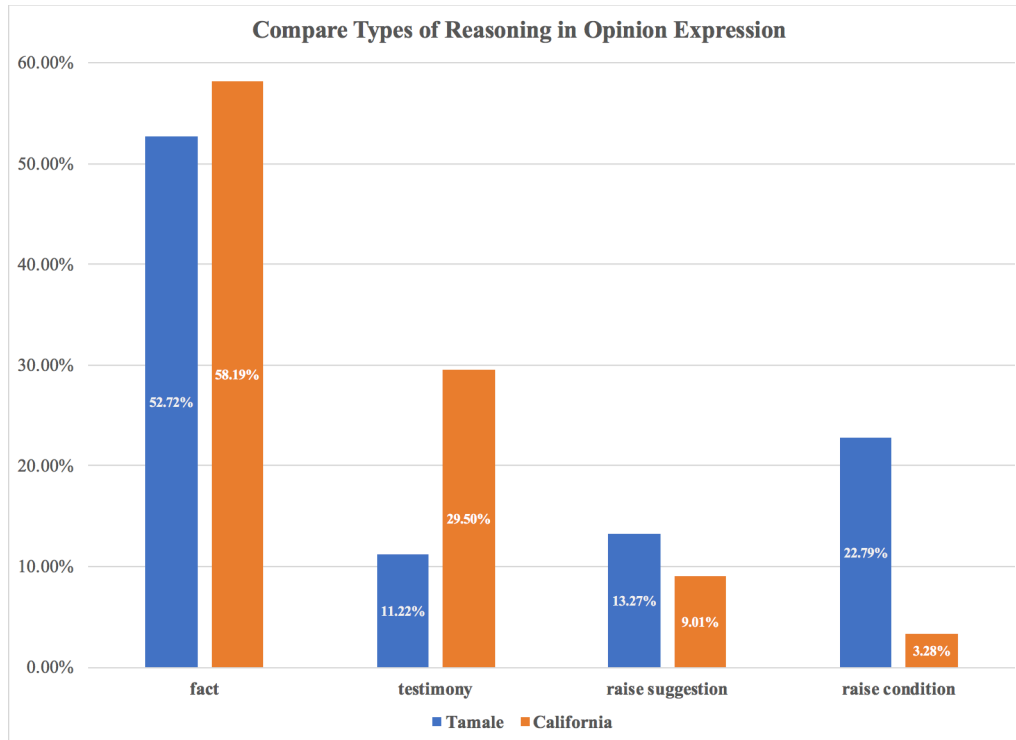


Table 3: Responses to Opinions/Inquiries – Level of Reasoning

Level of Reasoning	Tamale (% of reasoning)	California (% of reasoning)
Simple response	2.70%	44.17%
Substantive response	97.30%	55.83%
Total % of response speech type	9.86%	72.05%

Computational Result

Table 4: All Opinions - Level of Justification (Standard DQI)

Group/Level of Reasoning	Tamale (%)	California (%)
1 (no reasoning)	5.86%	24.45%
2 (reasoning)	94.14%	75.56%

Table 5: All Responses - Level of Reasoning (Revised DQI)

Group/Level of Reasoning	Tamale (%)	California (%)
1 (simple response)	3.57%	51.25%
2 (substantive response)	96.43%	48.85%

Appendix I: Coding Scheme and Examples

Coding Variable	Value
Related to the Proposal	Is the speech act related/relevant to the proposal or not (1, 0)
Type of Speech acts	Opinion; Inquiry; Response to opinion/inquiry
Opinion – Level of Justification (DQI)	No justification at all; <i>(e.g.: “That proposal, A2B, it’s going to lead to confusion.”)</i> Justification with an illustration or testimony; <i>(e.g.: “Susu is very important. I did savings with a “susu” company till I got money to pay for my child fees from the secondary school. So I think it’s important and very good for me.”)</i> Justification with reason <i>(e.g.: “Well, and I think the second point of the con is worth considering because you’re getting a quid pro quo situation if somebody puts something in the initiative, and then there’s some incentive.”)</i>
Types of Reason	Fact <i>(e.g.: “I don’t think it’s important. This is because, laws in Ghana works only for a while.”)</i> Testimony/Norm <i>(e.g.: “Susu is very important. I did savings with a “susu” company till I got money to pay for my child fees from the secondary school. So I think it’s important and very good for me.”)</i> Raising conditions/assumptions for the current proposal to work <i>(e.g.: “If the assembly teaches us how to do this backyard farming, they should also teach us how to use good or clean water to water the vegetables so that the crops will grow well and healthy. It is not good to water crops with dirty or untreated water but people are likely to use dirty water if they don’t know the effect of that.”)</i> Raising suggestions <i>(e.g.: “I think the assembly should setup groups in areas so that they can meet them and give them this information rather than try to use mobile phones.”)</i>
Response - Level of Reasoning	Simple Substantive.

Appendix II: Inter-Coder Reliability Summary

Coding Variables (unit: speech act)	kripp.alpha
Related to proposal	1
Speech Type	0.76
Level of Justification	0.77

Simple or Substantive Response	0.89
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¹ For details of the index and the data for all countries, see: <http://hdr.undp.org/en/composite/HDI>

² ibid

³ https://en.wikipedia.org/wiki/Tamale_Ghana

⁴ U.S. Global Development Lab (2015): Deliberative Polling in Ghana: First Deliberative Poll in Tamale, Ghana. United States Agency for International Development. <https://cdd.stanford.edu/2015/a-report-on-the-first-deliberative-poll-in-tamale-ghana/>

⁵ For details of random sampling of participants, see: <https://cdd.stanford.edu/2015/a-report-on-the-first-deliberative-poll-in-tamale-ghana/>

⁶ UN HABITAT Regional Technical Cooperation Division (2009): Ghana: Tamale City Profile <https://www.google.co.nz/url?sa=t&rct=j&q=&esrc=s&source=web&cd=3&ved=0ahUKEwifoZit8YnRAhVGJJQKHV19AXQQFggqMAI&url=http%3A%2F%2Fmirror.unhabitat.org%2Fpmss%2FgetElectronicVersion.aspx%3Fnr%3D2929%26alt%3D1&usg=AFQjCNFwGUN6EusOSXPhB6heBkJ60LmJvA&bvm=bv.142059868,d.dGo>

⁷ For details and reports of Deliberative Poll in the Tamale Metropolitan Area of Ghana, see: <http://cdd.stanford.edu/2015/deliberative-polling-in-the-tamale-metropolitan-area-of-ghana/>

⁸ For reports of Deliberative Polling in the Tamale Metropolitan Area of Ghana, see: <http://cdd.stanford.edu/2015/a-report-on-the-first-deliberative-poll-in-tamale-ghana/>.

⁹ <http://cdd.stanford.edu/mm/2015/01/gna-dp-useful.pdf>

¹⁰ For reports of Deliberative Polling in the Tamale Metropolitan Area of Ghana, see: <http://cdd.stanford.edu/2015/a-report-on-the-first-deliberative-poll-in-tamale-ghana/>

¹¹ For details and reports of Deliberative Poll in California, see: <http://cdd.stanford.edu/2011/by-the-people-whats-next-california/>

¹² The amount of hand-coded (training) samples is decided by ensuring that each category that is hand-coded should have at least 30 observations in order to use the Hopkins-King algorithm.

¹³ See: King, G., Pan, J., & Roberts, M. E. (2013). How censorship in China allows government criticism but silences collective expression. *American Political Science Review*, 107(2), 326-343, Appendix B; see: Hopkins, D. J., & King, G. (2010). A method of automated nonparametric content analysis for social science. *American Journal of Political Science*, 54(1), 229-247.

¹⁴ See table 3, in the report on the First Deliberative Poll in Tamale, Ghana: <https://cdd.stanford.edu/2015/a-report-on-the-first-deliberative-poll-in-tamale-ghana/>