RADIO AND SOCIAL MEDIA IN GHANA ASSESSMENT REPORT

JULY 2023

Cover Photo: An ISSER enumerator in a focus group discussion with respondents in Nalerigu

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GLOSSARY OF TERMS AND ACRONYMS

CAPI	Computer-Assisted Personal Interviews
CDD-Ghana	Ghana Centre for Democratic Development
CSO	Civil Society Organization
FGD	Focus Group Discussion
GoG	Government of Ghana
ICT	Information and Communication Technology
ISSER	Institute of Statistical, Social and Economic Research
JHS	Junior High School
KII	Key Informant Interview
KOICA	Korea International Cooperation Agency
MEL	Monitoring, Evaluation and Learning
MFWA	Media Foundation for West Africa
MP	Member of Parliament
NCA	National Communications Authority
NCCE	National Commission for Civic Education
NDC	National Democratic Congress
NGO	Non-Governmental Organization
NPP	New Patriotic Party
SHS	Senior High School
SSS	Senior Secondary School
UNDP	United Nations Development Programme
UNICEF	United Nations International Children's Emergency Fund
USG	United States Government
VHF	Very High Frequency

ACKNOWLEDGEMENTS

EXECUTIVE SUMMARY

Ghana has experienced remarkable growth in its media sector, with radio and social media platforms playing a pivotal role in shaping public discourse and facilitating the exchange of information. However, with increasing concerns being raised about the ability of radio and social media outlets to spread misinformation, it is important to understand the dynamics of these communication channels, particularly considering the challenges posed by misinformation and disinformation, the rise of violent extremism in the Sahel region, and the upcoming local and national elections in Ghana. "Misinformation" refers to false information that is shared unwittingly, and "disinformation" refers to false information that is shared with the intention of misleading or deceiving an audience (Fallis, 2014). The study was guided by six broad research objectives, to undertake:

- A mapping of radio stations in Ghana;
- An assessment of the extent of misinformation and disinformation through radio and social media in the country;
- An assessment of the gaps and vulnerabilities within radio stations in the study areas that could contribute to electoral and political violence;
- An evaluation of the strengths and resilience among radio stations to mitigate extremist exploitation and violence;
- An examination of the extent to which targeted radio stations play a role in the promotion of democratic accountability within their communities; and
- The provision of recommendations within the framework of ongoing USAID programs in the study areas.

This report draws on published studies and other secondary sources, and primary data collected from a mixed-methods study, to shed light on the role of radio and social media in Ghana's information ecosystem. Specifically, the study used secondary sources to conduct a media scan to identify the prevalence of misinformation across legacy (radio, television, and newspaper) and social media platforms. The quantitative data were collected from 1,206 radio and social media respondents from eight regions in Ghana (Greater Accra, Bono, Bono East, Savannah, Northern, Northeast, Upper East, and Upper West), and 200 radio station manager respondents from 11 regions in Ghana (Greater Accra, Bono, Bono East, Savannah, Northern, Northeast, Upper East, Upper West, Ashanti, Ahafo, and Eastern). The quantitative data were complemented with eight focus group discussions and 51 key informant interviews from representatives of relevant institutions and agencies, political party officials, and local leaders.

Data from the media scan suggests that over a quarter (27 percent) of cases of misinformation were related to political issues. While this is serious, it also indicates that even though discussions about misinformation tend to largely dwell on issues relating to politically sensitive matters or issues that have the potential to undermine democracy, misinformation spans other domains including news segments on entertainment (25 percent), social issues (16 percent), and religion (12 percent). Misinformation on topics bordering on conflict-related issues constituted only 5 percent of the media scan data. This pattern was largely reflected in both the quantitative and qualitative data.

Respondents consumed information from a wide range of sources, including legacy media, family and friends, and community sources, including information centers, as well as information disseminated at funeral grounds, mosques, and chiefs' palaces.

The sources of information are all susceptible to spreading misinformation to varying degrees. While some radio station managers conceded that they had in the past been implicated in the spread of false information, they had been quick to withdraw the news item when they realized their error. However, institutional weaknesses such as inadequate internal editorial controls, poor remuneration of reporters, lack of enforcement by the industry regulator, and intense competition between radio stations driven by what one key informant described as "scoop culture" was a key vulnerability that could fuel the spread of misinformation and potentially trigger conflict in volatile social or political situations.

Regarding the strengths or resiliencies of radio stations to mitigate extremist exploitation and violence, the study identifies various institutions that are responsible for media regulations to uphold technical and ethical standards of the media ecosystem, protect freedom of expression, and regulate the media markets and ensure media pluralism, such as the National Communications Authority (NCA) and the National Media Commission. Moreover, there is the emergence of fact check platforms within Ghana's media ecosystem. Currently, at least three of these exist within Ghana's media landscape. Furthermore, internal editorial practices of radio stations serve as a self-corrective mechanism for the early detection of misinformation or swift retraction of erroneous reports. This helps radio stations guard against creating and/or exacerbating political, electoral, or ethnic violence. Community open forums organized by radio stations to share and receive information are another vehicle for discussion of pending issues that might be emerging in communities. These outdoor events and community outreach programs are done in a transparent manner, thereby helping to avert possible problems with creating or exacerbating conflict.

This report concludes with a list of short-, medium-, and long-term recommendations to address the identified risks of misinformation and to bolster the resiliency inherent in media houses and communities to combat the spread of misinformation and disinformation and their harmful effects. This includes recommendations that in the short term, USAID should collaborate with stakeholders like faith-based organizations, civil society organizations, and traditional authorities. Also in the short term, nonaligned radio stations should lobby and train owners, staff, and management of aligned radio stations using workshops to ensure that radio stations maintain neutral content void of political, ethnic, and chieftaincy-related issues during certain mainstream programs and times such as primetime news, coverage of political and civic programs, and advertisements.

In the medium term, since there are no laws or regulations for the verification of misinformation and disinformation, we recommend that the aforementioned stakeholders advocate for new regulations for the verification of information by radio stations, journalists, and the public, which would be enforced by both the National Media Commission and the NCA. Additionally, regulatory groups, traditional leaders, and other stakeholders should provide scholarships to train outstanding journalists for further qualification in journalism, management, and

credibility skills. Finally, in the long term, we propose that the Parliament of Ghana sees to the promulgation and implementation of a media law nationally that takes into account social media trends and is flexible enough to take future technical advancement in relation to the media into consideration.

INTRODUCTION AND BACKGROUND

This report provides an in-depth analysis of the radio and social media landscape in Northern Ghana and its collective role in spreading or combating the spread of disinformation and misinformation. The country has experienced remarkable growth recently in its media sector, with radio and social media platforms playing a pivotal role in shaping public discourse and facilitating the exchange of information. Understanding the dynamics of these communication channels is crucial, particularly considering the challenges posed by misinformation and disinformation, the rise of violent extremism in the Sahel region, and the upcoming local and national elections in Ghana. This report draws on published studies, other secondary sources, and primary data from a mixed-methods study to shed light on the role of radio and social media in Ghana.

Subsequent sections of this report delve deeper into the aspects of radio and social media in Ghana. They examine their reach, audience engagement, content dissemination practices, and the implications for governance, democracy, and development. By analyzing existing research, exploring empirical evidence, and providing practical recommendations, this report aims to contribute to the understanding of radio and social media in Ghana and to inform evidence-based decision-making for sustainable development and democratic governance.

INSIGHTS FROM THE LITERATURE

Radio stations are part of the larger media ecosystem traditionally comprising other legacy media like newspapers and television. With the emergence of digital media and social media platforms, radio stations are threatened with newer forms of vulnerabilities related to their role in society in relation of the new competitor, social media. Technology-driven media ecosystems are changing the ways in which legacy media operate. For example, information originating from social media often finds its way onto legacy media outlets, and most legacy media outlets now maintain heavy social media presence in an attempt to retain or build their audience. However, individual media consumption behavior is shaped by a variety of factors, including class, gender, location, and generation (Gadjanova, Lynch, & Saibu, 2022).

Misinformation refers to false information that is shared unwittingly, and disinformation refers to false information that is shared with the intension of misleading or deceiving an audience (Fallis, 2014). Misinformation, in Ghana and other countries, is neither new nor exceptional in social life. While appearing in different guises at different historical periods, the manipulation of information has played an important role in social relations and the political sphere. Historically, mythologies have been used as powerful instruments in nation-building as statesmen sought to construct an imagined past and heritage that could win the allegiance of the people living within a given territory (Fuller, 2008). In the social realm, communicative forms such as rumors or folktale, even when containing elements of untruths, capture and transmit shared meanings, values, or social norms (Donovan 2007). However, an increasing number of scholars and media practitioners are warning that misinformation poses a unique threat to democratic politics and could even provide tacit justification for violent conflicts, including unjust wars (Calabrese, 2005).

In Ghana, recent reports have also cautioned that falsehoods spread via radio and social media have the potential to harm public trust in democratic

institutions, polarizing society and harming the economy. A study by the Media Foundation for West Africa (MFWA) found that misinformation and disinformation on social media in Ghana increased during the 2020 general elections. The study analyzed over 500 social media posts and found that nearly 40 percent contained false or misleading information (MFWA, 2021). Similarly, a study by the Ghana Centre for Democratic Development (CDD-Ghana) found that radio stations in Ghana frequently broadcasted inaccurate information during the 2020 election period. That study found that political actors and their supporters often used radio stations to spread false information, which has the potential to incite violence (CDD-Ghana, 2020). However, efforts are being made on the part of government, civil society, and industry players to address the problem through media literacy programs, development of professional ethics and standards, and regulatory frameworks. These efforts also include the establishment of an investigative journalism fund to look into ways of improving journalistic professionalism, addressing the issue of political parallelism, and ensuring favorable state interventions (Asomah, 2022; Diedong, 2017).

In many countries, concerns about the growth of polarizing and false media content and the potential for this content to exacerbate social conflict has grown dramatically in recent years. Ghana is no exception, where misinformation and polarizing content have been blamed for sectarian violence in recent years, particularly in the northern part of the country (Godwill, 2023; Hassan, 2022).

While rapidly expanding access to social media and the prevalence of misinformation and polarizing content on social media platforms has garnered a great deal of attention from scholars and policymakers, social media is not necessarily the most important source of exposure. In Ghana, citizens express relatively low levels of trust in social media relative to more traditional media such as print and broadcast news, and radio is the primary means by which citizens receive news (Gadjanova, Lynch, & Saibu, 2022). Greater public trust and consumption suggest that misinformation and polarizing content disseminated through more traditional channels may cause outsized harm, even as dissemination on these channels is less well understood.

According to the Media Foundation for West Africa, daily monitoring of content across multiple media organizations and platforms over a 12-month period revealed that the most harmful content, including hate speech and abusive language, comes from radio programs, with commentators featured on political talk shows and panels being the primary culprits (Media Foundation for West Africa, 2021a; Media Foundation for West Africa, 2021b). These findings are reflected on the websites of Ghana's premiere independent fact-checking organizations—Ghana Fact and Fact-Check Ghana—where a large volume of fact-checked articles focus on the veracity of claims made by politicians about their party's record or the record of an opposing party, which receive wide coverage across print and broadcast media.

Despite the outsized importance of traditional media outlets in disseminating information, we know very little about how media suppliers decide which content to publish. While research from other contexts has shown how the nature of ownership (Grossman, Magalit, & Mitts, 2020), state advertising (Szeidl & Szucs, 2021), and government contracts (Adiguzel, 2023) impact the nature of media

coverage, existing work has not directly studied the decision-making process media outlets face when making programming decisions.

In the Ghanaian context, radio stations must assess trade-offs associated with broadcasting different content, including the ability of content to appeal to listeners, advertisers, and owners, and the potential for this programming to spread misinformation or cause polarization. However, we understand very little about how stations view these choices. To generate evidence on these important considerations, we conducted an assessment of radio and social media in Ghana.

ASSESSMENT OBJECTIVES AND RESEARCH QUESTIONS

The USAID/Ghana Monitoring, Evaluation, and Learning (MEL) platform commissioned the Institute of Statistical, Social and Economic Research (ISSER) and DevLab to assess the media sector in Ghana. The purpose of the assessment is to provide USAID and its partners with a comprehensive understanding of the current role of radio and social media in the dissemination of misinformation and disinformation and in violent extremist activity in Ghana's communities, and to make recommendations for USAID Mission programming that supports efforts to achieve a more peaceful, democratic, productive, and self-reliant Ghana.

The assessment focused on the following six research objectives and questions:

1. **Mapping of radio stations in Ghana**
   - What radio stations exist in the regions of Ghana, and what is their estimated number of listeners and general area of coverage?
   - What are the stations' capacity, orientation/affiliation to groups (e.g., independent, state-supported, religious, or political affiliation), and type of programming (programming grid if available)?
   - What, if any, are the additional radio stations outside the five regions of Northern Ghana that should be included in this mapping that have historically experienced chieftaincy, land, ethnic, or elections-related violence?

2. **Assessment of misinformation and disinformation through radio and social media**
   - To what extent do radio stations and social media contribute to the spread of misinformation and disinformation?
   - What are the media consumption habits, vulnerabilities, and reactions of listeners of radio stations and users of social media?
   - What are listeners' perceptions of the connection between false and misleading information and the escalation of electoral or extremist violence?

3. **Potential gaps and vulnerabilities**
   - Within the selected target radio stations, what are the potential gaps or vulnerabilities in relation to misinformation, disinformation, and the influence of violent extremism?
   - What factors, including gaps, vulnerabilities, or other elements, could contribute to electoral/political or ethnic violence?

4. **Strengths or resilience among radio stations to mitigate extremist exploitation and violence**

- What strengths or resiliencies are present among the sampled radio stations that could help deter potential exploitation by extremist groups?
- What mechanisms are in place to ensure that the content disseminated by the target stations does not create or exacerbate political/electoral or ethnic violence?

5. Democratic accountability
- What role do the targeted radio stations play in promoting democratic accountability within their communities? Specifically, to what extent do they provide quality information on government services to citizens?
- How effectively do they empower citizens to hold local authorities accountable for public service delivery?
- To what extent does the radio station itself take the lead in holding duty-bearers accountable?

6. Recommendations
- Within the existing mechanisms of the U.S. government (USG), what initiatives or opportunities could be supported to address the identified vulnerabilities of radio stations to extremist influence?
- What initiatives or opportunities could be supported to enhance the capacity of radio stations in preventing or mitigating political/electoral or ethnic-based violence?
- What initiatives or opportunities could be supported to prevent or mitigate the negative impacts of misinformation and disinformation spread through radio stations and social media?
- How can initiatives or opportunities be supported for radio stations to promote greater social cohesion within the communities they serve?

METHODOLOGY

The assessment examined the questions above using the transformative concurrent triangulation mixed-methods approach.[1] This approach involves the simultaneous collection and analysis of primary data (both quantitative and qualitative), after which the results from both methods were compared for final interpretation. The quantitative arm of the research includes two surveys, one for radio listeners using a structured questionnaire administered through Computer-Assisted Personal Interviews (CAPI) and the other for radio station managers using Qualtrics. The qualitative component involved desk review, media scanning, focus group discussions (FGDs) with radio listeners, and key informant interviews (KIIs) with stakeholders within the media space in Ghana. The study team analyzed the qualitative data using thematic analysis and the quantitative data using descriptive analysis.

RECONNAISSANCE VISITS, TRAINING OF ENUMERATORS, AND OTHER PREPARATORY ACTIVITIES

RECONNAISSANCE SURVEY

A three-day recognizance survey, which took place in the Greater Accra and Northern Regions, preceded the finalization of study sites. The survey team visited two districts/municipalities in the Greater Accra Region (Accra Metropolitan and Ga East) and three districts/municipalities in the Northern

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[1] Refer to Creswell, Plano Clark, Gutmann, & Hanson (2003). "Advanced mixed methods research designs"
https://www.sagepub.com/sites/default/files/upm-binaries/19291_Chapter_7.pdf

Region (Karaga, Tolon, and Mion). The team visited some of the prospective communities and earmarked interest groups of the study (radio stations and their management, community opinion leaders/groups, media professional institutions/bodies, district/municipal assemblies, etc.), and some potential enumerators.

TRAINING OF ENUMERATORS AND PILOT TESTING OF INSTRUMENTS

Training sessions were conducted separately for enumerators involved in the survey and the qualitative data collection because of variations in sampling methods, data collection tools, approaches, and languages used. Survey enumerators received on-site training in paper questionnaire administration and CAPI to ensure high data collection standards. The training covered objectives, tool familiarity, translation (for survey enumerators), and role-playing exercises. The training for the qualitative data collection team also began with a review of the qualitative data collection tool where each question item was examined for correct sequencing and grammar of the questions and appropriateness, after which the tool was updated. There was also a practice role-play session by the team of data collectors using the updated qualitative tool. The training additionally covered the use of voice recorders to be used during key informants' interviews and focus group discussion sessions. The team piloted data collection tools in Nima and Osu in Accra, and incorporated feedback. Pretesting involved respondents from similar communities to assess the data collection process accurately. In total, the team trained 46 enumerators for the survey and ten people for the qualitative study.

ETHICAL CONSIDERATIONS

Ethical review approval was obtained from the Ethical Committee for the Humanities at the College of Humanities, University of Ghana, Legon. This enhances the quality of the work and ensures no harm is done to the respondents. The application included consent by the respondents to participate in the research, which covered general information about the study, benefits/risks, confidentiality, compensation, withdrawal from the study, and persons to contact with questions regarding the study. The application additionally included a form that respondents were required to sign/thumbprint for consent, the languages to be used in the study, the methodology, the type of respondents and sampling processes, and the venues for the interviews. The data collection instruments were also submitted, as well as the funding agency and budget. A provisional approval for the study was given on April 27, 2023, which facilitated commencing aspects of the study such as interviewer recruitment and training. A final ethics approval and a letter communicating it was dated May 3, 2023, with a protocol number Ethical Committee for the Humanities 183/22-23 (see Appendix 4).

SAMPLING, DATA COLLECTION METHODS, AND FIELD PROTOCOLS

DESK REVIEW, MAPPING OF RADIO STATIONS, AND MEDIA SCANNING

The desk review focused on a review of both academic and gray literature on topical areas of the project, including misinformation and disinformation in the media, violent extremist activity, election violence, and strategies to mitigate these issues. The mapping of radio stations in the catchment areas of the study commenced with the list of radio stations itemized by the National Media Commission. In addition to mapping radio stations, the team sought secondary sources of information using media scanning, which entails perusing public

information in print and digital media by constantly searching for mentions across channels the audience might engage with and finding information on dis/misinformation, their sources, and mechanisms to correct this type of miscommunication.[2] These two approaches form part of the qualitative study.

The media scan used content analysis as a systematic methodological approach to identify instances of misinformation and disinformation prevalent on radio stations and social media platforms in Ghana between 2021 and April 2023. The first stage of the multistage sampling approach centered on scrutinizing the content found on widely recognized social media platforms and radio stations that prominently appear in the Google search engine results when individuals seek popular channels for disseminating information to the public. Notable examples of these channels include Pinax TV, Onua YouTube, TV3 GH (YouTube), List Lovers (YouTube), My Joy TV (YouTube), alongside several other prominent YouTube channels and live-streaming radio stations (exemplifying media convergence) on platforms such as Facebook, Twitter, YouTube, and even TikTok. At the second sampling stage, the contents from these platforms were subjected to random selection and analyzed to identify information with potential indicators of mis/disinformation.

SAMPLE SIZE AND SURVEY COMPLETED
The assessment team conducted a quantitative survey on listeners of radio and social media users in eight regions in Ghana, consisting of all five regions in northern Ghana, Greater Accra, Bono, and Bono East regions, to assess media consumption habits and preferences, content, credibility, effects of misinformation and disinformation on violence, and mechanism to mitigate these issues. A total of 1,206 individuals (see Exhibit 1) were interviewed within three weeks from May 2 to May 17, 2023. This number represents more than a 100 percent response rate, as the initially determined number of respondents for the survey was 1,201. All 1,206 respondents were selected from 48 communities across 32 districts from the eight regions through a systematic random sampling procedure, which was implemented at the community level. The procedure first involved determining the number of housing units in the community and dividing it by sample size allocated to the community to arrive at a sampling interval.

Using the sampling interval, enumerators then interviewed one person from each selected housing unit until the sample size was exhausted. Of the 48 communities, 21 were largely known to be hotspots for either land, chieftaincy, political, tribal, or electoral violence, while the remaining 27 had very few or no officially recorded history of any of these types of violence (non-hotspot areas). The allocated numbers of respondents to each region were equally divided among the number of communities in that region, and the allocation to the region was partly informed by the population distribution across the regions and by giving relatively more attention to USAID-focused regions. Details about how the sampling procedure was operationalized, and allocation to each selected community, can be found in Appendix 3.
The survey questionnaires were administered using the CAPI system, where the enumerators administered a face-to-face structured questionnaire displayed on a tablet and recorded the pre-coded responses displayed on the tablet. The data also include information on gender, age, hotspots, non-hotspots, and regional

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[2] https://www.cision.ca/resources/articles/what-is-media-monitoring-and-why-does-it-matter/

variables to assist with the disaggregation of the data for analysis (see Appendix 3 for the data collection survey instrument). The respondents were aged 18 years and above.

To gain further insights into dissemination of information via radio across Ghana, ISSER and DevLab surveyed radio station managers using Qualtrics to evaluate the practices, procedures, codes of ethics, and general standards considered or employed in the dissemination of information via radio. Two hundred radio stations across Ghana, which represents nearly half of the 413 stations registered with the National Communications Authority were surveyed. Given their distinctive nature and small number, the study team excluded campus and public radio stations, focusing only on commercial and community radio stations. Using the 2022 NCA list of all registered radio stations, the team sampled stations proportionally across regions. Because of the lower number of radio stations and the greater concern about polarizing content and conflict in Ghana's northern regions, the team over-sampled stations located in Ghana's northern districts. In some regions, the largest radio market (usually a large town or city) includes the vast majority of radio stations in the region. In such cases, the team limited the total number of stations that could come from those large markets. This ensures that the sample includes broad geographic coverage across each region.

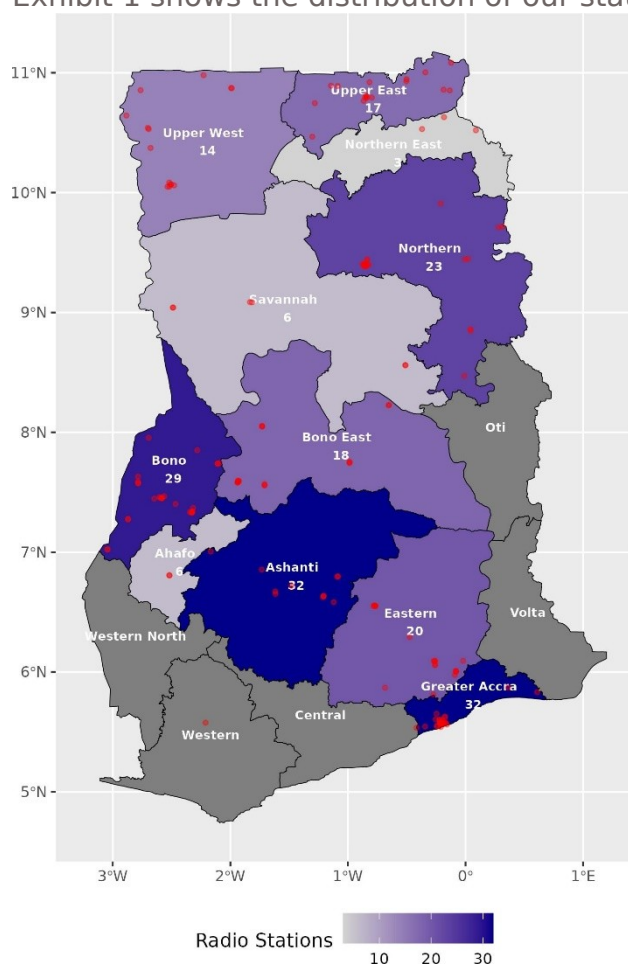Exhibit 1 shows the distribution of our stations across regions.

Figure 1: Radio stations surveyed by Region (source: Ghana Radio Survey)

Note. Blue shading indicates the number of stations included in our sample and red dots indicate the coordinates of stations that were surveyed.

The survey instrument was administered by 24 ISSER enumerators between June 26 and July 7, 2023. The survey was taken by respondents in Qualtrics on tablets provided by the enumerators. The survey included modules on the size and finances of stations, the languages in which they broadcast, their ownership, and different factors affecting their management and programming decisions. Since the study was primarily focused on programming choices, the study team targeted general managers, program managers, and other senior personnel for interviews. The final sample size for analysis is 187 stations.[3] The team estimated the results for the conjoint survey experiment using Ordinary Least Squares and presented the results as marginal means calculated with the cregg R package (Leeper, Barnfield, & Leeper, 2018; Leeper, Hobolt, & Tilley 2020).

The qualitative data collection spanned two months (May 2 to June 27, 2023). Respondents were purposively selected. KIIs targeted community opinion leaders, radio station managers (both private and public), key staff of professional media bodies, and key officers of governmental agencies in information, media, and communication regulatory agencies. Additional respondents included an NGO leader and leaders of Ghana's two leading political parties, the National Patriotic Party (NPP) and the National Democratic Congress (NDC). Of 59 planned interviews, 51 key respondents were interviewed (see Exhibit 2). The eight non-respondents cited lack of institutional permission needed for outside interviews. The team also conducted eight FGDs, one per study region, for community members. On average, there were nine participants in each FGD, both male and female adults.

Exhibit 1. Data Collection – Completed Samples

RESEARCH METHODS AND PARTICIPANTS	COMPLETED SAMPLES
Quantitative survey respondents (Listeners)	1,206
Quantitative survey respondents (radio managers)	200
Focus group discussion	8
Media scanning	200
Key informant interviews	51
Desk review	30

Source: ISSER & DevLab, May 2023

QUALITATIVE DATA CAPTURE AND ANALYSIS

The team captured qualitative data using digital recorders. They then transcribed data verbatim and reviewed them using two groups comprising both the interviewers and researchers. Subsequently, two groups of multiple experts conducted thematic coding manually, after which there were discussions and

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[3] We removed 13 surveys that were provided by accountants, secretaries, and others who are unlikely to have detailed knowledge of their stations' programming decisions.

comparative analysis to ensure inter-coder agreement. Finally, both groups of researchers collectively conducted thematic analyses. Themes that highlighted the objectives and different broad areas of interest to the study were used as guideposts for the report. Where appropriate, this report uses verbatim quotations with partly concealed identifiers to support the thematic presentation of the findings.

QUANTITATIVE DATA MANAGEMENT AND ANALYSIS
The study team cleaned the quantitative data and validated them in real time during the period of data collection using the CAPI system. It analyzed the data using descriptive statistics.

The regional sample distribution and key demographic characteristics of the respondents from the quantitative survey are displayed in Table A1. The average household size is 7.2 and females are marginally more represented than males in households and at least one child under five years. Males however, accounted for about 57 percent of the sample due to the systematic random sample approach. Muslims, meanwhile, represent slightly more (49.3 percent) of the sample than Christians (46.5 percent) because of the distribution of the sample, which is primarily dominated by the five northern regions—Northern, Savannah, Northeast, Upper East, Upper West—which are predominantly Muslim. Additionally, about 71 percent of the respondents were economically active and actively engaged in an occupation with some form of regular source of income during the survey. Finally, about 83 percent of the respondents had formal education, and three out of every ten are senior secondary school/senior high school graduates. Beyond the regional variation in our analysis, we also examined the differences in the responses at hotspot status, gender, and age categorization (youth status) levels.

COVID-19 PROTOCOL DURING FIELDWORK
Covid-19 protocols have been relaxed. Thus, during the data collection period, all precautions were taken on a voluntary basis.

LIMITATIONS
One main challenge the team encountered during data collection was non-response by key informants from mainstream security, information, and communication-related regulatory agencies. These agencies are the key informants for the main themes of this study. To have had additional insights from key personnel at these agencies would have certainly enriched the data. Relatedly, a lot of time and effort was spent by the enumerators on trying to (re)schedule these non-responses. Other limitations are methodology related. The approach of collecting both qualitative and quantitative data at the same time did not permit making in-depth causal explanations of key findings of the quantitative data from the qualitative data.

FINDINGS: PRESENTATION OF ANALYZED FACTS AND EVIDENCE BASED ON COLLECTED DATA

RESEARCH OBJECTIVE 1: MAPPING OF RADIO STATIONS IN GHANA
According to data from the NCA, the total number of authorized radio stations in Ghana at the fourth quarter of 2022 was 707. However, 194 of these were not in operation, so the total number of authorized radio stations that were operating

stood at 513.[4] As the industry regulator, NCA has a five-fold classification of licensed radio stations that revolves around their ownership structure, internal governance, and market orientation (see Table A2). The specific classifications are as follows:
- Public: radio stations owned or operated by the Government of Ghana (GOG);
- Public foreign: foreign-owned radio stations broadcasting in Ghana through diplomatic arrangements;
- Commercial: privately owned radio stations operating for profit;
- Community: radio stations owned or managed by community representatives on a not-for-profit basis to serve the needs of a marginalized community; and
- Campus: radio stations operating within the institutional oversight of or serving the needs of an educational institution.

Commercial radio stations constitute the single largest category of authorized FM stations in the country, making up 526 of the 707 authorized stations. The next category in terms of size is community radio (121), followed by public radio (31). The smallest category is the public (foreign), comprising only five radio stations. Broadcast range for radio stations is determined by their classification. Commercial and public foreign FM radio stations have a maximum radius of 45 kilometers (km) while community and campus radio stations have a maximum radius of 5 km. However, there is no limitation on the range of public FM radio stations.

Reliable statistics on audience size are not readily available for the legacy media in Ghana. However, access to various devices could be used as a proxy for the *minimum* reach of different media formats. In Ghana, mobile phone ownership is widespread (90 percent of households), while television ownership is at 60 percent and radio ownership at 57 percent. However, internet access at home is limited (22 percent of households), as is computer ownership (15 percent). Men use the internet more than women (35 percent vs. 15 percent), and mobile phone usage is high among both genders, with slightly higher utilization among men (88 percent vs. 82 percent). Regional disparities exist in mobile phone usage, with higher rates among women in Greater Accra than the Upper West Region. Radio ownership shows minimal differences between rural and urban areas, with 59 percent of urban households and 55 percent of rural households owning radios (see Table A3). However, this is only a minimum approximation because one device may be used by a household or even an entire neighborhood.

CHARACTERISTICS OF RADIO STATIONS IN GHANA – RADIO MANAGERS SURVEY
This section provides information on the basic characteristics of radio stations from the stations survey (see Exhibit 3). The radio managers' survey provides unique descriptive data on Ghana's radio landscape and lends insights into the factors driving programming decisions drawn from a survey experiment. The quantitative assessment survey of the radio station managers in Ghana illustrates that the average radio station in our sample has been in existence for eight years, with slightly older establishments in Greater Accra, Central, and North East regions (though in these latter two regions the sample sizes are very small). Ashanti, Eastern, and Greater Accra stand out for having stations with

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[4] 'Authorized radio stations – National Communications Authority.
https://nca.org.gh/authorised-radio/ (accessed 11 July 2023)

somewhat larger staffs, which is reflected in the budget numbers below.[5] (see Exhibit 3). Most of the sample is composed of commercial stations (80 percent), and only in the Upper East is the sample less than half commercial (the majority being community radio).

The languages of broadcast reflect Ghana's linguistic diversity. The four main languages are Akan (50.3 percent of broadcasting), English (22.4 percent), Dagbani (6 percent), and Dagaare (4 percent), but as Exhibit 3 shows, there is enormous variation in the language of programming across regions.

The findings from the radio managers' survey provides a high-level overview of the finances of radio stations (see Exhibit 4). Keeping in mind that only 45 percent of stations were willing or able to share revenue and expenditure data, the figures provide some high-level takeaways. First, most stations are heavily reliant on advertising for the largest share of their revenue; after that, "other" revenue sources and donations make up a small, if variable, share of station income. Second, the vast majority of expenditures go toward salaries and operating expenses (utilities, taxes, etc.). Third, only a small share of expenditures is dedicated to producing original content. As described below, this contrasts with the large share of original programming that stations put on the air, implying that most original programming must be quite inexpensive.

Exhibit 2. Descriptive Characteristics of Sampled Stations (Source: Ghana Radio Survey)

Station characteristics by region								
Sample Regions	Sample Size	Years active (median)	Employees full-time (median)	Employees part-time (median)	Commercial stations (share)	Dominant broadcast language	Dominant broadcast time (share)	English broadcast time (share)
Ahafo	8	8.0	8.0	6.0	87.5%	Akan	84.5%	8.9%
Ashanti	32	7.0	11.0	5.0	84.4%	Akan	75.3%	23.5%
Bono	26	8.0	8.0	5.0	92.3%	Akan	83.0%	14.3%
Bono East	15	9.0	9.5	4.5	100.0%	Akan	83.3%	8.5%
Central	1	14.0	157.0	7.0	100.0%	Akan	80.0%	20.0%
Eastern	18	8.5	13.5	6.5	83.3%	Akan	84.5%	11.7%
Greater Accra	27	11.0	20.0	5.0	77.8%	Akan	41.9%	40.3%
North East	3	11.0	2.0	10.0	66.7%	Mampruli	47.0%	29.0%
Northern	23	8.0	5.0	6.0	82.6%	Dagbani	50.9%	27.1%
Savannah	6	9.0	3.5	6.0	66.7%	Gonja	49.3%	11.7%
Upper East	15	8.0	5.0	5.0	46.7%	Frafra	57.0%	32.5%
Upper West	13	6.0	5.0	7.0	61.5%	Dagaare	50.8%	21.2%
All Regions	**187**	**8.0**	**8.0**	**5.0**	**80.2%**	**Akan**	**50.3%**	**22.4%**

[5] The single station in Central, Pink Panther Media in Kasoa, is quite an outlier here, with 157 full-time employees.

Exhibit 3. Radio Station Expenditures and Income (Source: Ghana Radio Survey)
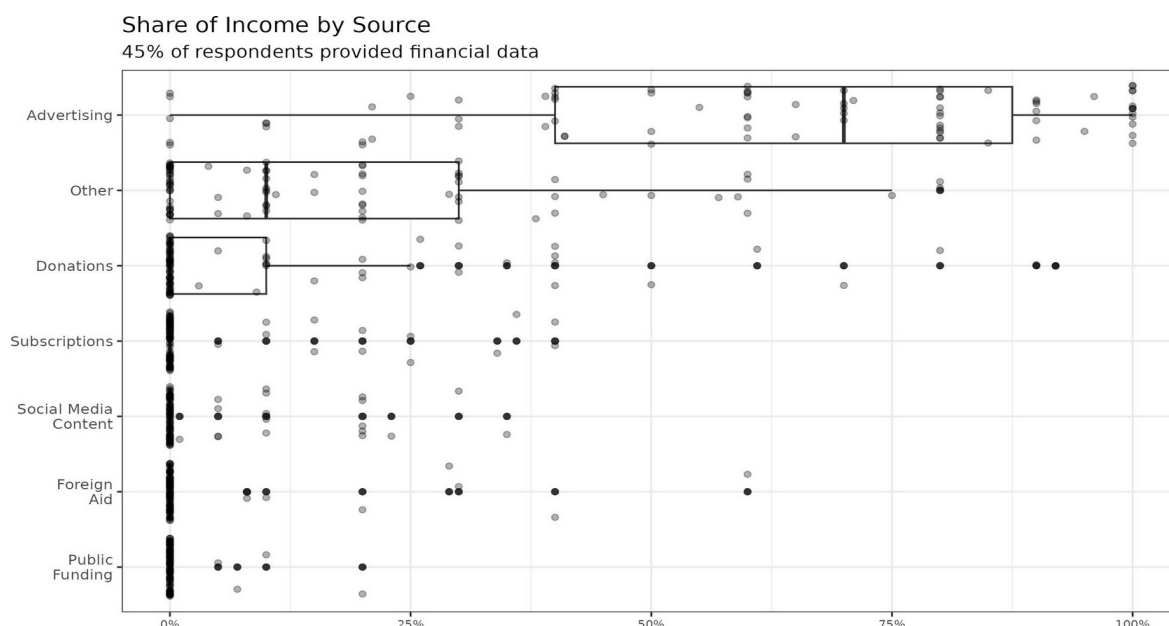
Share of Income by Source
45% of respondents provided financial data

RADIO STATIONS' CAPACITY, ORIENTATION/AFFILIATION TO GROUPS (E.G., INDEPENDENT, STATE-SUPPORTED, RELIGIOUS, OR POLITICAL AFFILIATION)

A substantial line of research from many countries suggests that the ownership and partisan orientation of media have important implications for both the content of what they broadcast and how polarizing it is (Gadjanova, Lynch, & Saibu, 2022; Grossman, Margalit, & Mitts, 2020; Szeidl & Szucs, 2021). Despite widespread concern with a polarized media environment, the radio managers' survey identified that relatively few radio stations declare themselves to have a partisan affiliation, leadership with backgrounds working with political parties, or are affiliated with a political party. Likewise, respondents report that promoting a political agenda and/or prioritizing partisan listeners are considerably less important than keeping advertisers happy or attracting young listeners. Exhibit 5 shows most radio station leaders have a background in business, approximately 25 percent of stations have leadership with a background in government, about 20 percent previously worked with national or international NGOs, and only about 12 percent previously worked for a political party.

Exhibit 4. Professional Background and Associations of Radio Stations (Source: Ghana Radio Survey)

Exhibit 5. Radio Program Formats (Source: Ghana Radio Survey)
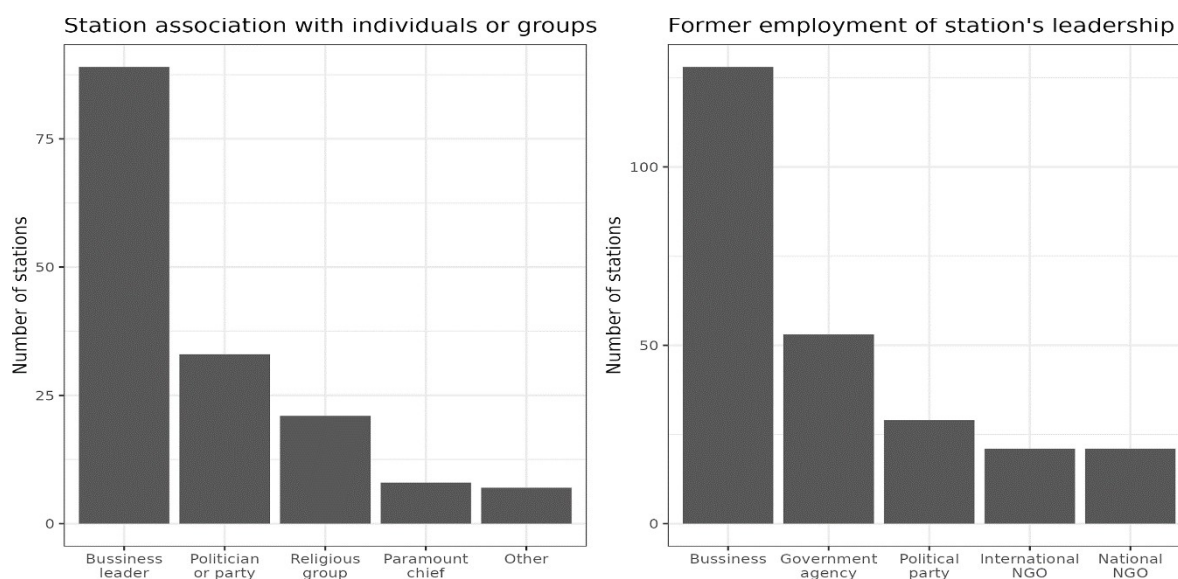
The findings from the radio managers' survey in relation to the backgrounds of radio station leadership and affiliation with different individuals and groups, as illustrated in Exhibit 5, shows that only about 15 percent of stations report being affiliated with a politician or political party. Indeed, less than 10 percent of stations admit to airing content that is more sympathetic to one political party over another.[6] These descriptive results suggest that radio programming might be less partisan than is popularly believed.

TYPES AND SOURCES OF PROGRAMMING
With regards to programming and content, the radio managers' survey shows that most radio stations produce the greater part of their content; however, the majority source stories from social media and/or community members every day. Exhibits 6 and 7 provide some insight into the format and sourcing of station programming. Panel discussions bearing on politics are the most common format for programming; this is followed by host-driven talk shows, religious programming, music, and news shows.
Exhibit 7 shows that these panels are sourcing materials most frequently from social media, station journalists, and community members. The high incidence of local sourcing underscores the importance of the internal editorial practices of stations for weeding out mis/disinformation.

Exhibit 5. Radio Program Formats (Source: Ghana Radio Survey)

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[6] This survey takes several measures to elicit honest responses. Respondents were informed that the survey was anonymous and respondents were encouraged to self-administer the survey, which can reduce bias in certain contexts (Nanes et al., 2021). However, it is still possible that concerns about social desirability exerted biased responses against describing their radio stations as partisan.

Share of programming across formats
No programming → All programming
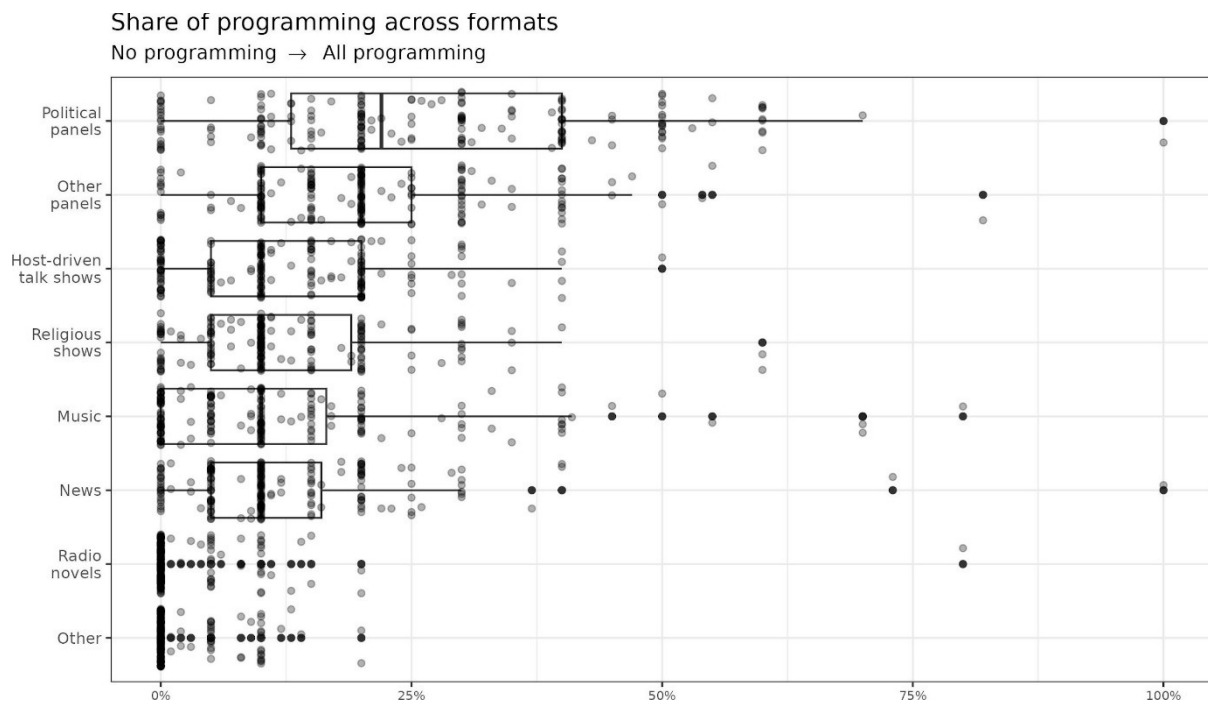
Exhibit 6. Sourcing of Radio Programs (Source: Ghana Radio Survey)

Frequency the programs discuss content from different sources
Never → Daily
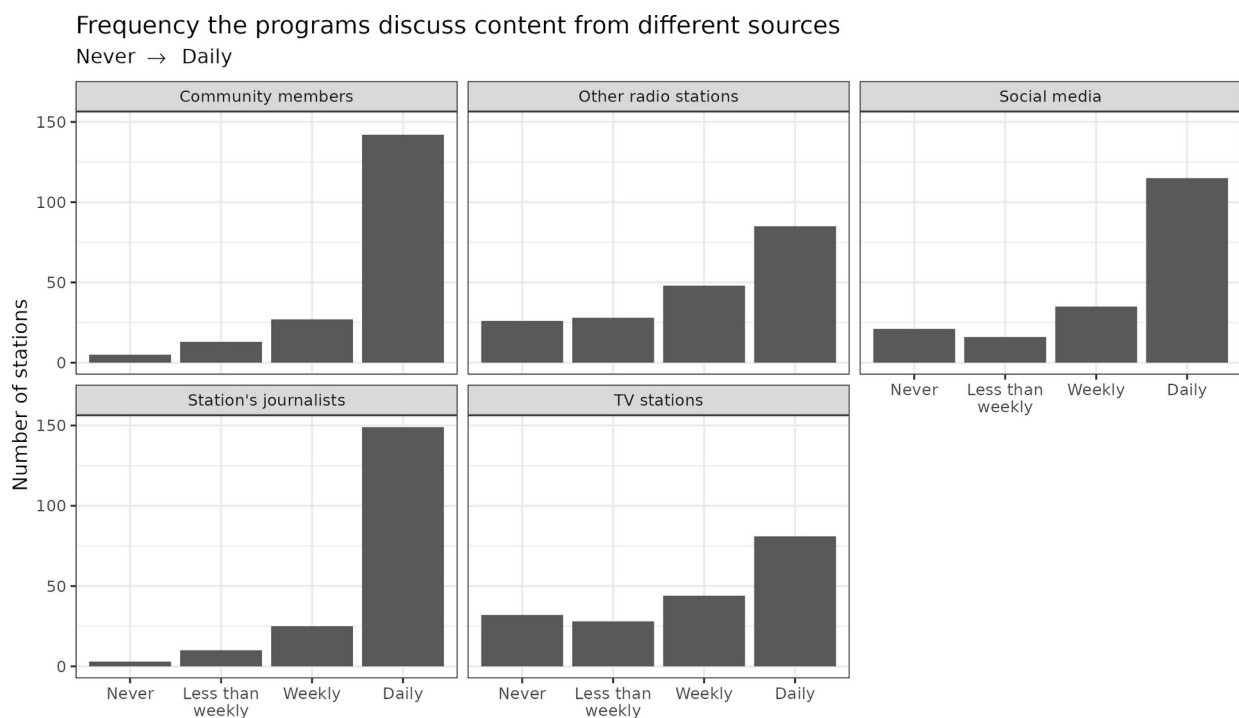
FACTORS AFFECTING PROGRAMMING CHOICES
To the crucial issue of how stations decide what to put on air, Exhibit 8 shows that two issues loom large: increasing listenership and keeping or maintaining advertisers. While keeping expenses in check is moderately important for many stations, promoting a political agenda is an important consideration for a very few.

Exhibit 7.Importance of Considerations in Broadcasting Decisions (Source: Ghana Radio Survey)

Importance of considerations about what content to broadcast
0 = Not Important → 10 = Very Important
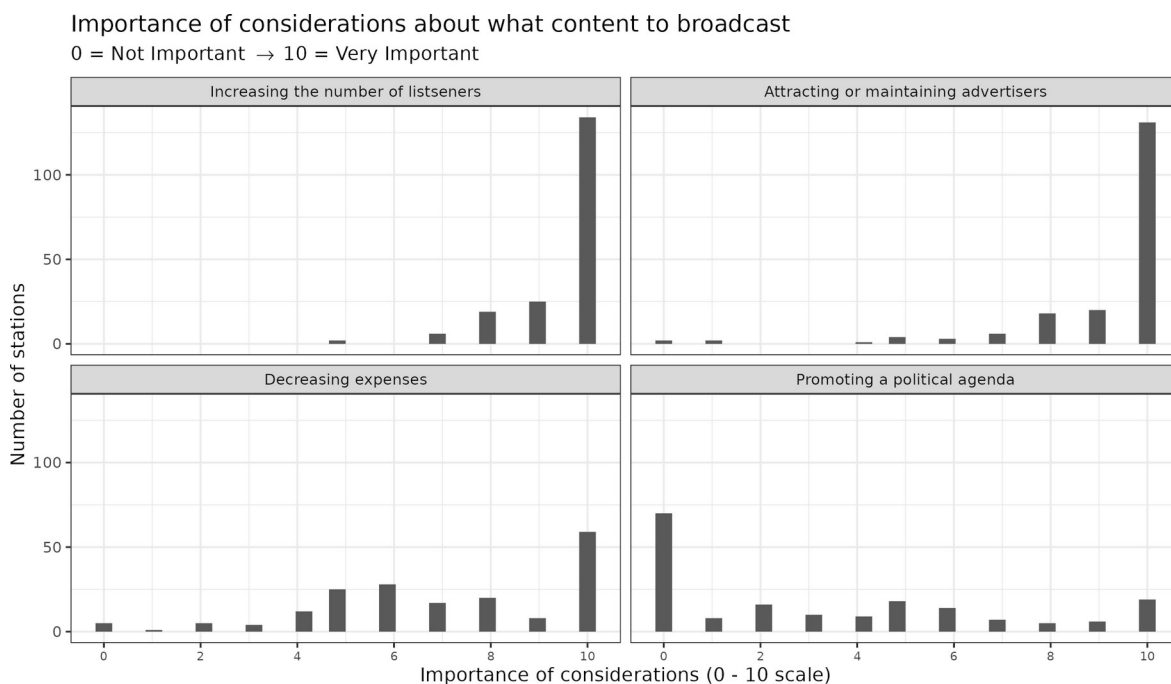
Exhibit 8. Importance of Audiences in Broadcasting Decisions (Source: Ghana Radio Survey)

Importance of considerations about what content to broadcast
Content's appeal to specific groups: No consideration → Much consideration
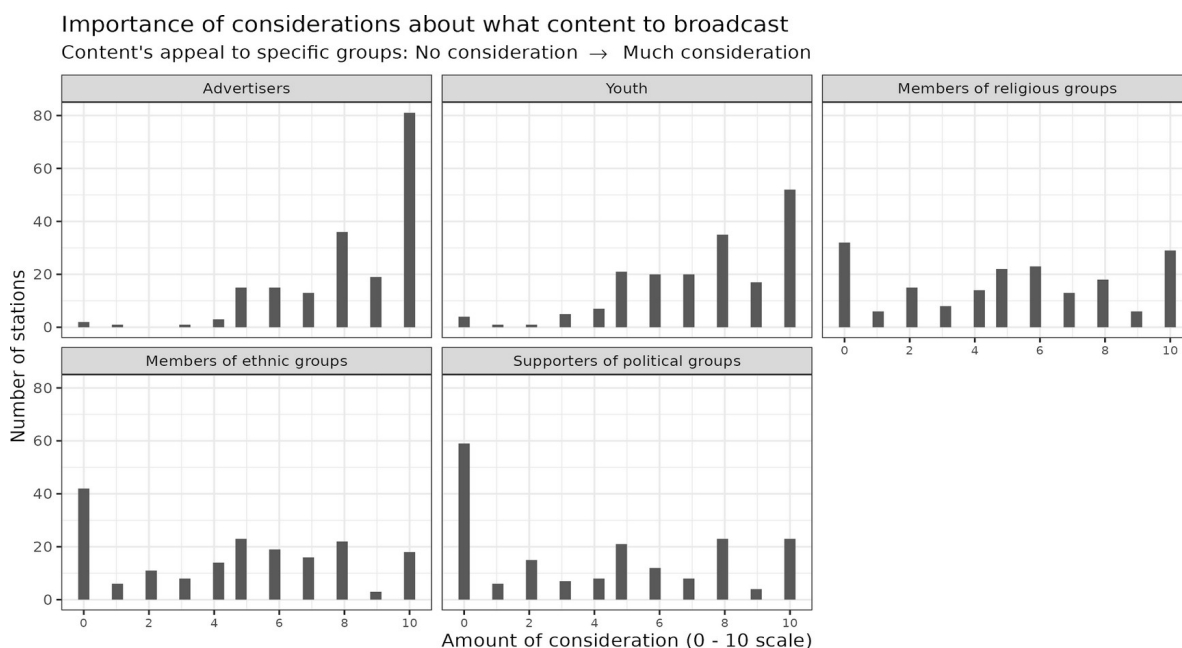
These findings are generally echoed in a related question on the importance of different *groups* in making choices about what content to broadcast. Exhibit 9 shows that advertisers are very important for many stations and that young listeners are also quite important. Catering to members of religious, ethnic, and political groups is much less important for most stations, though about 25

percent of stations do prioritize political listeners and about 15 percent prioritize ethnic groups.[7]

It can be inferred that respondents to our survey questions are obfuscating about the true importance of partisan or ethnic considerations in making decisions about what they air. This "social desirability bias" occurs when respondents to survey questions perceive that there is a socially acceptable response to a question and comply with socially desirable responses. To address this possibility, we developed a conjoint (or "forced choice") survey experiment to identify what factors affect programming choices more precisely. Conjoint experiments ask respondents to choose between two options (in our case, options over which radio program to put on the air), where key attributes of those options are randomly varied. Conjoint experiments have two significant advantages over traditional survey questions. First, by embedding socially sensitive attributes of choices in a broader set of considerations, conjoint experiments allow researchers to assess the impact of socially sensitive considerations without directly asking respondents to address them. Second, by combining several different attributes of a choice, conjoint experiments allow researchers to assess how respondents assess the tradeoffs inherent in real-world choices. For instance, a radio manager might value truthful programming, but they typically have to weigh that value against the cost of extensive fact-checking.

In the conjoint experiment, the study team asked respondents to choose between two radio programs that varied on several key attributes: (a) their valence, (i.e. did they discuss a news story that was positive or negative about a politician's party); (b) whether the story targeted party officials, a chief, or a party's supporters and whether the story discussed polarizing content or content that had bearing on local issues; (c) the truthfulness of the reporting, (i.e. its fact-check status); (d) whether the views in the story were consistent with those of key constituencies, particularly advertisers, listeners, or owners; (e) whether program guests agreed or disagreed with each other and were prone to engage in either reasoned debate or attacks; and (f) the cost of the programs.

After seeing the precise attributes of the two different programs, we asked respondents which program they would be more likely to put on the air and which program they think would be more likely to spread misinformation.

Exhibit 10 presents the marginal means for the choice about which program respondents were more likely to put on the air during prime time. Readers can interpret any marginal means below .50 as reducing the likelihood that managers will put a program on the air; likewise, any mean above .50 suggests an increase in the likelihood that a program will be put on the air. Whenever confidence intervals cross .50, readers should interpret the result as indicating no effect. The results suggest that several factors reduced the likelihood that radio managers would put a program on the air; polarizing content, content that has not been fact-checked, and programs where guests attack each other are discounted. On the other hand, radio programs that deal with local development considerations, have been fact-checked as truthful, and involve reasoned, honest debate are significantly more likely to be chosen for airtime. Interestingly, respondents seem relatively unresponsive to the cost of programming.

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[7] We define "prioritizing" here as any response that answers 8 or higher in terms of the importance of the relevant group.

Program Station is More Likely to Broadcast During Prime Time
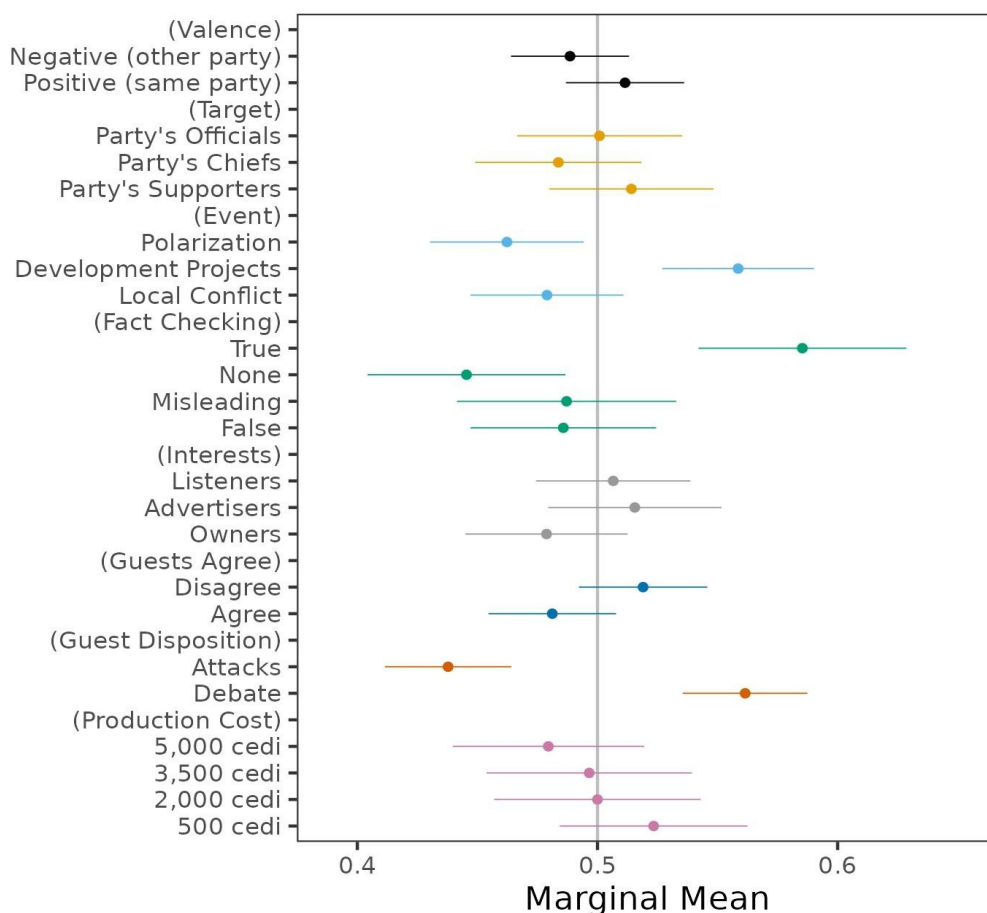
The results above suggest that the typical radio manager cares a good deal about the truthfulness of what they put on air. Exhibit 11 provides evidence on which features of programs radio managers think are most and least likely to spread misinformation. Stories that are negative toward a political party, describe polarizing events, have not been fact-checked, or involve guests attacking each other increase the likelihood that respondents will evaluate them as more likely to spread misinformation. Interestingly, the costliest programs among those suggested (valued at 5,000 cedi) also seem to be associated with misinformation, which might suggest the importance of moneyed interests in spreading misinformation. On the other hand, positive stories about a political party, those covering local development issues, labeled as "false," (as shown on Exhibit 11 below) and involving panelists who reasonably debate each other reduce the likelihood that programs will spread misinformation.

The general picture that emerges across these results is that Ghanaian radio stations are, on average, in very competitive markets, and they view keeping their advertisers and listeners happy as their most important priorities. In response to both non-experimental and survey experimental questions, they

show relatively little interest in explicitly political or polarizing content. If anything, radio managers seem to prefer guests who reasonably debate stories that are truthful and non-polarizing.

Exhibit 10. Factors Affecting Radio Managers' Assessment of Sources of Misinformation (Source: Ghana Radio Survey)

Program Station Believes is More Likely to Spread Misinformation
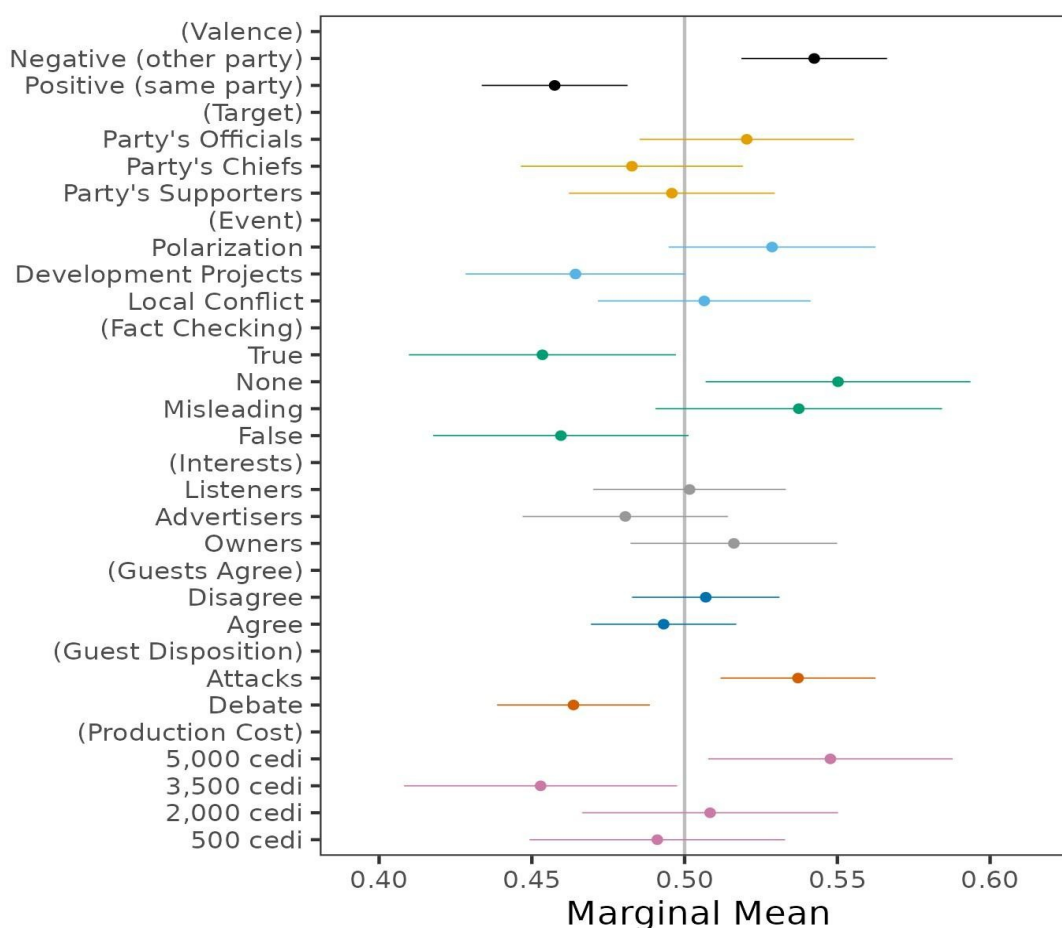
RESEARCH OBJECTIVE 2: ASSESSMENT OF MISINFORMATION AND DISINFORMATION THROUGH RADIO AND SOCIAL MEDIA

RADIO AND SOCIAL MEDIA CONSUMPTION HABITS

This section presents the comparative analysis of radio and social media consumption habits, examining their unique characteristics, audience demographics, and content preferences. To assess misinformation and disinformation, it is important to understand the respondents' preference of media for consumption of news and information in the eight regions. Secondary data such as the Afrobarometer (2018) show that the majority of Ghanaians rely on radio (56 percent) and TV (42 percent) as sources of news and only a quarter of the population gets news from social media and the internet.

The assessment of media consumption habits in the eight regions confirmed a high daily consumption rate of TV (69 percent), radio (67 percent), and social media (66 percent) as the primary sources of news and information consumption in the eight regions of Ghana, with a growing preference for family and friends (53 percent) as an informal source of information and news (Exhibit 14). Notably, social media stands out as the main hourly source of information, which is not surprising considering its real-time transmission and fast dissemination of news compared to other sources (Exhibit 12).

Exhibit 11. Frequency of Getting Information from Media Sources
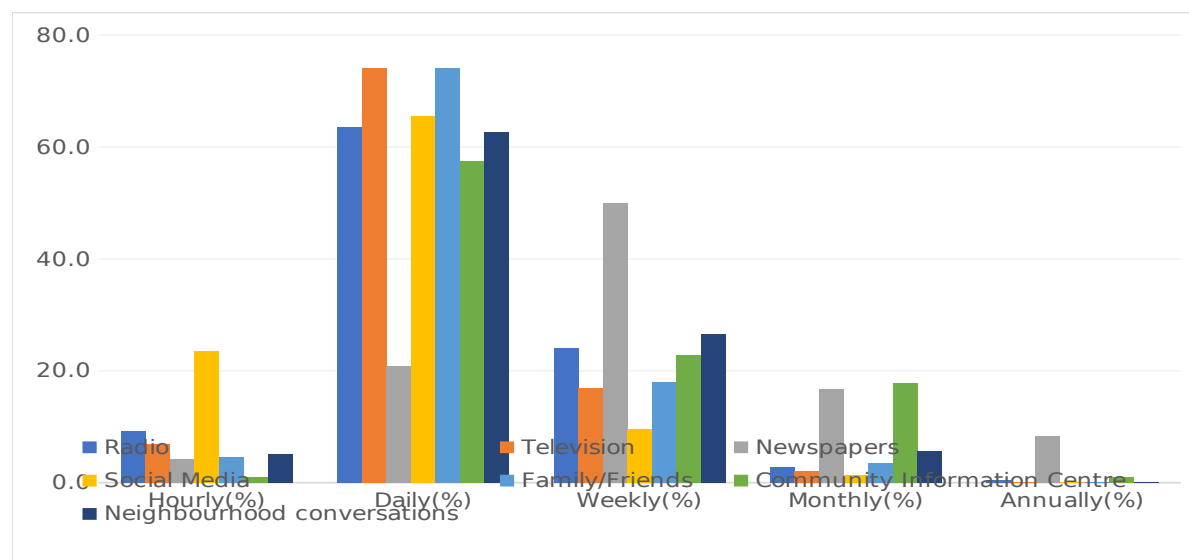
Source: Survey, May 2023

Exhibit 12. Social Media Activity by Radio Stations (Source: Ghana Radio Survey)
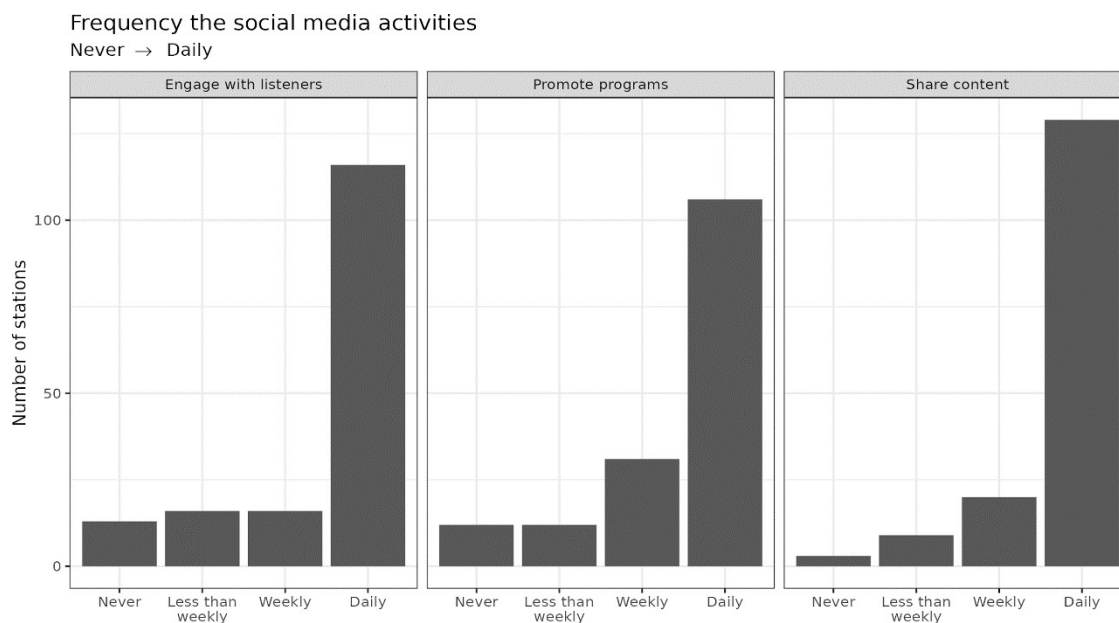
Consistent with the listeners survey, the radio managers survey shows that radio stations mostly source their materials from social media, station journalists, and community members (see Exhibit 7). In addition, most radio stations maintain a strong social media presence and the majority engage with listeners, promote programming, and share content on social media daily (see Exhibit 13).

Though respondents from the study overall prefer TV, across the different demographics, there are notable differences in news and information consumption. At the regional level, social media is the primary source of news in Upper West (79.5 percent), Bono (75 percent), Bono East (75 percent), and Greater Accra (76 percent), followed by radio in the Northern (71.6 percent), North East (82.2 percent), and Upper East (67 percent) regions, while TV is the primary source of news in Savannah Region (90.5 percent) (see Exhibit 14).

Exhibit 13. News Consumption Habits in the Eight Regions

Source of news	Sex of respondent		Hotspot status		Youth status		Region								Total
	Male	Female	Hotspot	Non hotspot	Youth (18–29 yrs)	Adult (30+ yrs)	Northern	Savannah	North East	Upper East	Upper West	Bono	Bono East	Greater Accra	Total
Television	71.2	64.7	69.4	67.4	66.8	69.9	60.7	90.5	72.0	61.3	76.0	57.5	70.0	74.3	68.5
Radio	69.3	64.1	65.4	69.2	53.4	78.8	71.6	59.1	82.2	67.0	56.9	70.0	67.5	61.5	67.2
Social media	70.3	58.9	68.2	62.7	80.9	52.6	56.0	87.6	49.5	58.0	79.5	75.0	75.0	76.0	65.6
Family/ friends	53.0	53.7	53.1	53.5	55.6	51.4	51.5	34.3	71.0	56.1	60.3	62.5	47.5	48.0	53.3

Source: Survey, May 2023

There are distinct differences among the other demographic variables. Male respondents generally access news and information from TV and social media, while female respondents prefer TV and radio. Youth predominantly seek news and information using digital sources (social media) (80.9 percent) and adults the radio (78.8 percent). This is not a surprising finding, given the digital knowledge gap between youth and adults. The hotspot communities prefer TV and social media as their main sources of news and information (see Exhibit 14), which can be attributed to the prevalence of scoop news and information on these mediums.

Internet and social media usage in Ghana is on the rise, with an internet penetration rate of 68.2 percent, an increase of over 1.9 percent (438,000 new internet users) between 2022 and 2023 (Data Report Ghana, 2023). Similarly, the result from this survey identified a significant use of social media in the eight regions surveyed and across all demographics. WhatsApp is the predominantly used platform in all regions studied, and respondents spend an average of 3.4 hours daily on this platform. Facebook and TikTok, with respondents spending an average of 2.9 and 2.2 hours, respectively, follow closely, while other platforms like YouTube, Instagram, and Snapchat are also gaining increasing interest. Further analysis revealed a high usage pattern across gender and youth demographics with slightly divergent consumption behavior between genders,

with males predominantly using Facebook and YouTube and females using WhatsApp and TikTok (see Exhibit 15 & Figure A3).

Exhibit 14. Percentages of Respondent Actively Using Social Media
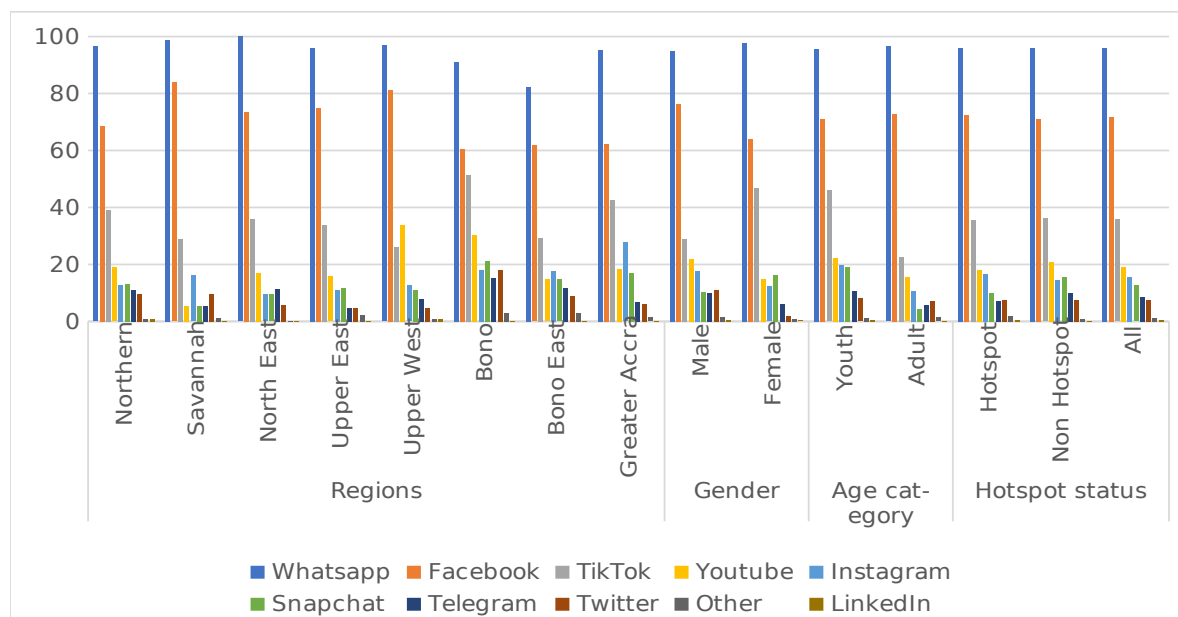
Source: Survey, May 2023

Notably, the data suggest that, while there are relatively more female users on WhatsApp, males tend to spend a longer time (approximately 3 hours and 42 minutes) than females (approximately 2 hours and 48 minutes). In terms of the youth/age category, as expected, youth spend more time on all three platforms than adults. Additionally, non-hotspot communities tend to spend slightly more time on social media than hotspot communities (Figure A3). For purposes of this assessment, a hotspot community is defined as a community that is known as a flash point for political, land, and chieftaincy disputes.

It was equally important to understand the frequency of listening to radio programs and social media to guide interventions that would be initiated. Respondents predominantly listen to music, news, preaching, and political discussions. On average, respondents spend around 2.9 hours (2 hours and 54 minutes) listening to radio per day (Figure A3). The non-hotspot communities, females, and adult respondents spend over three hours on average listening to radio in a typical day compared to hotspots, males, and youth. The findings show that listening to radio serves as a significant means of information dissemination.

Regarding the timing of radio listening, Exhibit 16 reveals interesting patterns across regions. Respondents in the Northern region predominantly listen to radio at night, while those in the Savannah region prefer listening at dawn. The remaining regions exhibit a relatively even distribution of radio listening throughout various time periods of the day. Examining the sub-indicators, we observe a balanced distribution of radio listening among different sub-groups across the typical time periods within a day.

Exhibit 15. Time of the Day Listening to Radio by Region
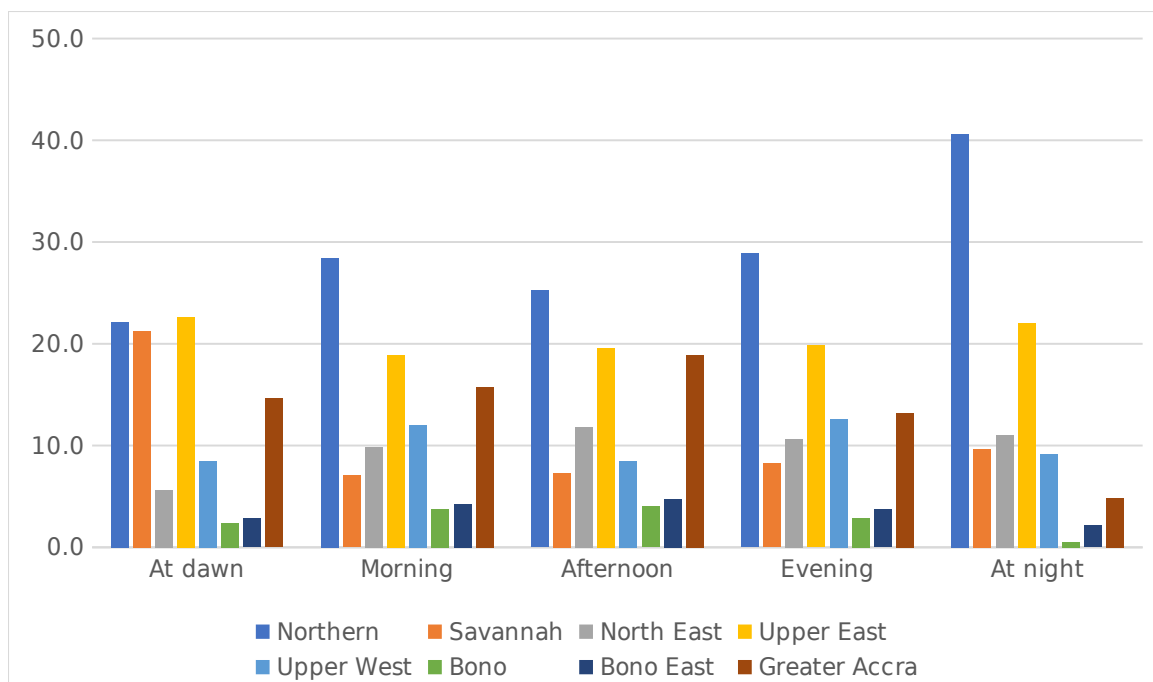
Source: Survey, May 2023

The qualitative data largely corroborated the quantitative findings regarding news consumption habits and revealed additional sources of information. Taken together, these can be categorized into five broad sources:

- Formal media outlets (e.g., radio and TV)
- Social media
- Locally based institutions (e.g., chief's palaces, funeral grounds, mosques)
- Other public places (e.g., churches, markets)
- Interpersonal (word of mouth, including phone calls and gossip)

While these categories of news sources differ in terms of the rigor with which stories are investigated and reported, they also highlight the importance of considering the social context in which news items are received and consumed. In particular, it is important to recognize that news consumers are not merely neutral information seekers but social actors in search of *useful* information. Useful in this sense does not necessarily refer to the factual content of the news item but to its ability to be invoked in ongoing social interactions and the fulfillment of one's social obligations.

TO WHAT EXTENT DO RADIO STATIONS AND SOCIAL MEDIA CONTRIBUTE TO THE SPREAD OF MISINFORMATION AND DISINFORMATION?

The spread of misinformation and disinformation via radio and social media is a global problem (Gadjanova et al., 2022). Exhibit 17 summarizes information from the media scan on the proportion of misinformation and disinformation in the Ghanaian media space. It shows that just over half of all misinformation occurs around two main news segments (politics and entertainment), with social (16 percent) and religious news (12 percent) a distant third and fourth. Misinformation also occurs in other segments, like conflict and economics, but these tend to be marginal (less than 10 percent each). The political spectrum leads in such media space abuses, followed closely by the entertainment arena and other social issues. The data further show that the biggest culprits in the spread of politics-related misinformation are the political elite. Within Ghana's

media landscape, findings from the media scan pointed to the fact that political actors and their fervent supporters are key drivers of misinformation and disinformation.

Exhibit 16. Misinformation and Disinformation in Ghana: Insights from Media Scan Results
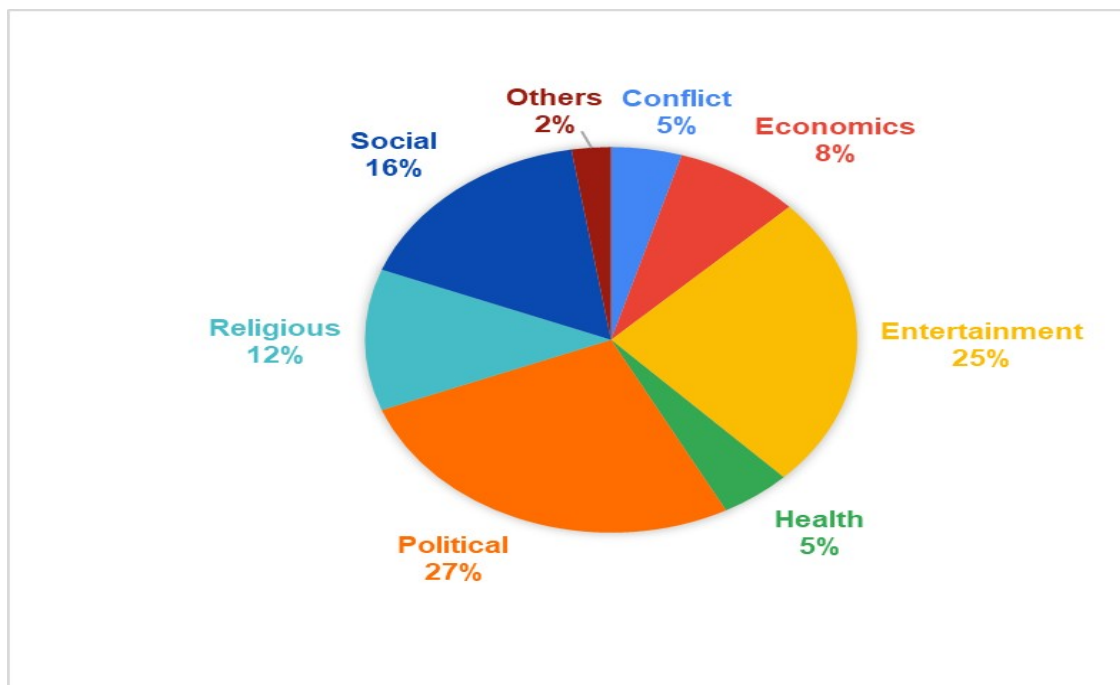
 Source: Survey, May 2023

Likewise, the findings from the radio managers' survey in Exhibit 10 suggest the features of programs most likely to spread misinformation to be stories that are negative toward a political party, describe polarizing events, have not been fact-checked, involve guests attacking each other, and costly programs (valued at 5,000 cedis). Thus, interest in money may also play a critical role in spreading misinformation.

Respondents from the KIIs and FGDs gave numerous examples of misinformation that they have encountered in recent periods. A few of these have been summarized below (the corresponding quotations can be found in the appendix 1box 1):

- Rumors that the COVID-19 vaccine makes men impotent (Traditional leader, Greater Accra Region, May 23, 2023)
- False news of secret voter registrations and recruitments by the Electoral Commission (NDC party official, Greater Accra Region, May 10, 2023)
- False news that a Fulani man had raped a woman on her farm (Fulani Chief, Bono East Region, May 8, 2023)
- False news of galamsey[8] activities at the president's house in Kyebi (NPP official, Greater Accra Region, May 10, 2023)
- Rumors that homosexuals are pedophiles (Communications expert, Greater Accra Region, May 7, 2023)

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[8] "Galamsey" is a slang that is used to connote illegal mining in Ghana

- Sensational reportage of a local accident (FGD Sumburungu, Upper East Region, May 7, 2023)
- False reports of deaths of public personalities, including chiefs (FGD Berekum, Bono Region, May 7, 2023)

The findings (see Exhibit 18, Exhibit 19, and Figure A5) identified social media as the primary source of false information, followed by radio and television, while the primary source of sharing inaccurate information, across all sub-groups in the survey, was family/friends, followed by social media. Sharing and receiving news and information from family and friends makes people more vulnerable and susceptible to misinformation and disinformation. The salience of family and friends as conduits of misinformation suggests that the spread of misinformation through family and friends is mimicking the time-honored pattern by which falsehoods—in its many guises as rumors, urban legends, political intrigues, and gossip—used to proliferate.

Exhibit 17. Encounter with Information from Media Sources that Was False (percent)
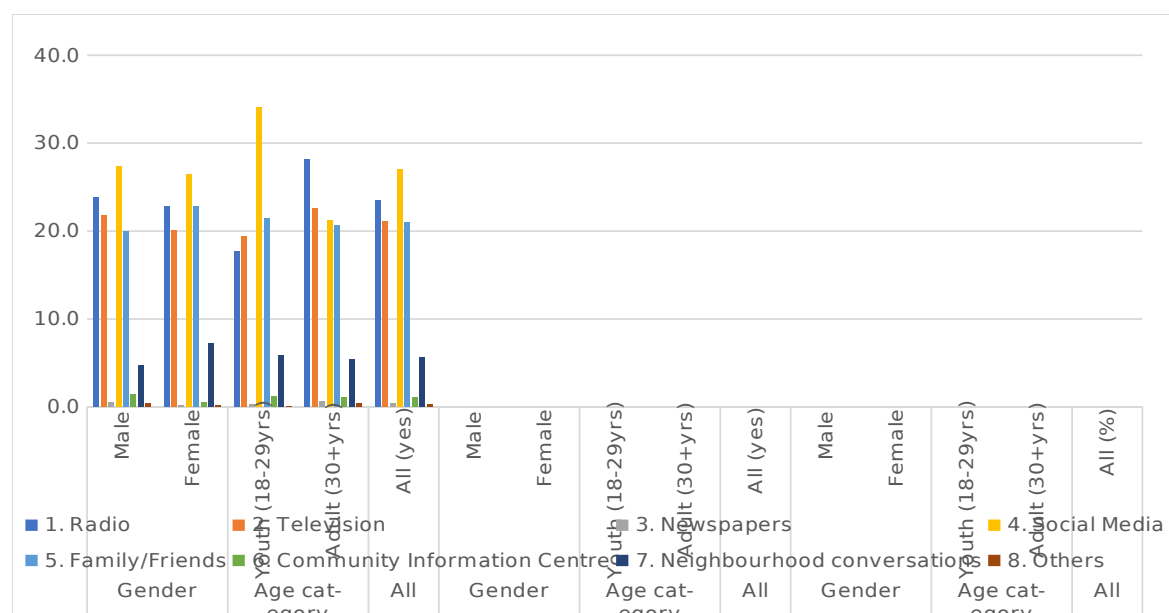
Source: Survey, May 2023

Exhibit 18. Given Out Information on Media Platforms that Turned Out to Be False (percent)
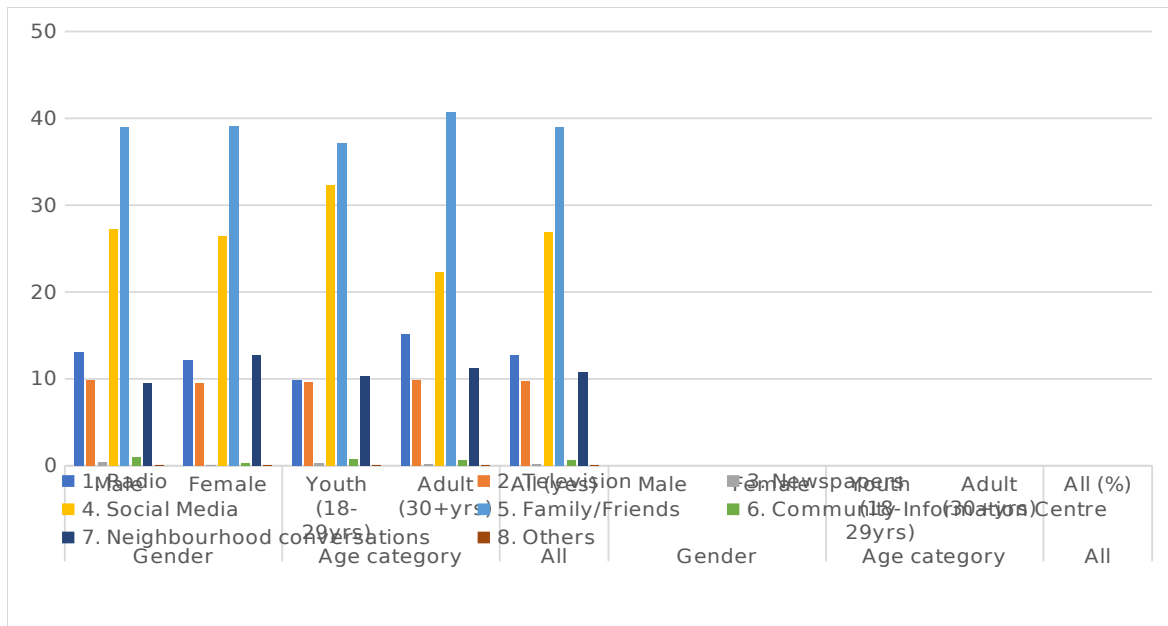
Source: Survey, May 2023

TYPES AND INCIDENCE OF MISINFORMATION AND DISINFORMATION SPREAD THROUGH RADIO AND SOCIAL MEDIA

The types of misinformation and disinformation respondents normally encountered are primarily fabricated, manipulated, or misleading content and propaganda. Additionally, manipulated content and misleading content are prevalent among the various sub-groups of the sampled population. Instances of propaganda are also notable across the sampled sub-groups (see Figure A6 & Figure A7).

MISINFORMATION AND DISINFORMATION ON RADIO

Although radio remains key among news sources (Afrobarometer, 2023), the findings show that radio stations seldom disclose the sources of the information they broadcast. On average, more than seven out of every ten respondents (74 percent) have experienced mis/disinformation at some point, and a little over three out of every ten respondents encountered mis/disinformation within the last month prior to the survey (31 percent) (see Figure A8). These marked differences are seen across the sub-indicators in Figure A8 and Figure A9. Further analysis reveals that the prevalence of political and electoral violence-related misinformation is relatively higher than other forms (Exhibit 20). On the prevalence of spreading false information on radio, the findings in Figure A10 indicate the spread of false information on radio is common, as the mean score for all respondents and across different subgroups for a Likert from 1 to 5 (where 1 and 5 respectively stand for strongly disagreeing and strongly agreeing that false information is common on radio) are more than 3. On average, respondents in the survey received close to four instances of mis/disinformation within the last month prior to the survey (Figure A11). Regionally, the Bono East region had a comparatively higher number of mis/disinformation incidents in the past month (almost six times), while the Savannah, Bono, and Greater Accra regions received approximately four times during the same period. The non-hotspot communities experienced a relatively higher number of false information incidents compared to hotspot communities.

Exhibit 19. Mean (Average Score) of Receiving Information that is Untrue from the Following Radio Programs by Region (where 1 = Never and 5 = Always)
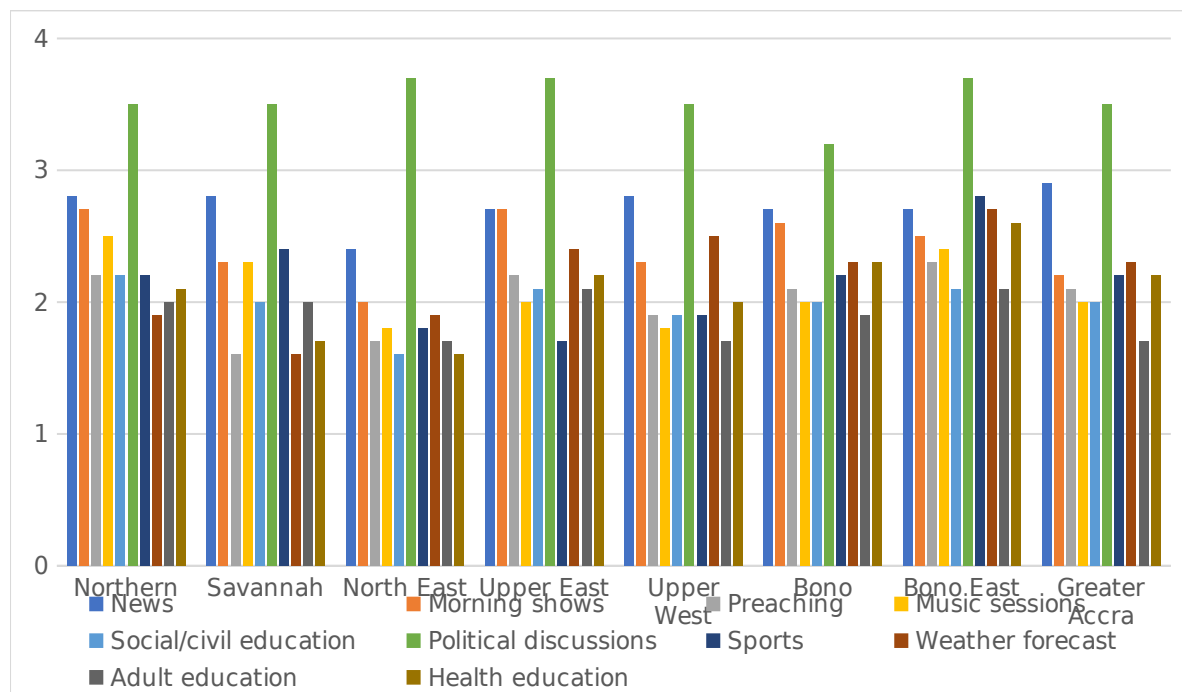
Source: Survey, May 2023

The findings suggest that, on average, politically aligned radio stations (Figure A12) are more likely to engage in mis/disinformation and political discussion programs are comparatively more prone to mis/disinform listeners. This perception is slightly more pronounced in hotspot communities than in non-hotspot communities (see Figure A11). The radio managers' survey confirms that stories that are negative toward a political party are more likely to spread misinformation, with about 25 percent of these radio stations prioritizing political listeners.

The percentage of respondents who still listen to radio after receiving false information varies by region, gender, age, and location. The highest percentage of respondents who still listen to radio after receiving false information are in the Northern Region (90.6 percent) and the Savannah Region (98.3 percent). The lowest percentage of respondents who still listen to radio after receiving false information are in the Bono Region (85.7 percent) and the Bono East Region (90.0 percent) (see Figure A18). Overall, the data suggest that the majority of respondents (93.4 percent) still listen to radio after receiving false information. This suggests that radio remains a popular source of information for many people, even if they have received false information in the past.

Another notable finding is the substantial number of respondents who rely on the radio because of the lack of trusted alternative options (see Exhibit 21). In the North East region, almost half of respondents mentioned this as their reason for still tuning in. Similarly, in the Savannah region, a notable 41.6 percent echoed

this sentiment. These percentages highlight a prevalent perception among individuals in these areas that the radio remains a relatively reliable source of information compared to other platforms, despite the risk of encountering false news. A majority of respondents across various regions mentioned that they receive other useful information from the radio station. This response was particularly high in regions like Northern (85.5 percent), Savannah (83.3 percent), and Upper East (86.7 percent). These figures indicate that people find value in the radio beyond the concern of false news, indicating that it offers content they consider relevant and beneficial.

Exhibit 20. Reasons for Still Listening to the Same Radio Station after Receiving False Information (percent)
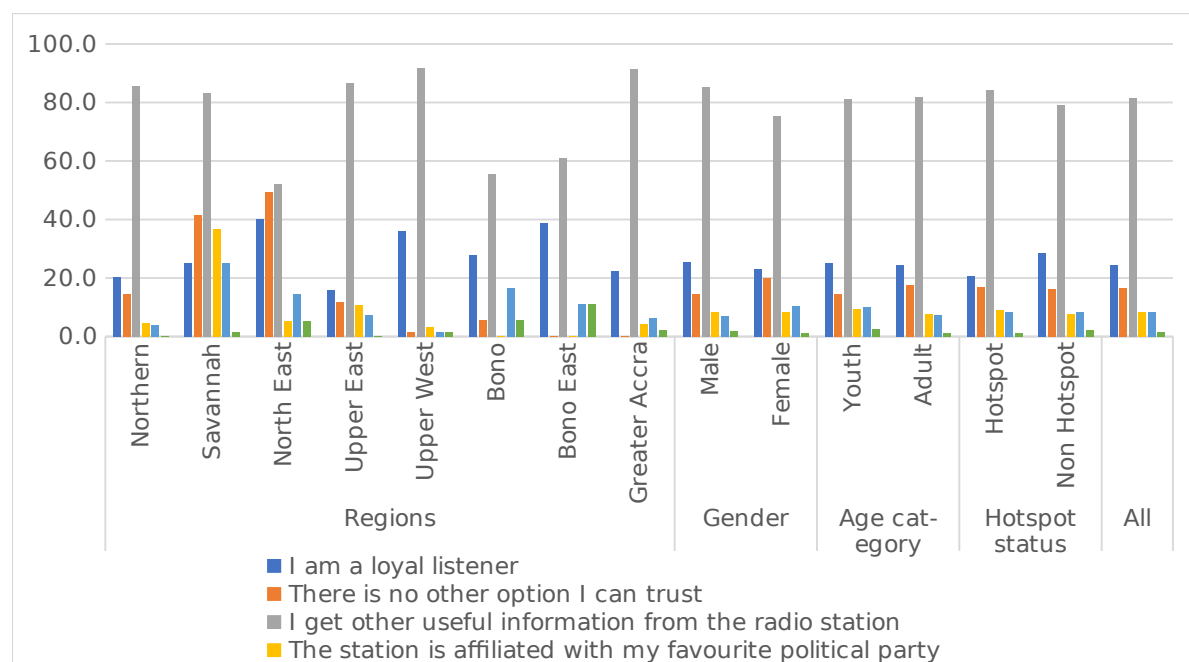
Source: Survey, May 2023

This confirms the earlier observation from the qualitative analysis that content from radio and social media are not solely consumed for their informational content and that information—even with varying shades of accuracy—performs a crucial role in ongoing social relations. For example, some respondents mentioned that they listen to radio stations affiliated with their favorite political party. While the percentages were relatively low overall, it was more prevalent in regions like Savannah (36.7 percent) and Upper East (10.8 percent). This indicates that political affiliation plays a role in people's choice of radio station, potentially influencing their trust in the information provided.

The survey also found that gender and age category were important factors in why people listen to radio when they know they could receive false information. Males were more likely than females to say that they are loyal listeners (25.6 percent vs. 23.0 percent), while females were more likely than males to say that there is no other option they can trust (20.2 percent vs. 14.4 percent). Age is also a factor. Youth were more likely than adults to say that the station is affiliated with their favorite political party (9.5 percent vs. 7.7 percent). Regarding hotspot status, respondents living in hotspots (9.0 percent) were more inclined to listen to radio stations affiliated with their favorite political party than

those in non-hotspot areas (7.7 percent). This suggests that individuals in hotspots might perceive the station's political affiliation as more relevant, leading them to tune in despite the risk of receiving false information.

While it may be reasonable to expect that a radio station that is found to have spread false information will suffer such a profound credibility crisis that listeners will avoid or boycott it, the data corroborates the analysis above showing that dismissing a media outlet was rarely the preferred option for news audiences. Instead, individuals continue consuming news from such outlets but begin to exercise a heightened sense of caution when doing so. This caution takes multiple forms, including cross-checking stories from other media outlets or direct personal verification. One reason given for the continued reliance on such blemished sources is a belief among some respondents that even compromised media outlets may be right sometimes, and, thus, it would be foolish to totally dismiss them for one or a few acts of misinformation. For instance, when asked if they still get information from such sources/people and how they treat such blemished information, this interviewee responded:

> "As a community leader, even if the person tells lies about hundreds; sometimes, one may be true." (Traditional leader, Bawku West, Upper East Region, May 4, 2023)

MISINFORMATION AND DISINFORMATION ON SOCIAL MEDIA

Regarding the prevalence of false information and the occasional publication of false information in the media, there is agreement among respondents in the different sub-group indicators that false information is sometimes disseminated by social media (Figure A13). Greater Accra and Savannah regions, males, and hotspot communities have a high agreement that false information is shared by the media compared to their counterparts. Overall, respondents across various sub-group indicators believe that Facebook is most prone to spreading misinformation and disinformation, followed by TikTok and WhatsApp (Figure A14). Similar trends are observed within sub-categories of hotspot communities, except for chieftaincy violence-prone communities, where WhatsApp is considered relatively more common in spreading mis/disinformation compared to TikTok, in addition to Facebook (Figure A15).

The data reveal interesting insights into individuals' experiences and behaviors related to accessing information on social media, the verification of information, and the belief in the responsibility of social media platforms regarding accuracy. Respondents continue to engage with social media platforms despite the risk of encountering false information for various reasons (Figure A19 and Figure A20). In regions like Northern (18.5 percent), Savannah (16.7 percent), and Northeast (20.4 percent), a significant percentage of respondents value the number of followers they have on social media, highlighting their desire for social influence and a wide follower base. Additionally, in regions such as Savannah (35.7 percent), Upper West (27.4 percent), and Bono East (4.2 percent), a notable portion of respondents mentioned the appeal of following many individuals, indicating their interest in connecting with a diverse range of people and accessing their content.

The quantitative assessment shows a high rate of accessing false information from social media, with 86.9 percent of respondents having accessed information on social media that turned out to be untrue. In the previous month, 62.6

percent of respondents had heard news or information on social media that turned out to be untrue. Despite the high rate of encountering untrue information on social media, a significant majority of 98.2 percent still use the social media platform.

A crucial factor that promotes the rapid dissemination of misinformation and disinformation is whether consumers of news items from social media verify the accuracy of the source of information they find on social media. More than one in three respondents to the media consumption survey reported making no efforts to verify the information they receive on social media, with 42 percent of women respondents reporting no attempt to confirm the veracity of content accessed on social media platforms.

However, 54.2 percent of respondents stated that they try to verify the information when the source is provided alongside the information. Additionally, 51.1 percent of respondents reported attempting to verify or validate the authenticity of information when the source is not given alongside the information, while 94.5 percent of respondents believe that social media accounts should verify the accuracy of the information before disseminating it (Figure A21).

Findings from the data show that some news consumers use a variety of alternative sources to confirm the authenticity of a news story they wish to verify. FGD participants mentioned resorting to news outlets in legacy media (i.e., radio and TV) and online sources to confirm the veracity of reports. Some others also turned to more informal sources, such as social media or talking to trusted people in their communities for confirmation.

The key informants, however, were more likely to directly act or to turn to more authoritative sources when trying to establish the veracity of news stories. The key informants were senior public officials or civil society actors in media and communications, and, thus, were able to draw on advanced knowledge of media operations. In addition to checking if other media houses are also reporting the same stories, many also went out to investigate or to see for themselves whether the story actually happened. This was usually the case for community-based news stories. KII participants who had a high level of education could often sense when a news story was implausible based on their prior knowledge of the topic and the application of critical thinking.

> "Some, I know instinctively from maybe my own knowledge of things and issues, and from the internal logic of the information that is put out there, I can see immediately that this is false…. So, I wait for it to be verified on mainstream media. If any of these media sources that I rely on come out and endorse those views and information, I am more likely to consider them as truthful." (Communications expert, Greater Accra Region, May 7, 2023)

Survey respondents were asked about whether false and misleading information from an elected member of parliament (MP) or president and from a new electoral candidate would affect their voting behavior. The results in Figure A25 show that for elected MPs and president, close to 50 percent of the respondents said the false or misleading information would not affect whether they would vote for them, while about a third said it would strongly affect their votes. In the case of new electoral candidates, 46 percent indicated that false and misleading

information would not affect their votes even if the person is the source of the mis/disinformation (Figure A26). This is consistent with findings from recent studies on partisan affiliation that show that people are willing to hold on to obviously false or debunked ideas as an expression of their partisan identities. This has been called a "joy of partisan 'cheerleading' rather than sincere differences in beliefs about the truth" (Bullock et al., 2015, p. 521).

RESEARCH OBJECTIVE 3: POTENTIAL GAPS AND VULNERABILITIES
The connection between false and misleading information and the escalation of electoral or extremist violence is a critical aspect to examine to understand the potential gaps and vulnerabilities in society. This study explored listeners' perceptions regarding this connection through questions about their first-hand experiences with the use of sensitive words on radio leading to various forms of violence in their communities and regions. The findings from Figure A27 reveal that, overall, a slightly higher percentage of respondents reported witnessing instances where sensitive words on the radio resulted in violence at the regional level than the community level. Notably, approximately 34 percent of respondents indicated witnessing the use of sensitive words on radio triggering conflict situations at both the community and regional levels. Moreover, there were significant regional variations, with the Northeast region emerging as a prominent area where the use of sensitive words on radio potentially contributes to violence.

Across the regions, approximately 33.6 percent of respondents have witnessed the use of certain sensitive words on radio that caused conflict/violent situations, which is also prevalent at the community level (34 percent). Although the findings show that electoral related conflict/violence are similar at the regional (29.1 percent) and community (29.9 percent) level, land, ethnic, and chieftaincy related conflict/violence differs slightly, with a higher conflict/violence rate at the community than the regional levels (see Figure A28).

Further, on social media, the use of sensitive words mostly leads to violence in electoral and chieftaincy violent-prone communities compared to political and land/Ethnic violent-prone communities. However, as seen in Figure A30, a larger proportion of the respondents from electoral violence-prone communities have witnessed violence through the use of sensitive words on radio compared to other violent-prone communities.

The results, presented in Figure A31 (panel A), indicate that only a small minority of respondents (less than 10 percent) were willing to physically or verbally confront or attack someone who shares the same political party affiliation with them and uses unkind words on radio against their favorite electoral candidate in their community. A plurality of respondents indicated that they would simply "do nothing" (43.6 percent), while others reported that they would have a civil discussion with the offender (41 percent). Furthermore, females are more likely to do nothing while males are more likely to engage in civil discussion with the offender. There is much variation across age groups and hotspot status. These patterns are generally similar to what we observe for respondents' reaction to unkind words from someone who shares their ethnic background against their traditional authority (Figure A31, panel B).

The analysis also provides insights into the criteria that respondents use to assess the credibility of a news item (Exhibits 22 and 23). Across all the

subgroups under gender, age, and hotspot status, the most commonly cited criteria are reliability, followed accuracy, truthfulness, and completeness, in that order. A similar pattern is observed with the regional distribution, although among the four key features, there is some variation in importance across the eight regions.

Exhibit 21. Respondents' Perception of What Feature a Credible News Story Should Possess, by Region
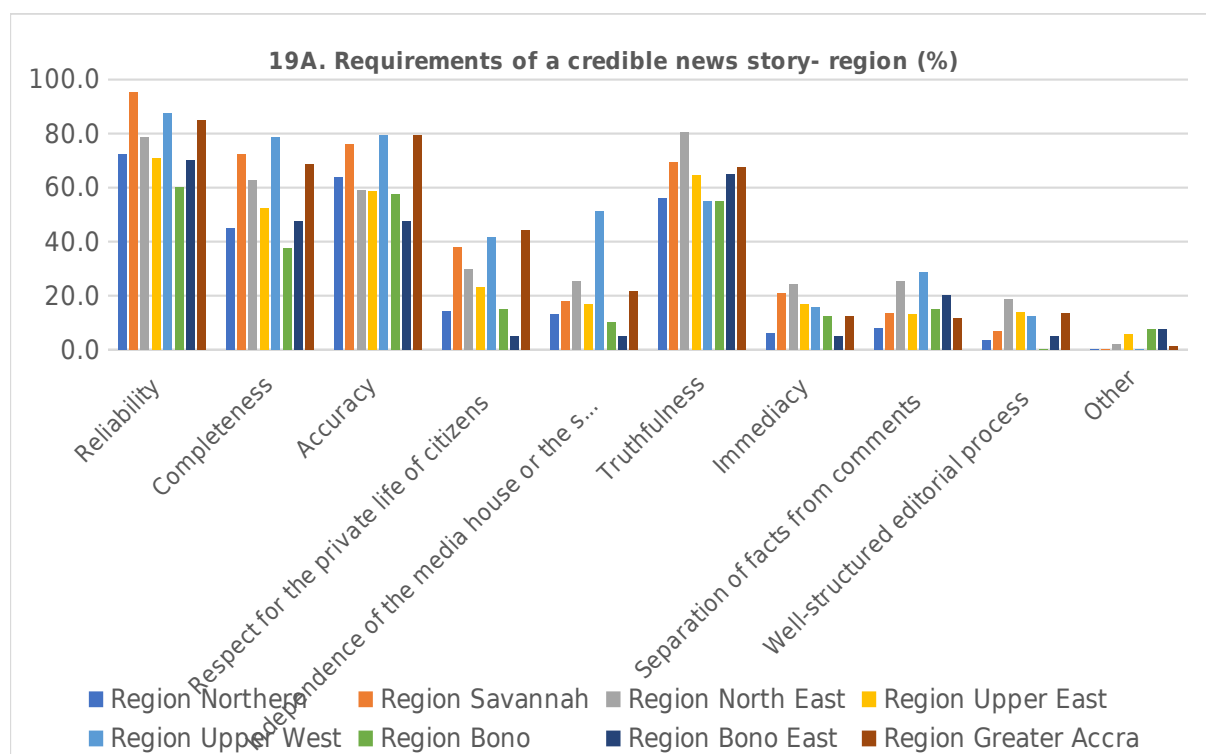
Exhibit 22. Respondents' Perception of What Feature a Credible News Story Should Possess, by Demographic

19B. Requirements of a credible news story by sex, youth status & hotspot status (%)

■ Sex Male ■ Sex Female ■ Youth Status Youth(18-29yrs)
■ Youth Status adult(30+yrs) ■ Hotspot Status Hotspot ■ Hotspot Status Non-Hotspot

Categories (x-axis): Reliability, Completeness, Accuracy, Respect for the private life of ci..., Independence of the media house ..., Truthfulness, Immediacy, Separation of facts from comm..., Well-structured editorial process, Other

Source: Survey, May 2023

POTENTIAL GAPS AND VULNERABILITIES

This sub-section was studied using qualitative data only. There is a growing inter-media convergence whereby the lines between legacy media and new media are becoming increasingly blurred. Many radio stations have digital platforms that are used for information dissemination. Nonetheless, there are geographical, gender, and generational dynamics to the exposure to and use of certain kinds of media. As shown in the quantitative results above, most Ghanaians, especially those in rural areas, rely on mainstream radio stations for information. Owing to the wide reach of radio stations in the country, it is necessary to understand any potential gaps that could increase the possibility that they may be involved in the spread of misinformation. This section highlights the core vulnerabilities central to the media ecosystem of which radio and social media are central parts.

MEDIA OWNERSHIP STRUCTURE

The ownership structure of radio stations is a critical factor in the editorial practices and processes of the stations because media owners' interests can override journalistic ethics. Data from qualitative interviews conducted with radio station managers revealed that political influence affects the media space. One key informant stated that 80 percent of private radio stations in Ghana are either owned by politicians or heavily influenced by politics. Key informants reported that politicians and people with unalloyed affiliation to political parties own about a third of the media in Ghana. Sometimes, it is surrogates of the politicians who own the media companies. Many of these have TV stations in addition to their social media platforms. This explains why it is commonplace to hear political discussions and analysis on the airwaves in Ghana and political party representatives heavily paneled on stations. This structure also feeds into the social media platforms of these media companies, which target specific

audiences. In the context of the competitive electoral system in Ghana, politics in Ghana has fueled misinformation and disinformation.[9]

Although the qualitative findings identify widespread politicization of the media environment, the descriptive results from the radio station managers survey suggest that radio programming might be less partisan than is popularly believed, with only about 15 percent of stations affiliated with a politician or political party and less than 10 percent of radio stations airing content that is more sympathetic to one political party over another.

ACCESS TO INFORMATION

Lack of information for individual journalists and media institutions sometimes results in the publication of stories that are not entirely true. Short of filing a formal Right to Information request, media houses sometimes struggle to gain access to relevant information. Even then, the Right to Information Act does not necessarily guarantee access since public institutions and agencies regularly refuse to comply with requests. In a recent report on compliance with the Right to Information Act, the Ministry of Information revealed that the Right to Information Commission fined 14 public institutions approximately 1,310,000 cedi for failing to give information on their institutions to the public.[10] However, some media houses are able to leverage their personal or institutional ties to gain privileged access to restricted information.

COMMERCIALIZATION, COMPETITION, AND SCOOP CULTURE

As shown above, the Ghanaian radio station ecosystem is dominated by commercial radio stations. Many radio station manager respondents pointed to competition among commercial radio stations as one of the key factors driving "scoop culture," where radio stations are jostling to be the first to break the news without adequate checks and verification. The breaking news culture is one of the ways radio stations derive high listenership, which also links to advertisement and revenue generation. Since revenue from promotions and advertisements is central to the survival of commercial radio stations, getting the news out fast has become part of their practices. The radio managers' survey also confirmed that the marketplace is fundamentally important, and most of the radio stations surveyed compete with others. A large majority of them consider "increasing the number of listeners" and "attracting or retaining advertisers" as very important when deciding what to broadcast.

LACK OF PROFESSIONALISM

The media has come under scrutiny for its lack of professionalism. Media practitioners interviewed qualitatively reiterated the fact that professionalism in media practice has dipped. They partially attributed this to lack of adequate training and what some referred to as a lack of intellectual capacity of some media practitioners. Media training institutions with short training periods (only three months, in some cases) are churning out media personnel en masse but without the quality links to the broader system of education and professional

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[9] This is exacerbated by a lack of diversity in media ownership, which shapes agenda-setting. While the media is diverse, Agyemang (2020) shows that the dominant male presence on radio and other media spaces shapes narrow agendas that exclude marginalized groups, such as women and people with disabilities, while amplifying the voices of the political class.

[10] https://www.graphic.com.gh/news/general-news/14-institutions-fined-gh-1-3m-for-non-compliance-with-rti-law.html#:~:text=Fourteen%20public%20institutions%20have%20been,applicants%20access%20to%20information%20requested.

training. The lack of professionalism is responsible for the rise in sensationalism in news presentation. A unique problem that has emerged with the proliferation of local language broadcasting is the lack of tailor-made training programs specific for Ghanaian language broadcasting, resulting in challenges with diction, translation, and interpretation from the English language to the various other languages. Another consequence of the lack of professionalization is the increasing trend of journalists engaging in questionable conduct on social media. As one respondent observed:

> "[Some] journalists want to be influencers, but the two cannot coexist because the ethical values and practices are not the same. One will affect the other because the registers are not the same. It is often journalism, which is sacrificed for likes, viewership and followership." (Trainer of journalists)

RESOURCE CONSTRAINTS

Resource constraints relate to many aspects of media work in Ghana. When radio stations sell their slots to organizations and individuals to use, they expose themselves to the spread of misinformation and disinformation. Unfortunately, resource constraints do not always permit them to sieve out the intended "sponsors" or clients. Many media firms can barely survive. They are under immense financial pressure and are understaffed and have limited equipment with which to work. Resource constraints is one of the critical areas of vulnerability that can be exploited by extremist groups for purposes of fomenting violence (Department of Communications and Media Foundation for West Africa, 2023).

PRECARIOUS WORKING CONDITIONS

With the absence of unions in private media spaces, privately employed journalists receive low remuneration, work long hours, and sometimes use their own resources to bring the news to people. Low wages make journalists susceptible to bribery and corruption. The intention of the bribes is to influence the kind of news that is published. This exposes a weakness in the ethical conduct of journalists and raises questions on the veracity and quality of news churned out daily. The practice is seemingly widespread in Ghana, to the extent that there are coined names for the monetary influence that journalists receive to "augment" their low wages. Words like *soli*, brown envelope, and transportation are commonplace in Ghanaian journalism. One respondent complained that this affects the credibility of journalists and affects their perception in the public eye.

REGULATORY AND INSTITUTIONAL REGIME

The structure and mandates of the NCA and National Media Commission leave gaps that are rooted in the regulatory regime. The NCA is a government institution mandated to issue licenses and comprises identifiable bodies, including some government appointees, on its board. The regulatory regime did not foresee the emergence of social media and other digital outlets. While there is no broadcasting law in Ghana, technology has also rapidly progressed, while the institutional setup has been slow to adapt. While regulation is criticized for some of the problems in the ecosystem, many practitioners issued caution, saying, "There is a need for regulation but not censorship." The NCA does not insist on disclosing media format when giving licenses. This gives rise to saturation of programs and content, which in turn drives unhealthy competition.

While there is diversity and pluralism, there is also some uniformity in programming, which drives sensationalism. Content and program copying is also driving the lack of professionalism. One research participant argued that "Media pluralism should go beyond the number of outlets. It should show the diversity of program content."

OTHER FACTORS
Key informants identified several other vulnerabilities in the media ecosystem. First, because of the intense competition for listeners and advertisers, radio stations are increasingly allowing themselves to be influenced by social media trends and practices to remain relevant. Two, there has been a marked decline in editorial collaboration between media houses in the country. Third, there is a serious gap in digital and media literacy that promotes the spread of misinformation. And finally, there has been a rise in "citizen journalism" on social media, which often leads to the spread of false news because of the lack of editorial oversight.

RESEARCH OBJECTIVE 4: STRENGTHS OR RESILIENCIES AMONG RADIO STATIONS
Despite the vulnerabilities identified above, there are built-in strengths to guard against the worst forms of misinformation, especially those that could trigger violence or could be exploited by extremists. Radio managers interviewed for the study asserted that their stations have put in place editorial controls to ensure that any information they put out into the public domain is verified. But even radio stations that enforce strict editorial standards sometimes inadvertently end up spreading wrong information out of lapses in judgment or circumstances beyond their control. Three instances illustrate this point. In the first instance, a public official gave out false information while being interviewed on live radio. In the second example, a radio station contributed to spreading a fraudulent money doubling scheme. In the third case, a radio station was tricked by an "April Fool's" prank to wrongfully announce a fire outbreak. In all these cases, the radio stations retracted the stories when it came to their attention that they had been deceived, as evidenced by the quotation below.

> "A radio station granted an interview to somebody like that, and it went viral. So, when I heard the information, first of all, I just called the manager of the radio station and told him. I sent the audio to him and said, 'Listen to your own station. That was done in your own station, so, listen to it'; then, he listened to it and said that he did not even know the time this thing happened, and I said, 'Okay, fine. Render an apology or else, anybody can sue the fellow and sue you in addition.' He will sue you because it was part of your process that gave him the opportunity to say what he has said. So, when you issue a disclaimer, that is it. So, anybody who now wants to sue him, go ahead, and sue him as a person. Yes. So, those are the issues." (Radio station manager, Upper East Region, May 7, 2023)

Another identified strength is the diverse sources from which the listening public gets information. This serves as a kind of check and balance in the media ecosystem. While a plurality of the media landscape has regulatory challenges, it also introduces an built-in resilience. In terms of consumption of media content, listeners have the choice of alternative outlets. In addition, media consumers can verify the content from other outlets. The existence of regulatory institutions such as the NCA and the National Media Commission, responsible for media

regulation in different ways, is also a strength in the media ecosystem. In addition, the emergence of fact check platforms has introduced an additional layer of verification. Thus, even when the internal editorial process of a media house breaks down, the public can still access verified or verifiable information.

Mechanisms to avert political/electoral or ethnic violence: In terms of misleading information, the editorial practices in media spaces gives an ample space for rethinking content and its wider implications. As discussed above, many established media houses have editorial policies that check content that can potentially be exploited for violent purposes. Despite the scoop culture practices of legacy media, adherence to editorial policies still exists. Another important element of resilience is in the relationship between radio stations and their constituencies and communities, which allows for information sharing, verification, and on the ground activities that bring people closer to the stations. Many stations have outdoor events and community outreach programs to share and receive information in a transparent manner to avert possible problems. The open forums organized by radio stations are important for discussing pending issues that might be emerging in communities.

Similar to the qualitative findings, the radio managers survey confirms that the vast majority of stations report editorial policy in place to conduct fact-checking, and many stations have formal processes for vetting stories before they go on air.

RESEARCH OBJECTIVE 5: DEMOCRATIC ACCOUNTABILITY

The study team assessed Objective 5, on democratic accountability, using qualitative data only. Findings from the study showed that radio stations in the study areas perform important roles in the promotion of democratic development. Their core role, of course, has to do with providing the public with timely information about public affairs. In addition to this, they also contribute to the proper functioning of democracy, provide a platform for citizens to engage with public officials, and support community development efforts. The role that radio stations play by providing timely information to the public on a range of issues was acknowledged by the various categories of respondents interviewed for this study, including traditional leaders, media institutions, communication experts, and participants in the FGDs. For instance, on the other roles radio stations or social media platforms play in Ghana's democracy, an opinion leader responded as follows:

> "Yes, many times like this eh... how do you call them? The idea of eh... tolerance to each other, environmental issues, social issues and even our farming and business areas. They do have all eh, programs that deal with such areas." (Leader of herdsmen, Northern Region, May 4, 2023)

Respondents recognized that radio stations contribute to the proper functioning of democracy by facilitating the process by which public leaders could be held accountable. They do this through various means. These include serving as watchdogs, rallying the people for civic action, holding elected leaders accountable, and investigative journalism that helps expose official malfeasance or service delivery shortfalls. Speaking about the roles that radio stations play, one respondent observed as follows:

> "They are watchdog too, they provide platform for democratic discourse that is how you can get people calling in and expressing their views and so that is the number one, then the information given or sensitization then the others are the education and entertainment." (Official of Ghana Independent Broadcasters Association, Greater Accra Region, May 11, 2023)

Through these interventions, radio stations contribute to empowering citizens to hold local authorities and national leaders accountable. As the examples above indicate, the radio stations themselves also actively participate in efforts to bring transparency to public affairs through their routine reporting and investigative journalism. The example of an Accra-based FM radio station's investigative report that led to the government intervening to reduce the practice of scale-rigging by cocoa merchants shows that radio stations can, and indeed do, contribute to democratic development and social accountability in the country.

However, as discussed above, it is important to note that radio stations in the country have achieved these successes amid severe constraints. The combination of financial constraints, lack of adequate physical and technological infrastructure, and poor training is an ominous mix of factors that risks undoing the stellar roles that journalists in the legacy media have played to support Ghana's democratic development over the decades. These issues also raise a serious question about the ability of these stations to sustain the level of rigor and persistence that have characterized some of the most celebrated pieces of investigative journalism.

CONCLUSION

Radio stations in Ghana play immeasurable roles, including informing, educating, and entertaining the populace. Radio and TV (legacy media), in Ghana, like elsewhere, face immense vulnerabilities and limitations. Among these are mis/disinformation with the potential to breed conflict, particularly in identified conflict-prone communities. These vulnerabilities include the emerging threat of terrorism, particularly in the northern regions of Ghana, where terrorist threat from the northern border looms. Using methods and data triangulation in eight purposively selected regions, this study assessed radio and social media in the country. It also studied the administrative, ownership, and philosophical leanings, gaps and vulnerabilities, and strengths and resiliencies of radio stations, the roles they play in the promotion of democratic accountability, and the extent of misinformation and disinformation through radio and social media in the study communities.

The triangulated data revealed that family and friends and other neighborhood sources of information (from neighborhood discourses, community events such as funeral grounds and *durbars*, and community centers) feature prominently on in daily life as sources of information. Grounds are fertile for even mainstream radio and TV sources to spread false information inadvertently, although they always retract these promptly when it comes to their attention. The assessment concludes that there are enormous gaps and vulnerabilities within radio stations in the study areas that could contribute to the spread of misinformation, including institutional vulnerabilities such as inadequate internal and collaborative editorial controls across media houses, inadequate remuneration for reporters/journalists, poor enforcement by the industry regulator, and a lack

of media law in Ghana. Despite these weaknesses, the assessment identified many built-in strengths and resilience for mitigating extremist exploitation and violence and promoting democratic accountability within their communities.

RECOMMENDATIONS

According to the assessment data, misinformation and disinformation stems from TV, radio stations, and social media platforms and their viewers, users, and listeners. To mitigate misinformation and disinformation, the study team recommends two approaches: initiatives targeting the supply side, focusing on the sources of news and information, and initiatives targeting the demand side, focusing on listeners and users of the sources and content of news/information. The recommended initiatives have been categorized into short, medium, and long-term.

RECOMMENDATIONS TO ADDRESS RADIO AND SOCIAL MEDIA VULNERABILITIES TO EXTREMIST INFLUENCE

SHORT TERM
1. The findings illustrate that politically aligned, private, and local language radio stations spread misinformation and disinformation. Non-aligned radio stations, together with other stakeholders (CSOs, faith-based organizations, traditional authorities, etc.), should engage the National Media Commission, the NCA, and the Ministry for Communication and Digitalization to develop and enforce the code of ethics and new regulatory measures to minimize such occurrences.
2. The data suggest that some radio stations remain non-aligned and therefore do not spread mis/disinformation. Furthermore, it is evident that political discussions, news, and morning shows are the programs most responsible for spreading misinformation and disinformation on radio. Key regulatory bodies such as the NCA and the National Media Commission should organize training for journalists and presenters of these programs, as well as run advertisements using the evidence from this assessment to encourage non-alignment and the avoidance of mis/disinformation during radio programs such as political discussion, news, and morning shows.
3. The assessment also demonstrates that some individual journalists remain professional and uninfluenced by money. The study recommends that the NCA and Media Commission establish recognition and awards with funding from key development partners such as USAID to support recognition and awards for these journalists. The recognition awards must be publicized to encourage other journalists to remain professional and uninfluenced by money.

STRATEGIES TO MITIGATE THE NEGATIVE IMPACTS OF MISINFORMATION/DISINFORMATION SPREAD VIA RADIO STATIONS OR SOCIAL MEDIA

SHORT TERM
1. USAID should support awareness creation on the negative impacts of misinformation/disinformation spread through radio stations or social media to minimize the incidence of misinformation and disinformation through funding the development and implementation of campaigns on social media (WhatsApp, Facebook, TikTok, and YouTube) and radio stations.

2. USAID, in collaboration with the National Commission for Civic Education (NCCE), should create awareness in the communities studied through radio, television, social media, and community events using drama, advertisement, entertainment campaigns, and examples of how misinformation and disinformation affect ethnic, chieftaincy, electoral, and land-related conflicts and how these issues can be mitigated. The community awareness campaign should be translated into the different languages spoken in the communities in the Northern part of Ghana, Bono and Bono East and Greater Accra, and be aligned to the most listened to radio programs: political discussions, news, preaching, and music.
3. NCCE should develop training and educational workshops/programs funded by USAID and the GOG, CSOs, and multilateral organizations to train users and listeners of radio and social media on how to identify misinformation and disinformation content and how these are spread via digital means. NCCE and fact-checking organizations such as the Media Foundation for West Africa can train users and listeners of radio and social media and encourage the use of fact checking mediums to verify information received from radio and the main social media platforms. In addition, they should encourage citizens to report or deal with misinformation and disinformation when they occur.

MEDIUM TERM
1. USAID should collaborate with fact-checking agencies like the Media Foundation for West Africa and NCCE to develop and implement change campaigns through workshops, community events, and advertisement to mitigate the use of sensational, exploitative, false, and baseless claims by some religious leaders on radio, TV, and social media and through family and friends.
2. USG initiatives should focus on funding for running campaigns across the various regions, especially the hotspots, to debunk misinformation and disinformation on the Ghanaian election from now till December 2024.
3. In terms of the regulatory regime, the NCA is a government institution mandated to issue licenses. The NCA should improve the requirements for licensing radio stations, such as employment of qualified journalists and monitoring radio stations licensed.
4. USAID and the GOG must sponsor the NCCE to develop and disseminate information in communities using mobile vans on the ill effects of mis/disinformation, the need to cross-check information on social media, and how to do so. These entities should collaborate to create and sponsor forums (e.g., a radio or TV program, spot) on traditional media platforms/forums, targeting traditional and community opinion leaders, on the need for peaceful social cohesion. These entities should also facilitate and sponsor a similar forum on radio and TV for youth and the mainstream political parties to discuss the dangers of lack of social cohesion/conflict.
5. The findings also show that radio stations sometimes inadvertently put out false information on radio because of the scoop culture of wanting to be the first with breaking news. Stakeholders should strengthen the democratic accountability of the radio and TV stations. This can partly be accomplished by the NCA organizing training workshops for radio and TV stations, supported with funding from development partners, including USAID and the GoG. The NCA should use cases of TV and radio presentations of false information during political discussions, news, and religious and music sessions to encourage presenters to verify information

before broadcasting them. USAID should focus on improving the in-house capacity of radio stations to engage in fact-checking. Most stations source their own content and are eager for that content to be truthful.

LONG TERM

1. Findings from the FGDs, survey, and KIIs support initiatives to involve traditional leaders in dealing with misinformation and disinformation. USG funding should support initiatives to equip traditional leaders to deal with misinformation and disinformation. This support should be in the form of funding to open dialogue and discussions with traditional leaders to sensitize and involve them in dealing with mis/disinformation by engaging their citizens in discussing the harm mis/disinformation could bring, especially in Greater Accra and other conflict hotspot areas.

INITIATIVES TO STRENGTHEN RADIO STATIONS' CAPACITY TO PREVENT OR MITIGATE POLITICAL/ELECTORAL OR ETHNIC-BASED VIOLENCE

SHORT TERM

1. The National Media Commission and the NCA should train radio and TV station manager and presenters with funding from the GoG and development partners, including USAID, to establish media management skills and credibility of news stories. Training should take into consideration the four key requirements for credible news stories and information from the findings: reliability, accuracy, truthfulness, and completeness. These should be incorporated into the training to establish media management skills and credibility of news stories.
2. There is very low uptake of fact-checking initiatives by TV and radio stations in Ghana, according to both qualitative and quantitative findings. The key limitations to engaging in fact checking are awareness, training, and resources. USAID should sponsor consultants to train journalists and support newsrooms with fact-checking software and tools and to fact check and debunk misinformation and disinformation, especially for political discussion programs, which are the most common sources of mis/disinformation on radio, along with other news stories at national regional level, and hotspots, targeted at gender, and age specific groups.
3. USAID should collaborate with fact-checking agencies to run a campaign to encourage media personnel and citizens to adopt routine fact-checking behavior. USAID should collaborate with the Ministry of Communication and the NCA to train notable influencers to encourage fact checking and verification of news stories and information on social media platforms.
4. The number of stations self-consciously broadcasting polarizing content appears to be relatively low. The NCA should actively monitor these stations and their broadcast content as part of a broader strategy of fighting mis/disinformation.

MEDIUM TERM

1. The NCA and all radio stations should champion the course of regulation for verification of information by radio stations, journalists, and the public.
2. USAID and the GoG should provide scholarships to train outstanding journalists for further qualification in journalism, management, and credibility skills.
3. Another key area for building the capacity of radio stations is access to information challenges. Initiatives under the auspices of USAID should

involve partnership with the GoG to set up media resource centers in the regional capitals to provide easy access to, and tutorials for, credible sources of information.

4. USAID should engage professional media bodies and staff of media regulatory agencies and related NGOs/CSOs (National Media Commission, Media Foundation for West Africa, Ghana Broadcasting Corporation, Private Media Practitioners Association, Ghana Journalists Association, Independent Broadcasters Association, etc.) in a one-day conference/workshop on how to use existing information sources, including the internet and electronic search engines.

LONG TERM

1. The findings identified a lack of editorial collaboration in Ghana. Interventions by the GoG in conjunction with USAID to address this issue should focus on facilitating the establishment of editorial collaboration among media houses in Ghana.
2. The findings also identified opportunities to explore digital and media literacy place vulnerability from gender, generational, and geographical perspectives since technology has outpaced the regulatory regime. USAID should collaborate with the Ministry of Communication, the Ministry of Gender, Children and Social Protection, the National Media Commission, and CSOs such as Women in Law and Development in Africa to work on narrowing the gender and youth divide in digital and media literacy.
3. There is a lack of a broadcasting law in Ghana. This leaves a vacuum where stations inadvertently end up spreading wrong information out of lapses in judgment or circumstances beyond their control. This gap has left Ghana's media space plagued with what some practitioners described as "liberalisation without regulation." Many of the media practitioners and radio station managers interviewed repeatedly cautioned that "there is a need for regulation but not censorship." In the long term, USAID should lobby the GoG to establish regulation but not censorship. To do this, USAID must engage key stakeholders in the media and the related legal space (National Media Commission, Ghana Journalists Association, Ministries of Communication and Legal Affairs, Ghana News Agency, Ghana Broadcasting Corporation, Association of Private and Independent Broadcasters, CSOs in media, tertiary institutions in communication/media studies/journalism, etc.) to put together and codify a broadcasting law for Ghana.

OPPORTUNITIES FOR RADIO STATIONS TO PROMOTE GREATER SOCIAL COHESION IN THE COMMUNITIES THEY SERVE

SHORT TERM
1. USAID should sponsor the NCCE to facilitate community announcements using community *durbars* on the importance of peaceful social cohesion, and raising awareness among journalists, community radio stations, and youth groups of political, ethnic, and community organizations on the need for peaceful co-existence, social cohesion, and the need to cross-check social media, radio, and TV information they find.

1. The GoG should partner with USAID to fund workshops within the media space to discuss and propose viable solutions to the problem of the outpacing of digital technology over regulation in Ghana's media space and assess the role of targeted radio stations in democratic accountability. The GoG should take ownership of this critical national need, which, if addressed promptly, will facilitate citizens' and media professionals' access to and responsible sourcing and management of information. This will help reduce mis/disinformation and the risk it poses to the nation.

2. The USG should provide funding to encourage radio stations and community engagement workshops and *durbars* in hotspot communities. The funding should include organization, facilitation, and documentation of workshops and *durbars*. Stakeholders' understanding of the ills of mis/disinformation could help them carefully manage the information they source, communicate, and consume, possibly including crosschecking this information for authenticity before they consume and disseminate it. This could promote social cohesion for the public good.

LONG TERM

1. In the long term, USAID should engage radio stations and hotspot communities from the engagement workshops and *durbars* to implement the solutions from the workshops and *durbars* after evaluation.

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APPENDIX 1: ADDITIONAL RESULTS IN TABLES

Table A1: Household demographics across key indicators

Household Demographics			
Average Household size	**7.2**	**Average Age (yrs.)**	**33.1**
		Economically active (percent)	**70.6**
No. of Males (mean)	**3.5**		
No. of Females (mean)	**3.8**	**Hotspot status**	
No. of Under-5 (mean)	**1.4**	*Hotspot (percent)*	**52.9**
Sex		*Non-Hotspot (percent)*	**47.1**
Male (percent)	**58.6**	**Youth status**	
Female (percent)	**41.4**	*Youth (18-29yrs) (percent)*	**45.9**
		Adults (30+yrs) (percent)	**54.1**
Religious Affiliation			
Christian (percent)	**46.5**	**Region**	
Muslim (percent)	**49.3**	*Northern*	**31.3**
Other (percent)	**4.2**	*Savannah*	**8.7**
Education (highest level completed)		*Northeast*	**8.9**
No education (percent)	**17.4**	*Upper East*	**17.6**
Primary (percent)	**10.8**	*Upper West*	**12.1**
JHS/Middle School (percent)	**15.9**	*Bono*	**3.3**
SSS/SHS (percent)	**32.1**	*Bono East*	**3.3**
Tertiary/Post-secondary (percent)	**23.8**	*Greater Accra*	**14.8**
Total Sample (N)			**1206**

Table A2: FM stations in the country as at the end of 2022

Name of regions	Total no. Authorized	Public	Public (foreign)	Community	Campus	Commercial	Total no. in operation	Total no. Not in operation
Ashanti	102	2	1	16	4	79	78	24
Bono	59	1	0	6	2	50	42	17
Bono east	30	2	0	4	0	24	26	4

Ahafo	15	0	0	1	0	14	9	6
Central	58	2	0	13	3	40	39	19
Eastern	53	2	0	15	1	35	47	6
Greater Accra	77	2	3	10	4	58	63	14
Northern	49	3	0	10	2	34	31	18
Savannah	12	3	0	4	0	5	8	4
Northeast	13	1	0	5	0	7	3	10
Upper East	35	2	0	10	3	20	23	12
Upper West	31	2	0	11	2	16	20	11
Volta	46	3	0	5	1	37	37	9
Oti	13	1	0	3	0	9	9	4
Western	87	2	1	8	2	74	59	28
Western north	27	3	0	0	0	24	19	8
Total	707	31	5	121	24	526	513	194

Source: National Communications Authority (2022). List of authorized VHF – Fm radio stations in Ghana as at the end of 2022.

Table A3: Household ownership of ICT equipment & internet at home

Region	Radio	Television	Telephone - Fixed line	Telephone - Mobile	Computer	Internet at Home
Ghana	57.2	60.4	0.9	92.5	15.0	22.4
Western	56.7	68.5	0.9	92.3	13.3	24.1
Central	51.0	59.2	0.5	88.2	14.5	21.3
Greater Accra	56.1	83.1	2.0	97.8	27.6	37.7
Volta	53.2	45.0	0.5	88.6	7.6	14.2

Eastern	65.3	60.5	0.6	92.7	13.9	16.8
Ashanti	64.9	64.5	1.5	96.4	17.5	27.3
Brong Ahafo	53.7	52.0	0.6	89.2	12.8	18.7
Northern	45.9	44.0	0.1	91.4	6.7	10.2
Upper West	51.2	32.9	0.3	87.0	7.2	14.3
Upper East	47.1	38.3	0.2	79.2	8.2	9.3

Source: UNICEF, World Bank, UNDP, KOICA, and USAID, Snapshots of key findings: Ghana Multiple Indicator Cluster Survey 2017/18. 2019, UNICEF, World Bank, UNDP, KOICA, USAID, Ghana Statistical Service: Accra, Ghana.

Table A4: Listener's perception on misinformation on radio that can lead to escalation of electoral or extremist violence (1=Strongly disagree; 5=Strongly agree)

Indicator	Gender		Age category		Hotspot status		All
	Male	Female	Youth	Adult	Hotspot	Non-Hotspot	
Information received on radio is powerful and can affect the listener's mood	4.3	4.3	4.3	4.3	4.3	4.3	4.3
Information received on radio is powerful and can cause **electoral** conflict/violence	4.3	4.1	4.2	4.2	4.2	4.2	4.2
Information received on radio is powerful and can cause **chieftaincy** conflict/violence	4.1	4.0	4.0	4.1	4.1	4.1	4.1
Information received on radio is powerful and can cause **land** conflict/violence	4.1	4.0	4.0	4.1	4.0	4.0	4.0
Information received on radio is powerful and can cause **tribal** conflict/violence	4.1	4.0	4.0	4.1	4.0	4.1	4.1
Information received on radio is powerful and can cause **other** conflict/violence	4.6	4.5	4.5	4.6	4.4	4.6	4.5
Information received on radio is powerful and can influence a listener's voting behavior	4.0	3.8	3.9	3.9	3.9	4.0	3.9
Information received on radio is powerful and can influence a listener to change political affiliation	3.9	3.7	3.8	3.8	3.8	3.9	3.8
A radio station can be used as a conduit for violence	4.2	4.0	4.1	4.1	4.0	4.2	4.1
N	576	380	374	582	487	469	956

Box 1: Examples of misinformation that respondents have heard in recent times

Covid vaccine makes men impotent	When the vaccine came out, some people started spreading rumors that you will become impotent if you get vaccinated. Many people started feeling afraid because of these rumors. They said-- so many instances. So many instances. For some of us, we took the first vaccination to confirm if what they said was true, but that was not the case. (Traditional leader, Greater Accra Region, 23 May 2023)
Election/ secret EC recruitment	[T]here were times we heard on radio that the electoral commission is recruiting people to be trained for last year's assembly elections. We heard about it, this year too we've heard about it. Currently, we've heard about it and consistently, electoral commission has come out to say that they are not recruiting people and it is a cause to get everybody to worry because not once, not twice, this is the third time we have heard Electoral Commission's recruiting and they have come out to debunk those things and when you continually hear cases like that, it only points to one thing that yes, there is something happening but for some parochial interests, some people have decided not to share those information. [*Interviewer: These fake stories, where do they come from?*] Yes, some from radio. You hear about it on radio and then on social media. Yes, there was a time that we were also told that some people are secretly, I mean it was all over on radio, that people are secretly being registered. People are secretly being registered at the electoral commission; getting their names on the electoral roll for, you know future elections and this particular information also came not too long ago. It's on social media and radio too as well. But not on TV, yes. So, some of us have our sources at the Electoral Commission to do an unofficial search or unofficial investigations to really expose that piece of information that we have heard and then yes, also rely on Electoral Commission. (NDC party official, Greater Accra Region, 10 May 2023)
False allegation of Fulani activities	A journalist called Bafo. We use to live with him in this town. In Agogo, there was a case of a woman who was raped. She was about 50 to 60 years and according to the news, she was raped by Fulani but the moment we heard the news, this journalist carried out an investigation and he found out that the woman was working on the farm, and she fell asleep because she was tired. The woman was found very weak on her farm so that's why people started saying that she was raped. So that is one of the cases. (Fulani Chief, Bono East

	Region, 8 May 2023)
Galamsey at president's house in Kyebi	The recent News we heard about galamsey been dug just behind his residency at Kyebi, and we all believed it was true, only for the media to go and find out that it was not true or it was not as reported on social media and on the News. (NPP official, Greater Accra Region, 10 May 2023)
Homosexuals are pedophiles	Let me give you one, it is not just information but a campaign, this campaign on LGBTQ, the people who are proposing it are channeling all manner of false information that homosexuals are pedophiles for instance. This has nothing to do with the reality, but for propaganda purposes and to whip up public sentiment, and the attempt to win peoples sentiment, all manner of false information is spread out through social media and even mainstream media. (Communications expert, Greater Accra Region, 7 May 2023)
Accident in the community	Recently, there was an accident here and information was spreading that the victims had been crushed, that another vehicle ran over them smashing their heads. So, I went and greeted the family and asked circumstances surrounding the accidents and the brother told me, no car ran over them. Yes, it is true when they had the accident, they broke their heads, but no car ran over them. But even now, some people still believe that they were ran over by a car. Because that is what they want to hear and believe. (FGD Sumburungu, Upper East Region, 7 May 2023)
Death of a chief	I am sure we those here will remember this story. So, when we were listening to the program, then someone called in and mentioned a town, this is something that has happened so I can say it; it is about the chief they shot dead. I don't know if you remember this, at Seikwa [some members nodded their heads whilst others begun to discuss it undertone for few seconds]. So, the person called on air and just said Seikwa chief has been shot dead. And we all know in our Akan culture that, there is a way to convey such message. So, when he said that it made everybody in the community or let me say in the world to know what has happened. If this was a place where the elders were harsh, it could have led to violence at the radio stations. So, I see that the way some radio stations do their programs can lead to a very big problem on us. (FGD Berekum, Bono Region, 7 May 2023)

Death of public personalities (celebrities/chiefs)	I will say most of this false information are being circulated on TikTok. This is because, pictures of celebrities, dignitaries and highly respected persons posted with dirges and sorrowful songs which makes us think they have died. Only to later realize they are far from the truth. (FGD Berekum, Bono Region, 7 May 2023)

APPENDIX 2: ADDITIONAL RESULTS IN CHARTS

Figure A1: News consumption habits in the 8 regions- Sources of News
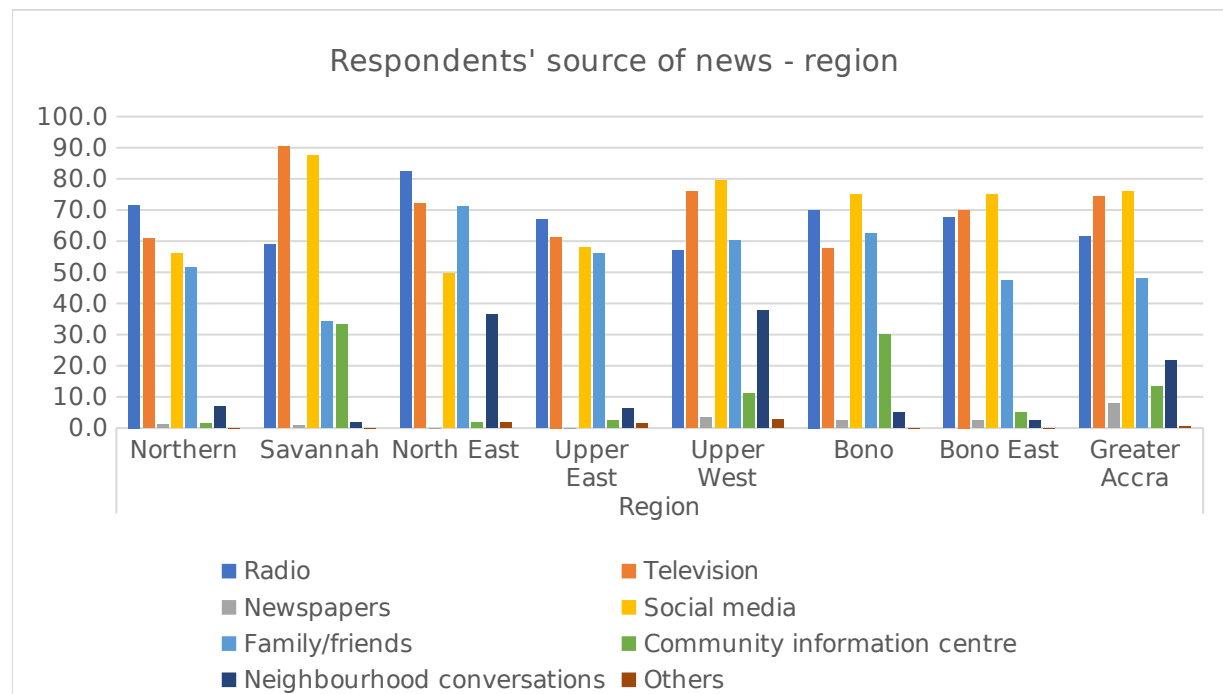
Figure A2: News consumption habits by gender, hotspot status, & age category - Sources of News
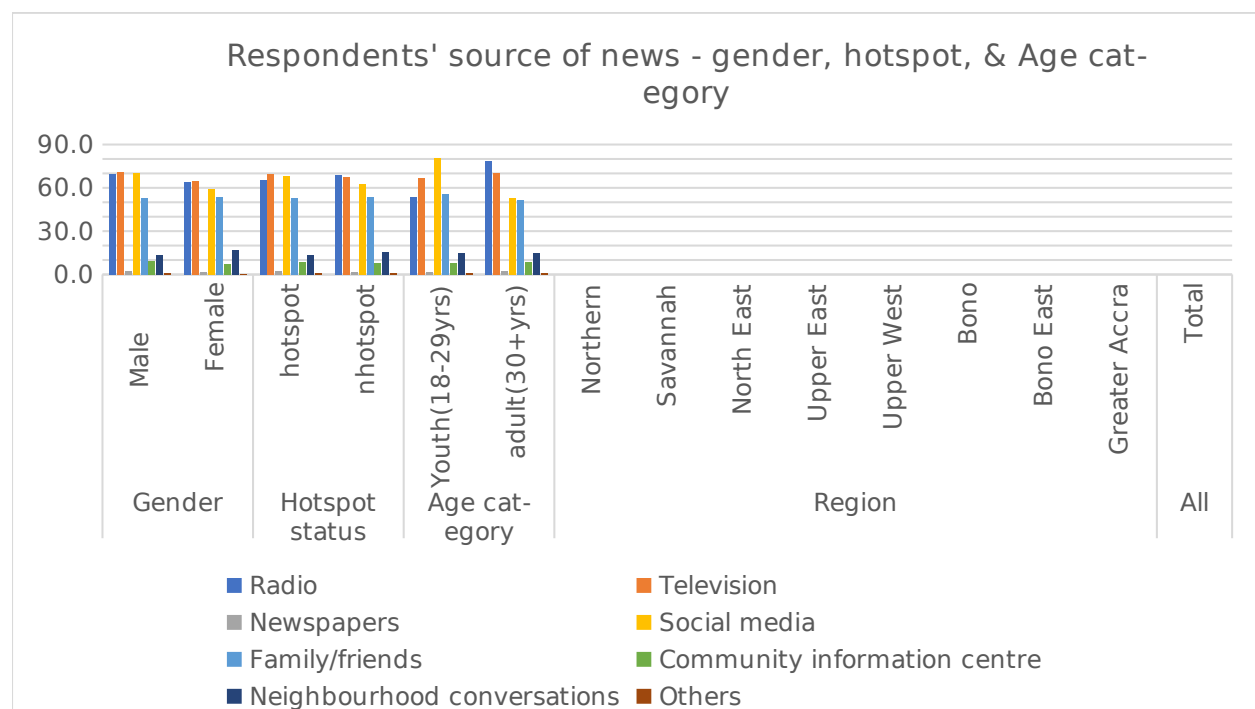
Figure A3: Average time spent on social media

Time spent on social media by gender, youth status&hotspot status

■ TikTok ■ Facebook ■ WhatsApp
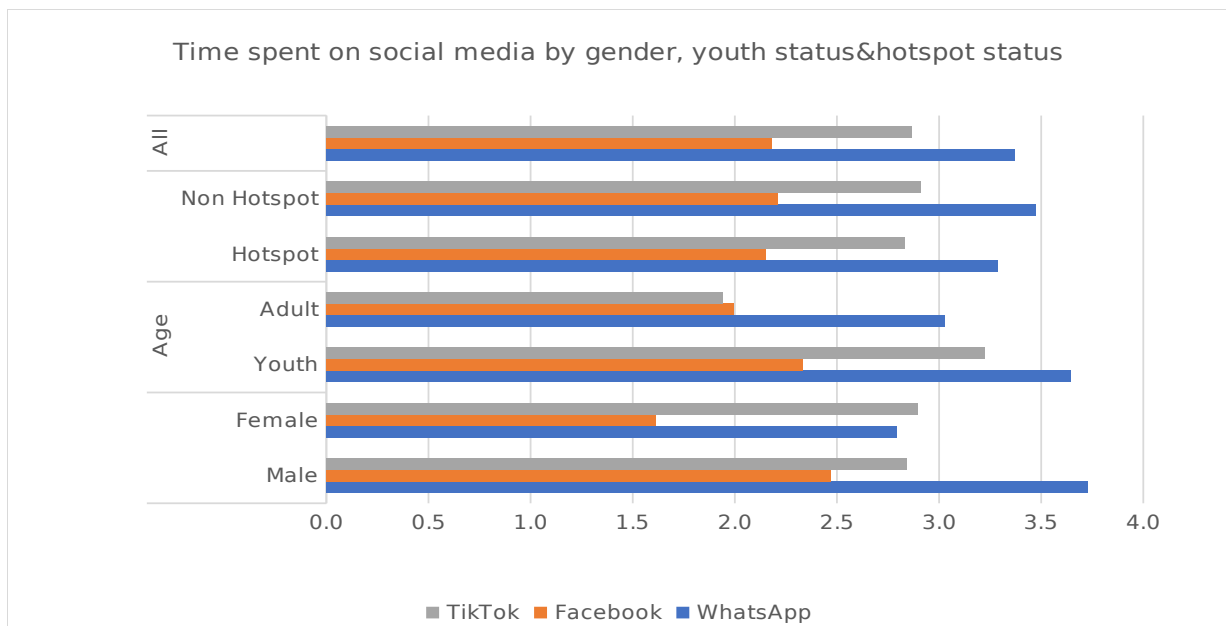
Figure A4: Time of the day listening to radio by gender, age category and hotspot status

Time of the day listening to radio-gender, age category, hotspot status

■ Male ■ Female ■ Youth(18-29yrs)
■ adult(30+yrs) ■ hotspot ■ nhotspot
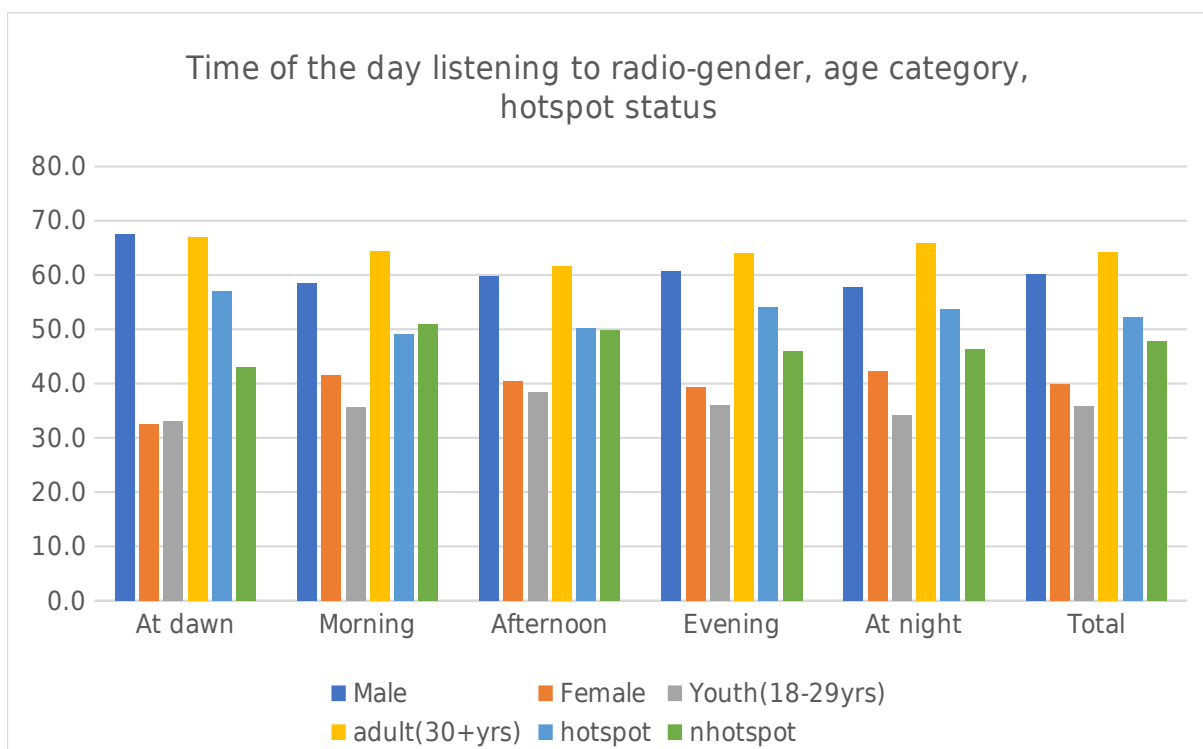
Figure A5: Given out information on media platforms that you knew was false (percent)
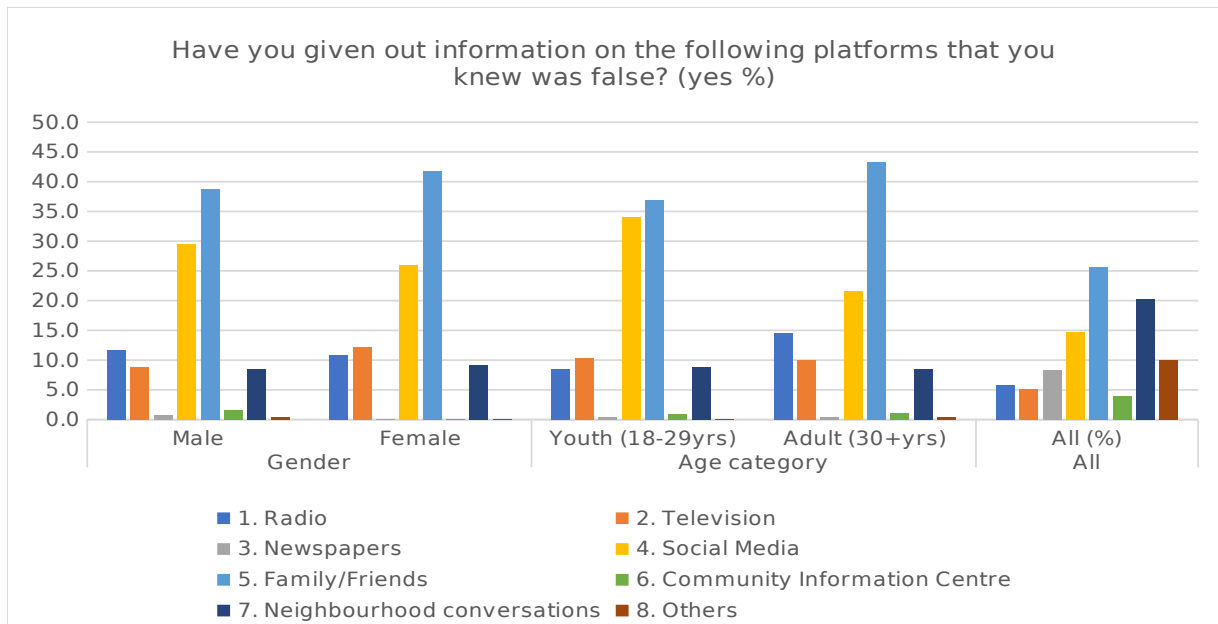
Figure A6: Percentage of respondents' encounter with forms of misinformation
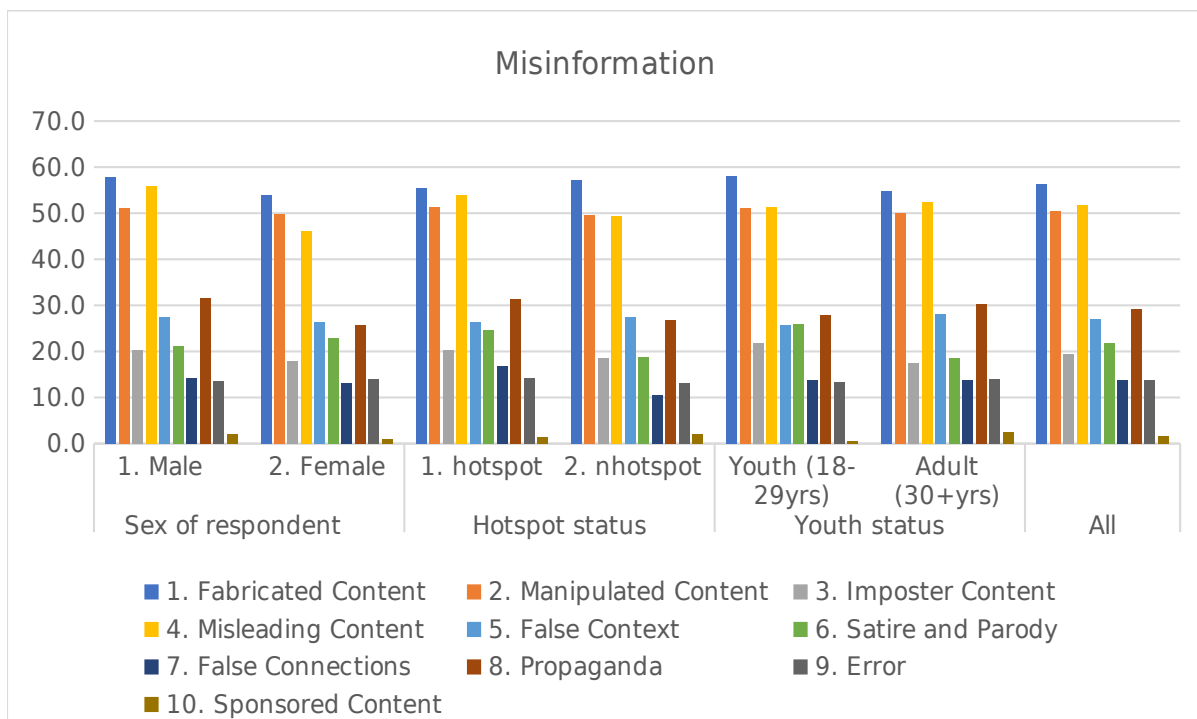
Figure A7: Percentage of respondents' encounter with forms of disinformation
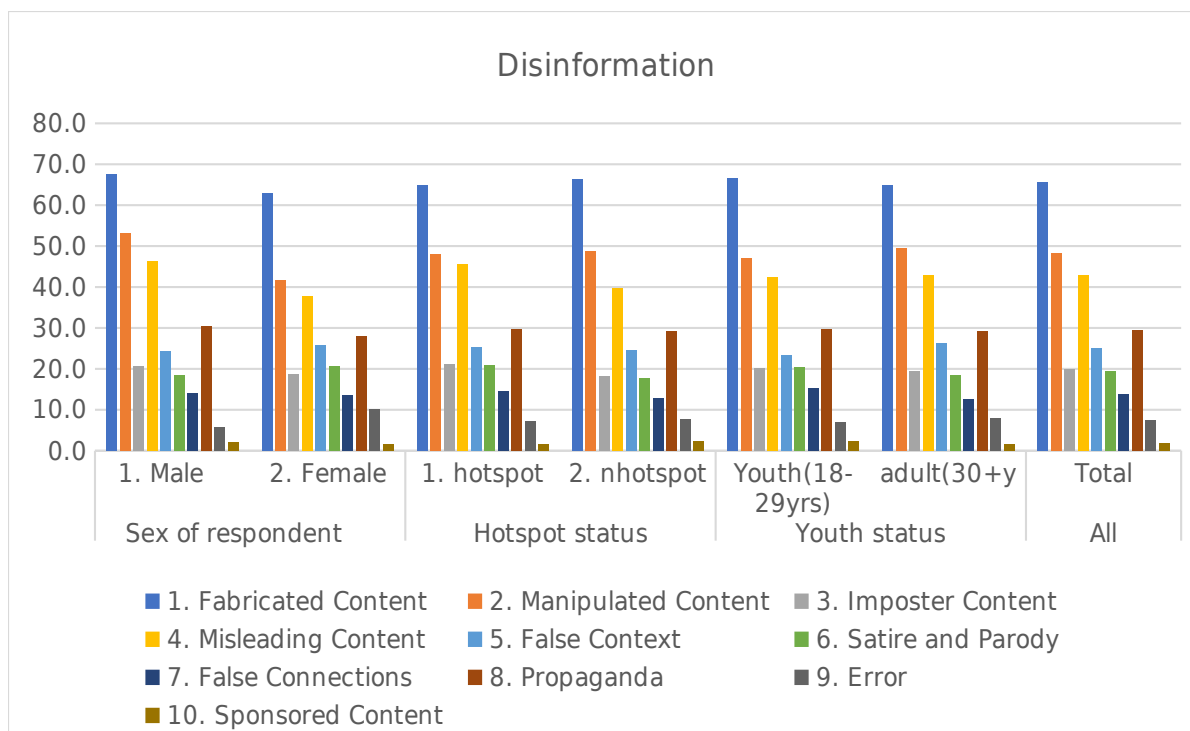
Figure A8: Incidence/Prevalence of mis/disinformation on radio by region and hotspot status
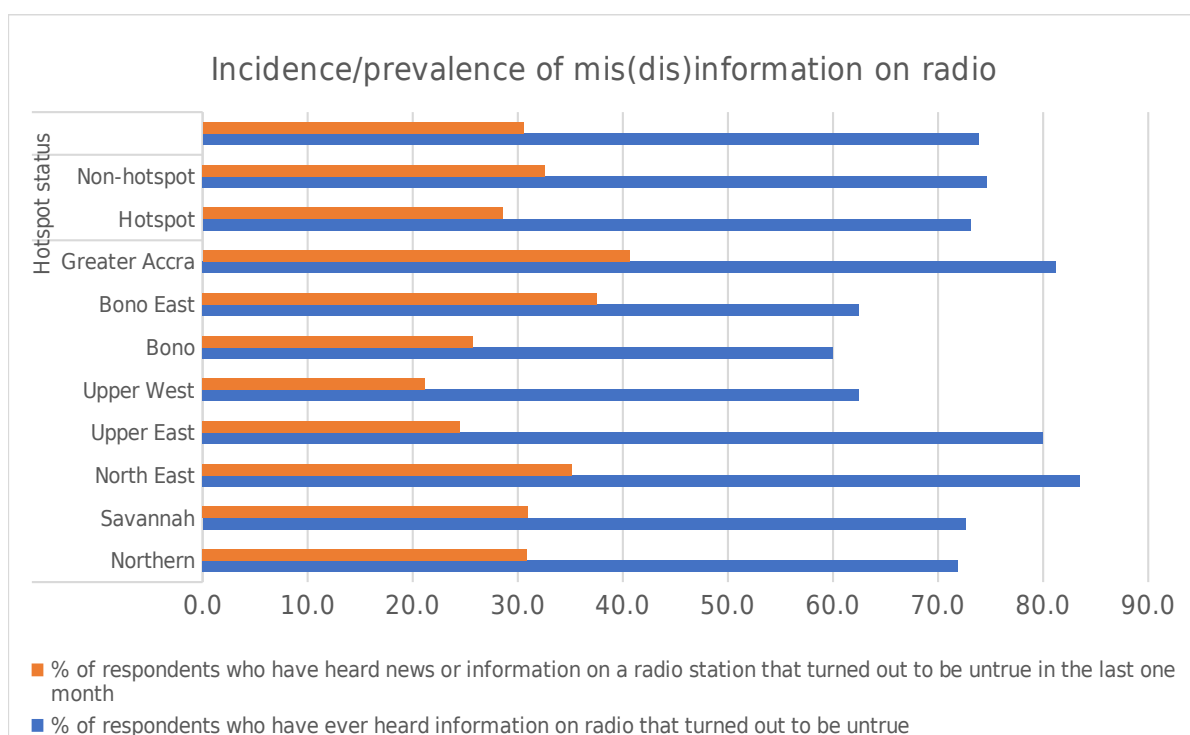
Figure A9: Incidence/Prevalence of mis/disinformation on radio by sub-Hotspot categories
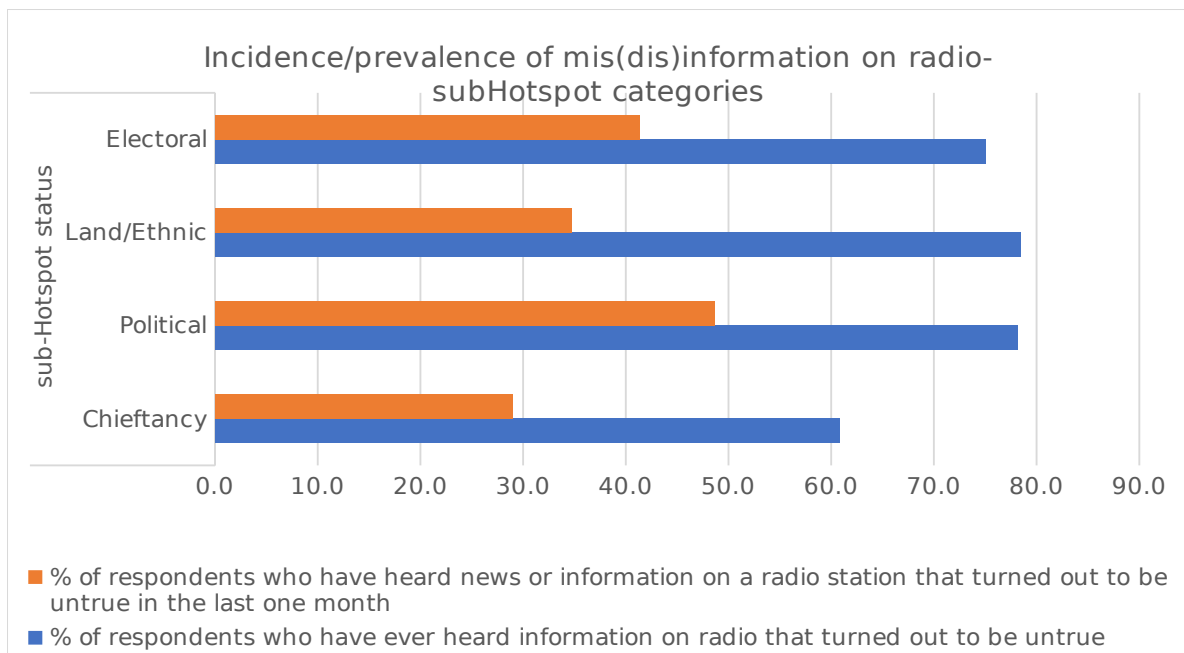
Figure A10: Respondent's perception on the spread of false information on radio
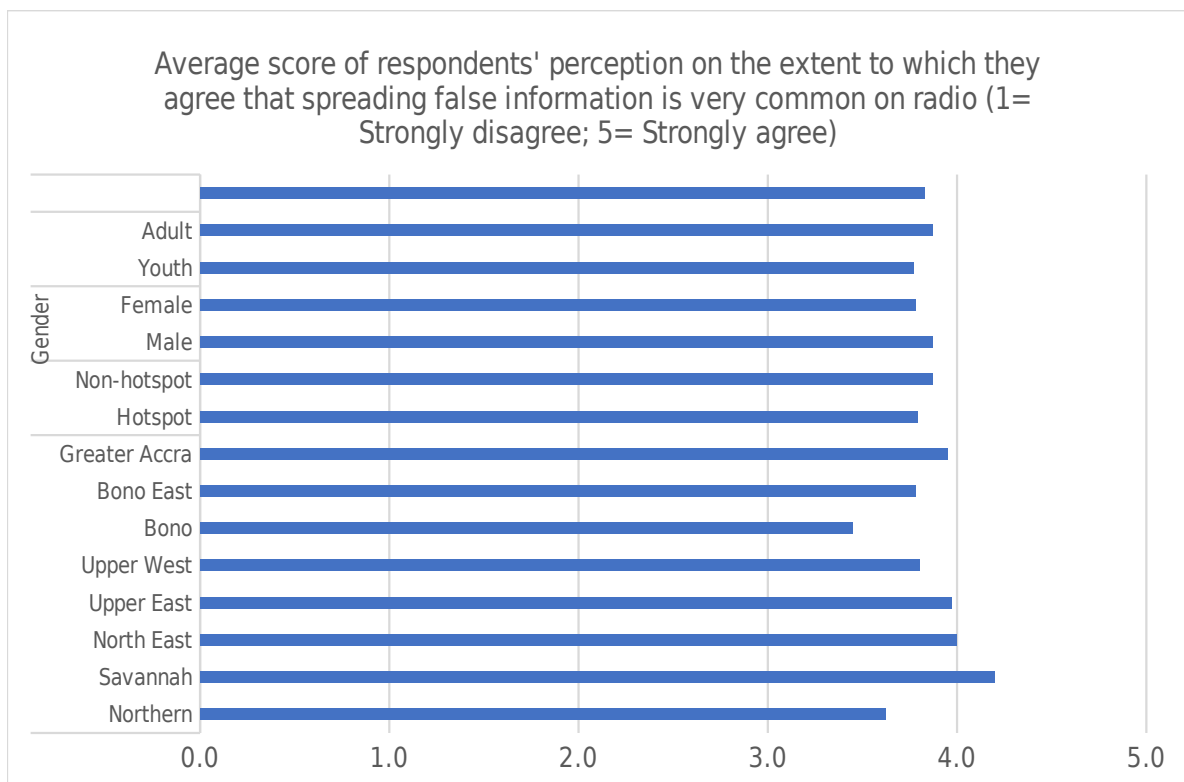
Figure A11: Frequency and source of false information in the last one month

Frequency and source of false information on radio

Regions: Northern, Savannah, North East, Upper East, Upper West, Bono, Bono East, Greater Accra

Hotspot status: Hotspot, Non-hotspot

All

■ Average number of times respondents received information that turned to be untrue (within the last 1 month)
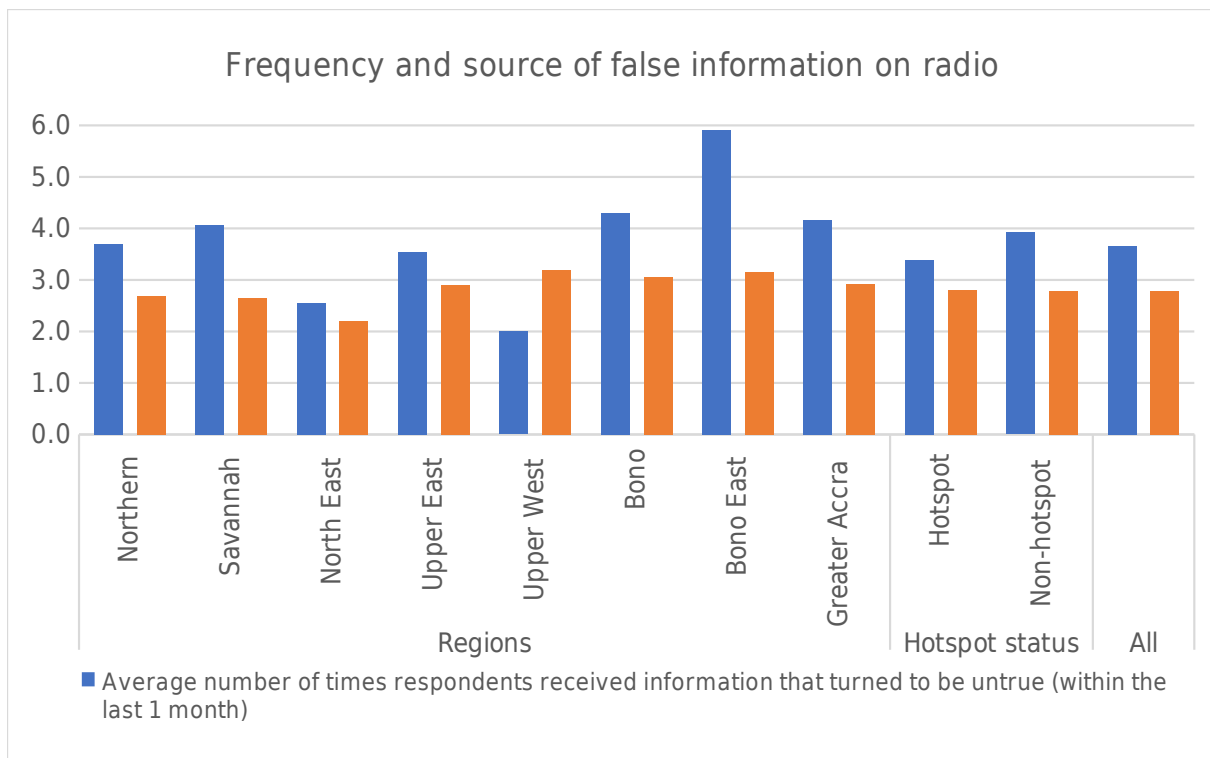
Figure A12: Respondents' perception of the various forms of radio station's ability to mis/disinform their listeners

Respondents' perception of how likely radio stations misinform/ disinform their listeners (Mean score; where 1=Very unlikely, 5= Very likely)

Local state-owned radio stations
Foreign state-owned radio stations
Commercial radio stations
Community radio station
Campus-based radio station
Local language dominant radio stations
English Language dominant radio stations
Politically-aligned radio stations
Politically-nonaligned radio stations

— Misinform   — Disinform

Figure A13: Respondents perception of false information in the general media landscape

The media sometimes pubishes false news (1=strongly disagree; 5=Strongly agree)
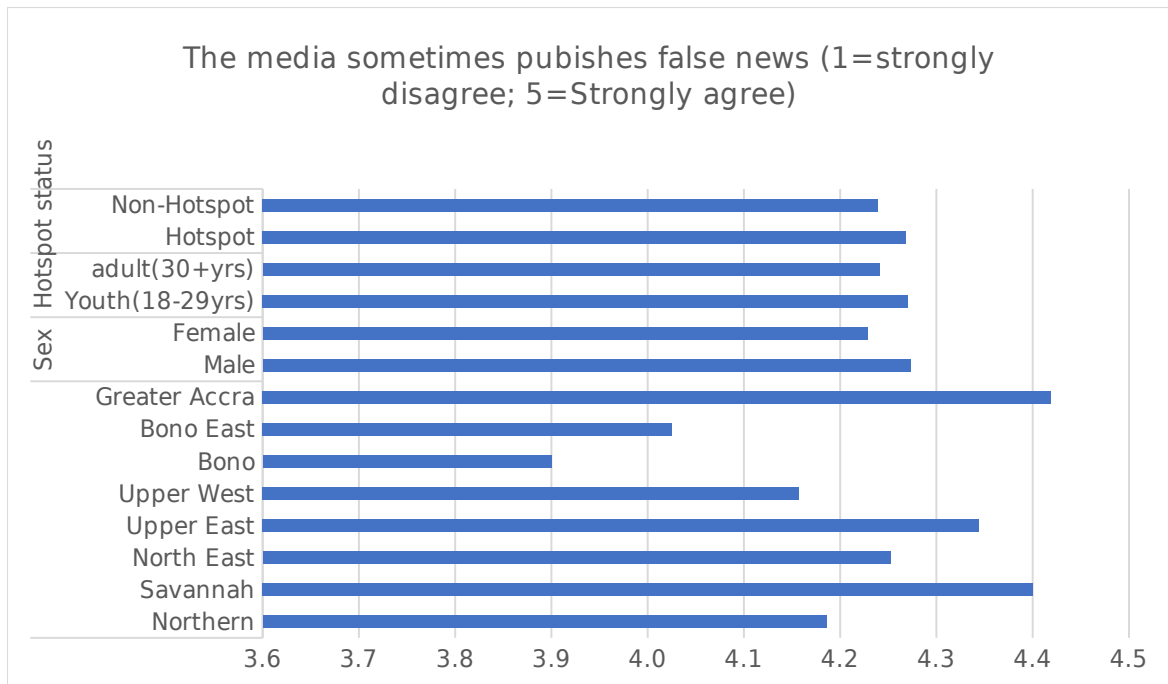
Figure A14: Respondents' perception: Misinformation or disinformation is very common in the following social media by gender, age category and hotspot status (mean score; 1=Strongly disagree, 5=strongly agree)

Misinformation or disinformation is very common in the following social media - gender, age, & hotspot (mean score; 1=Strongly disagree, 5=strongly agree)
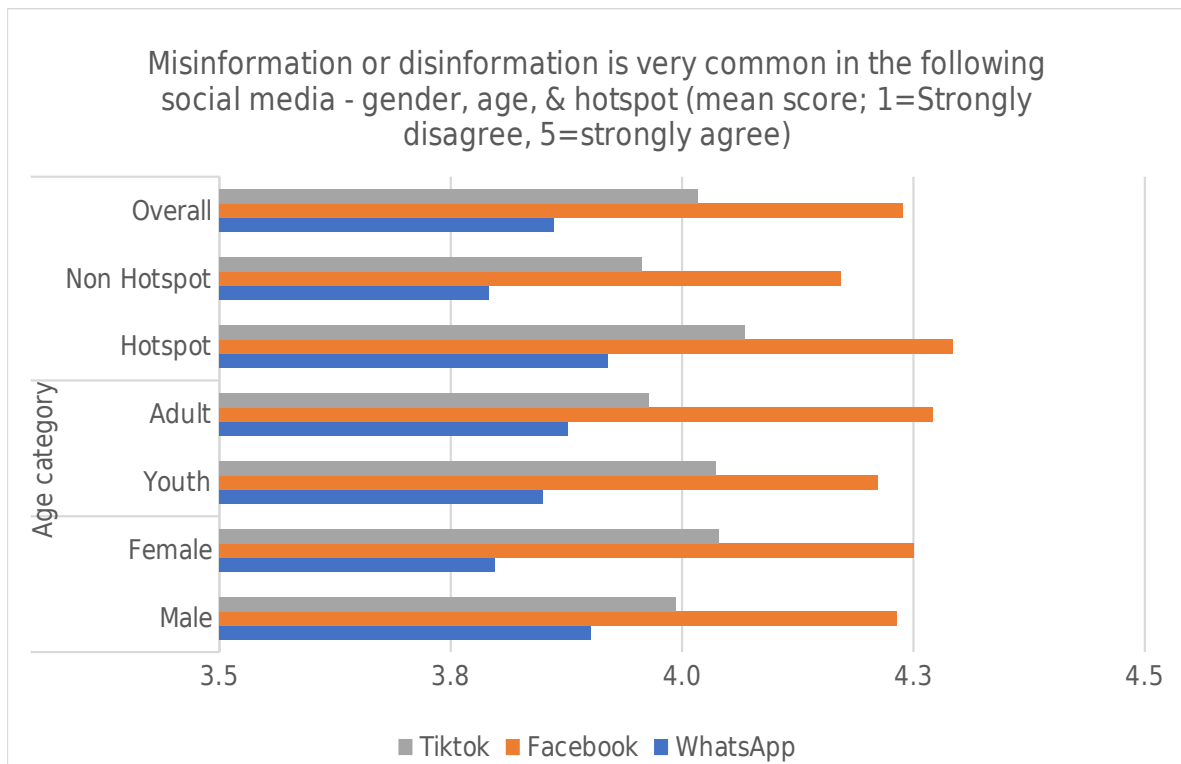
Figure A15: Respondents' perception: Misinformation or disinformation is very common in the following social media by sub-hotspot status (mean score; 1=Strongly disagree, 5=strongly agree)

Misinformation or disinformation is very common in the following social media - sub-hotspot status (mean score; 1=Strongly disagree, 5=strongly agree)
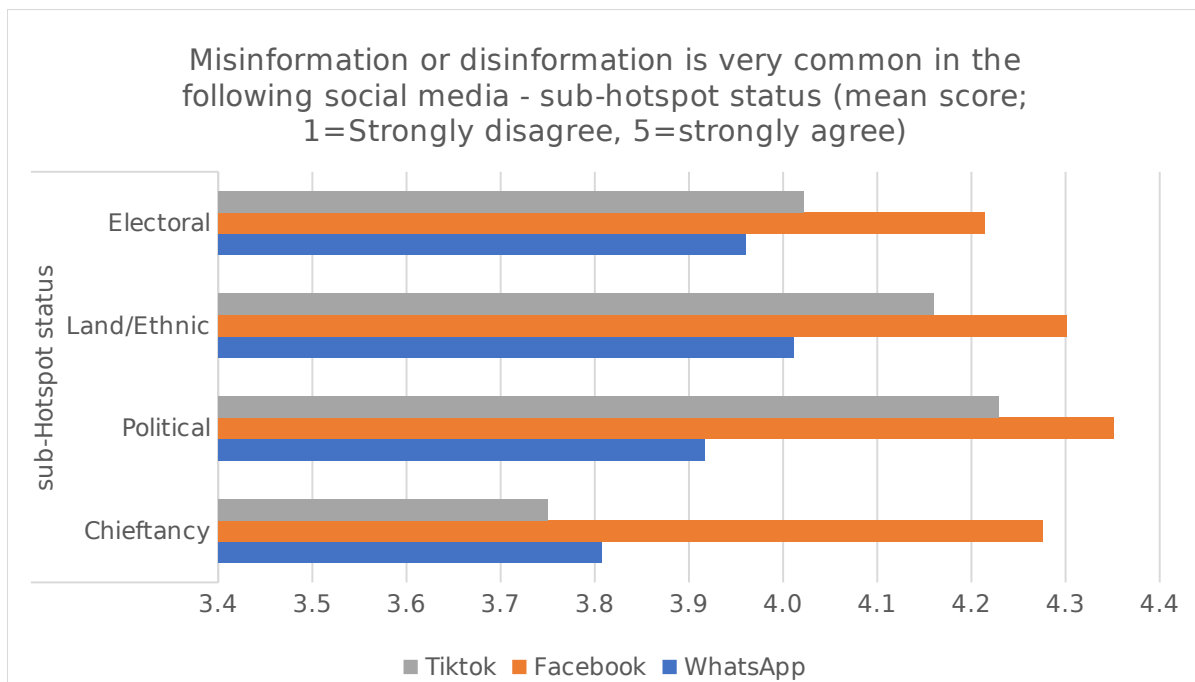
Figure A16: Number of times of sharing information on social media
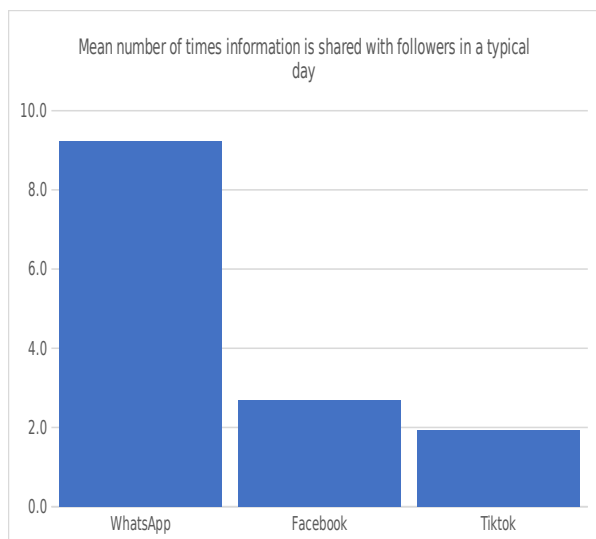
Figure A17: Frequency of posting information on social media (percent)

Mean number of times information is shared with followers in a typical day

Frequency of posting information on social media (%)
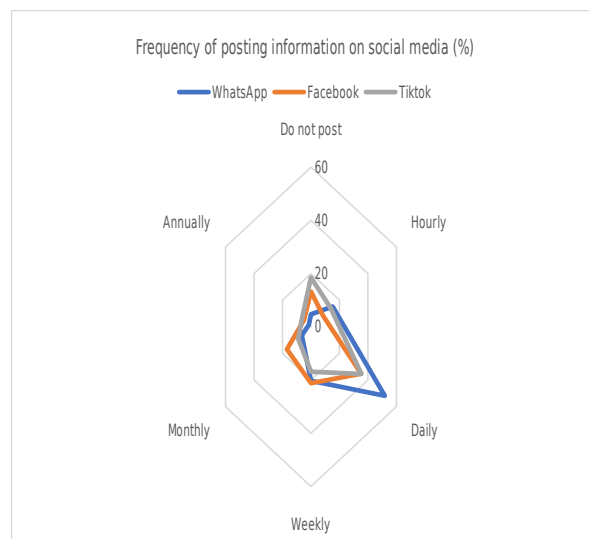
Figure A18: Percentage of respondents who still listen to radio after receiving false information

% of respondents who still listen to radio after receiving false information
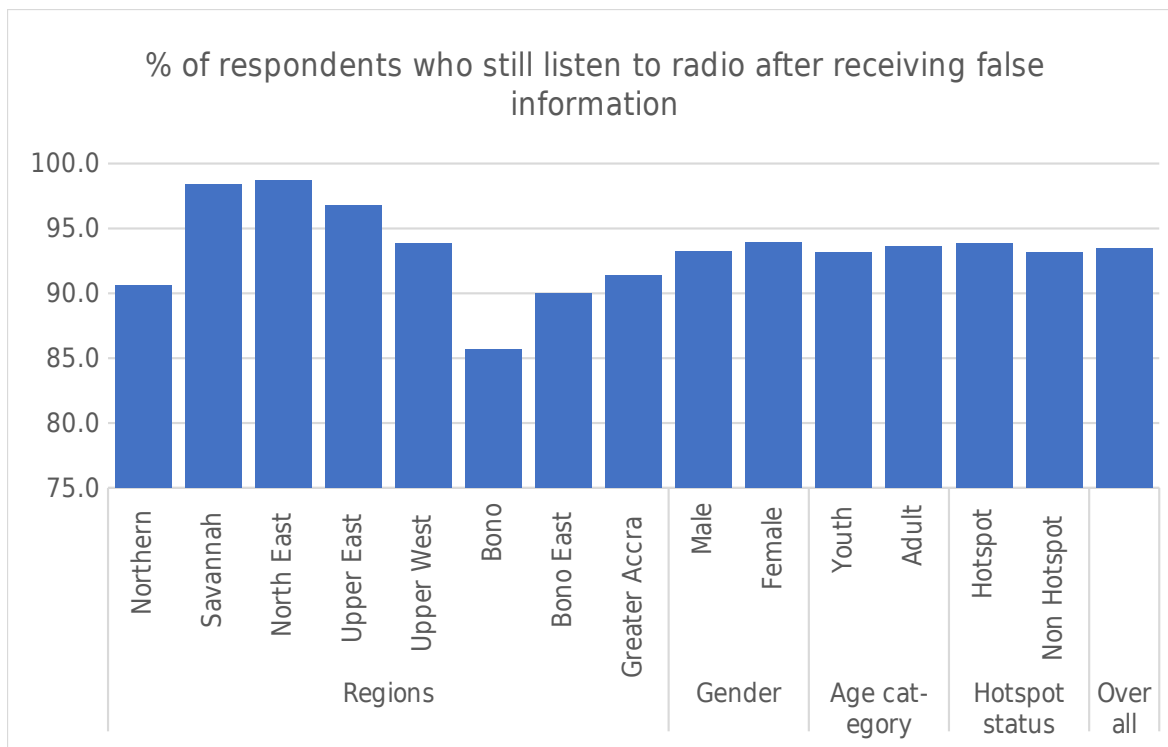
Figure A19: percent still using platform after receiving false information

Figure A20: Reason for still using the platform after receiving false information

Reason for still using platform after receiving false information (%)

- Other
- The platform makes me happy/entertains me
- I obtain more credible information than misleading information
- I can verify the authenticity of the information
- I follow many people here
- I have many followers

% still using platform after receiving false information

Region	Value
Northern	88.1
Savannah	90.3
North East	92.5
Upper East	84.3
Upper West	74.8
Bono	72.7
Bono East	88.2
Greater...	87.8
Overall	85.4

Figure A21: Authenticity of information from social media (yes percent)

Authenticity of information from Social Media
All (yes %)

Question	Value
...uld verify the accuracy of their information before giving them out? % (N=842)	94.5
...n the source of information is not given alongside the information? % (N=842)	51.1
...when the source of information is given alongside the information? % (N=842)	54.2
4. Do you still use that social media platform? % (N=732)	98.2
...news or information on social media that turned out to be untrue? % (N=732)	62.6
...sed any information on social media that turned out to be untrue? % (N=842)	86.9

Figure A22: How respondent got to know the information on radio was untrue (percent)

How respondent got to know the information on radio was untrue (%)
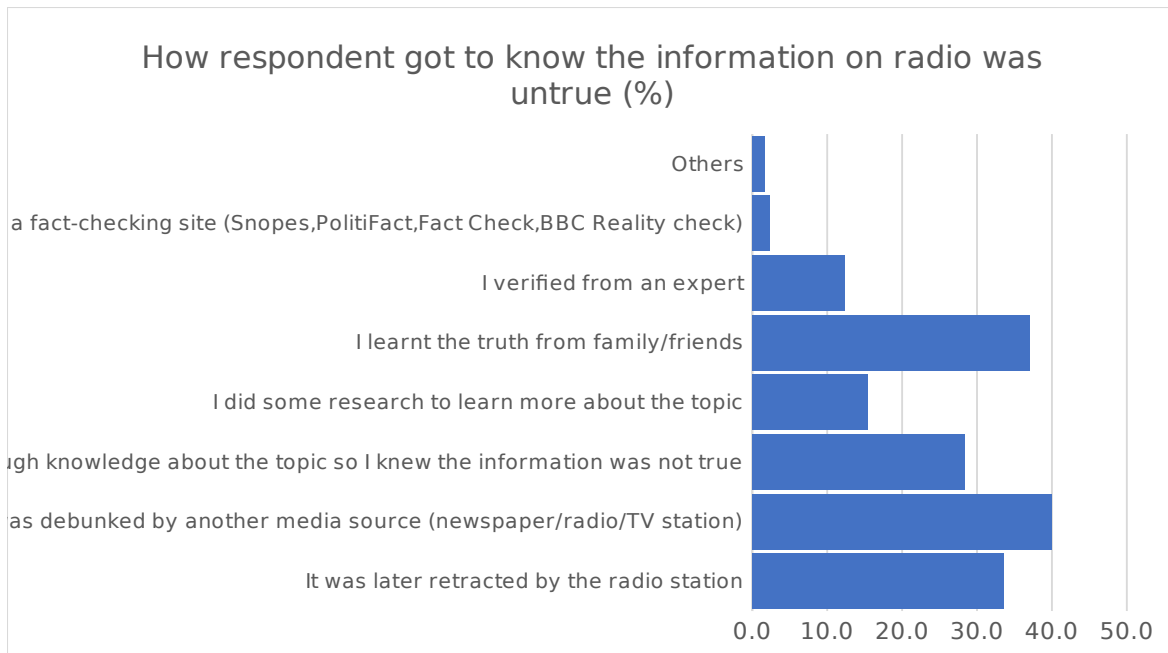
Figure A23: How respondent got to know the information on social media was untrue (percent)

How did you know the information was untrue - social media (%)

Others	6.0
I cross-checked with a fact-checking si	4.0
I verified from an expert	2.3
I learnt the truth from family/friends/	20.2
I did some research to learn more about	10.3
I had enough knowledge about the topic	16.7
It was debunked by a traditional media	7.0
It was debunked by another social media	21.2
It was later retracted by the original	12.4

Figure A24: Respondent's attitude and medium of verification of false information

Verification of information (%)

others(radio, newspapers, etc.) 1.6
6.3
t Check, BBC Reality Check, Factcheck Ghana, Ghanafact.com) 6.5
2.3
Family/friends/colleagues 34.2
49.1
Other 12.1
24.0
Difficult to verify 28.6
35.2

0.0   10.0   20.0   30.0   40.0   50.0
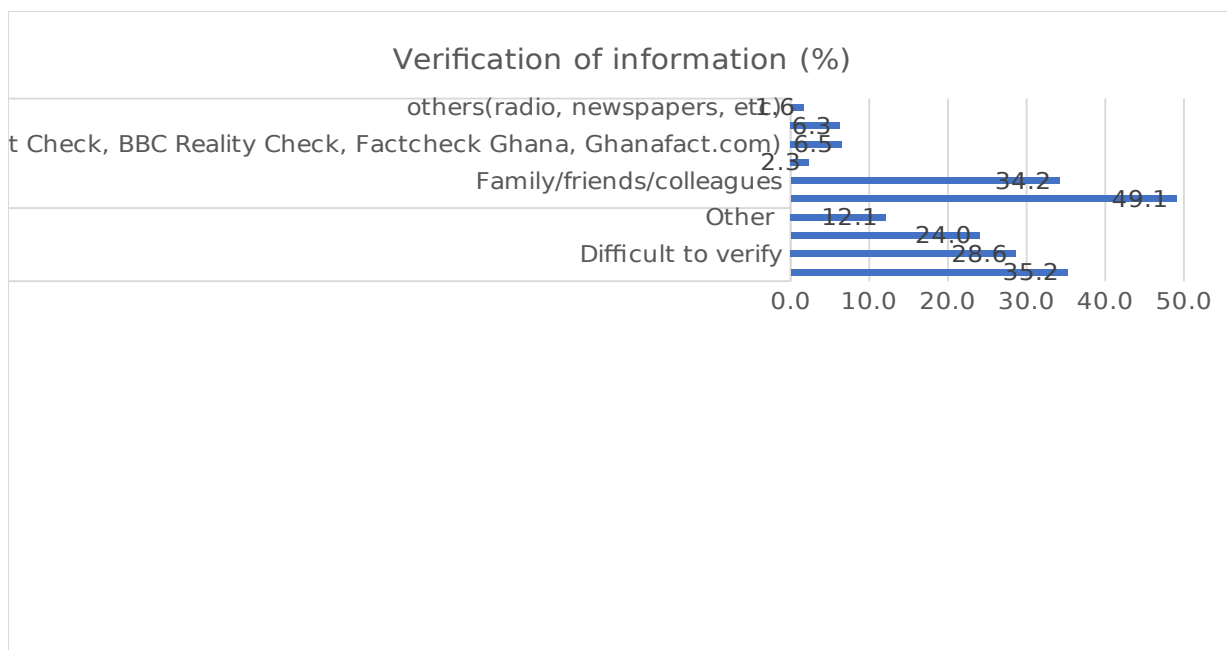
Figure A25: Perception of whether false and misleading information affect voting behavior – MP & President

Effect of mis/disinformation on voting pattern (%)

MP
- This will strongly affect my vote. — 33.6
- This will affect my vote slightly — 17.2
- This will not affect my vote at all — 49.3

President
- This will strongly affect my vote. — 32.8
- This will affect my vote slightly — 17.4
- This will not affect my vote at all — 49.8

0.0   10.0   20.0   30.0   40.0   50.0   60.0

Figure A26: Perception of whether false and misleading information from a candidate affect voting behavior

Effect of mis/disinformation from a candidate and respondent's perception to vote for such a person (%)

- This will not affect my vote at all
- This will strongly affect my vote
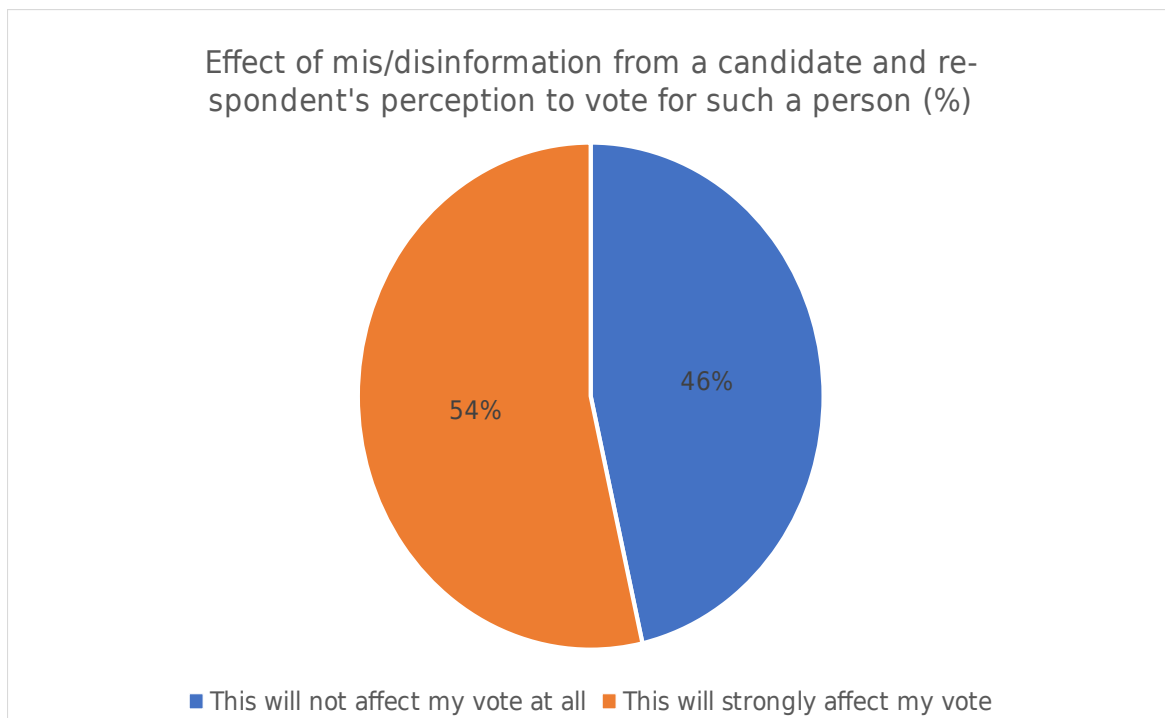
Figure A27: The use of sensitive words on radio leading to different forms of violence
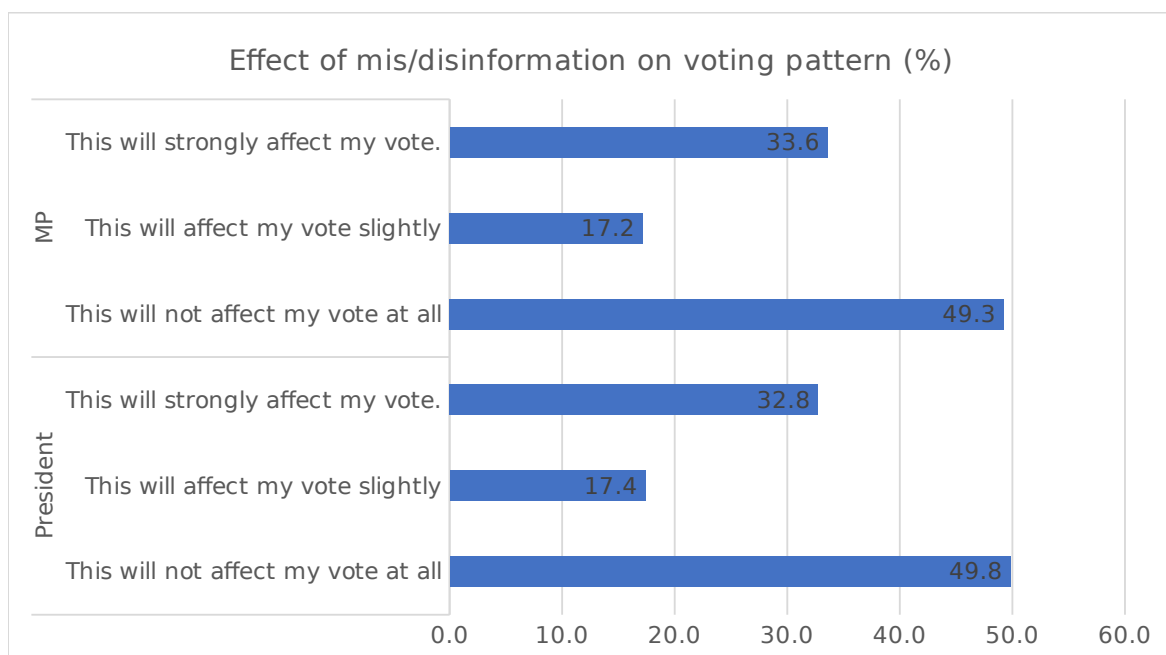
Use of sensitive words on radio leading to conflict/violent situations

...at caused/worsened chieftaincy-related conflict/violence
...that caused/worsened ethnicity-related conflict/violence
...dio that caused/worsened land-related conflict/violence
...be die, people of "X" ethnic group are cockroaches, etc)
...e already-existing conflict/violent situations to get worse
...dio that caused some conflict/violent situations to begin

0.0   5.0   10.0   15.0   20.0   25.0   30.0   35.0   40.0

%

- Region
- Community

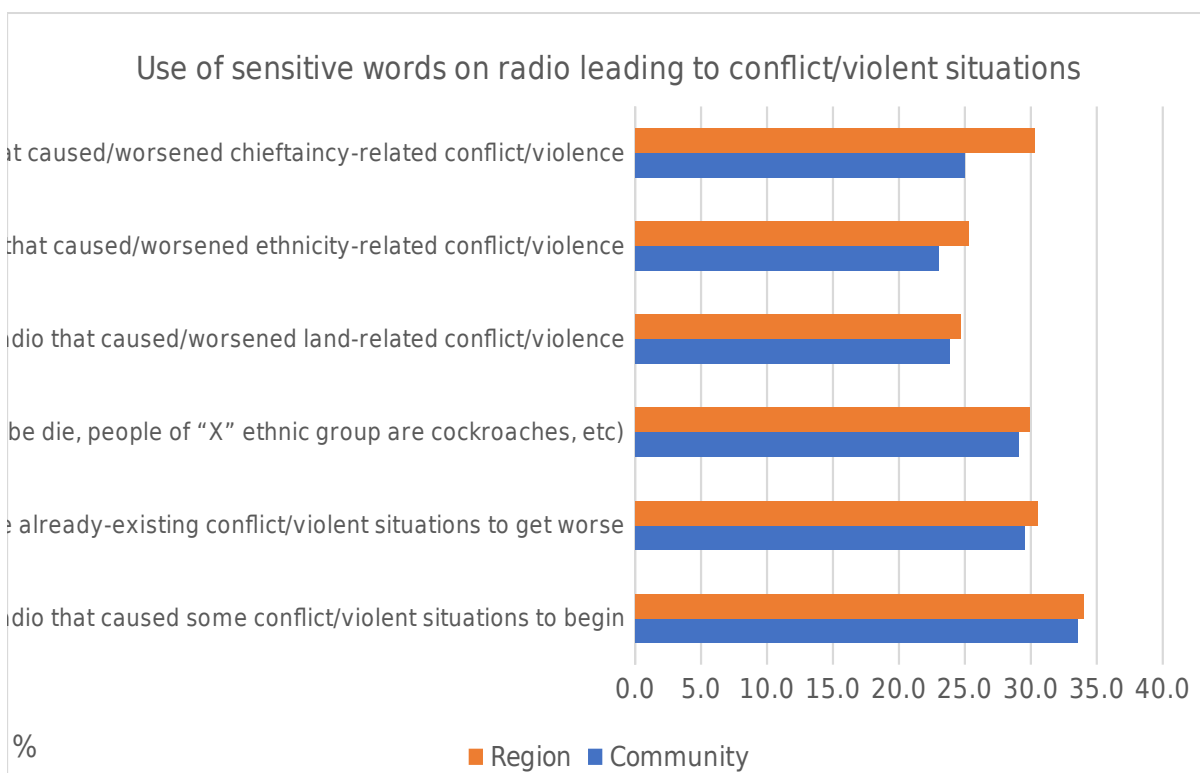Figure A28: The use of sensitive words on social media leading to different forms of violence

Figure A29: Respondent's perception on the use of sensitive words on social media and violence by sub-hotspot status
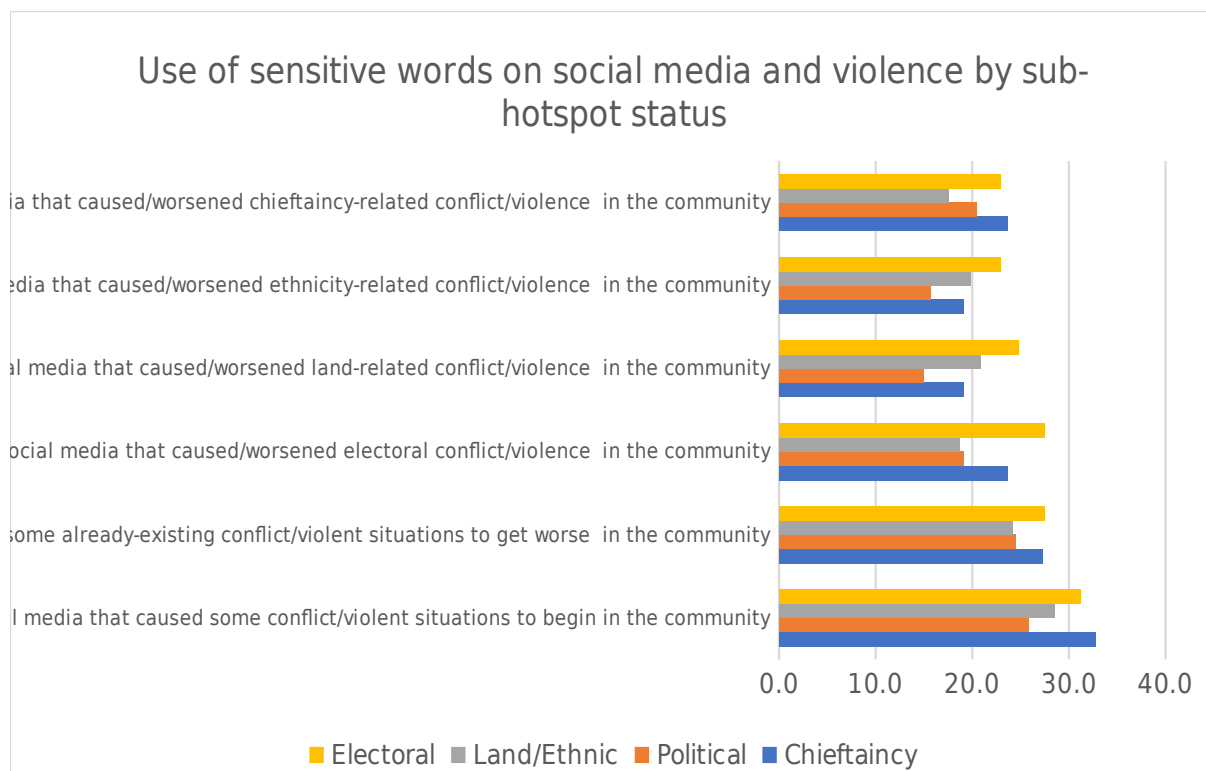
Figure A30: Respondent's perception on the use of sensitive words on radio and violence by sub-hotspot status
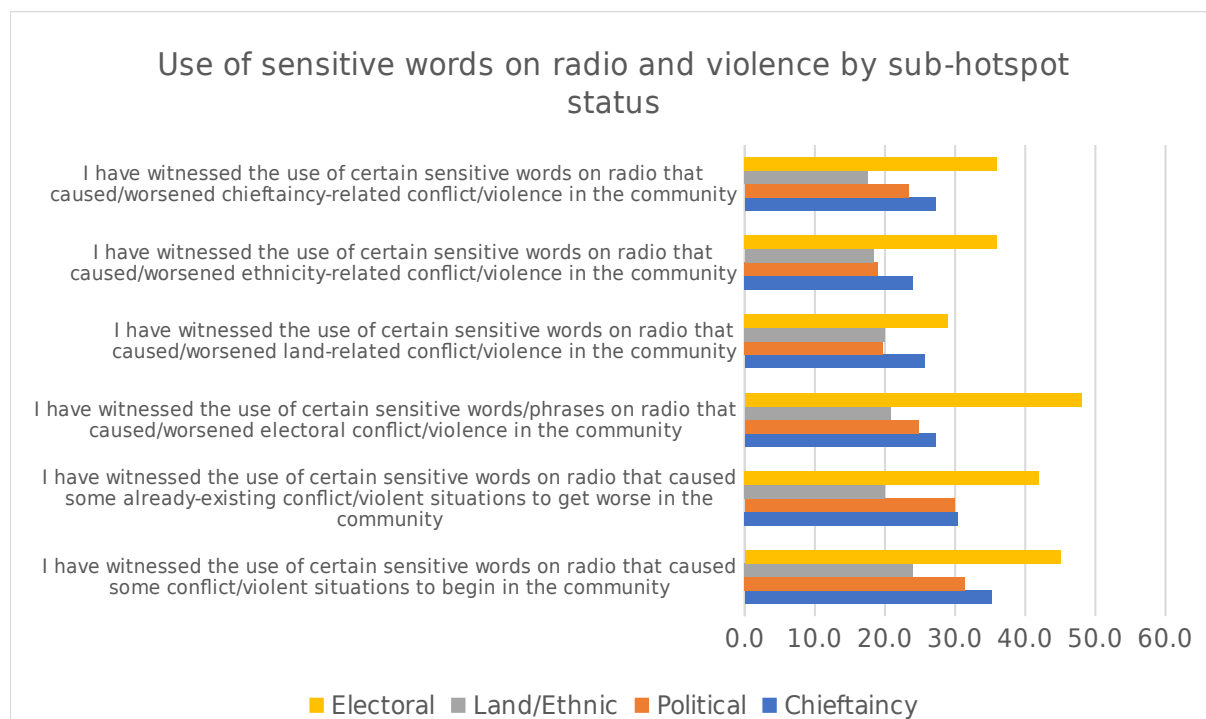
Figure A31: Reactions (likely action to take) against perpetrators of mis/disinformation

A. Reaction of respondents if a person from the same political party affiliation uses unkind words or makes a false statement on radio against their favourite electoral candidate in the community

Legend:
- Do nothing
- Civil discussion with the offender (privately or radio call-in)
- Report to the police
- Report to the District Security Council
- Report to the NCA/NMC

B. Reaction of respondents if a person from the same tribal affiliation uses unkind words or makes a false statement on radio against their traditional leader

Legend:
- Do nothing
- Civil discussion with the offender (privately or radio call-in)
- Report to the police
- Report to the District Security Council
- Report to the NCA/NMC

APPENDIX 3: ADDITIONAL INFORMATION ON DATA COLLECTION METHODS AND SURVEY INSTRUMENTS

Appendix 3a: Sample selection procedure

TOWN A

Main road through the town
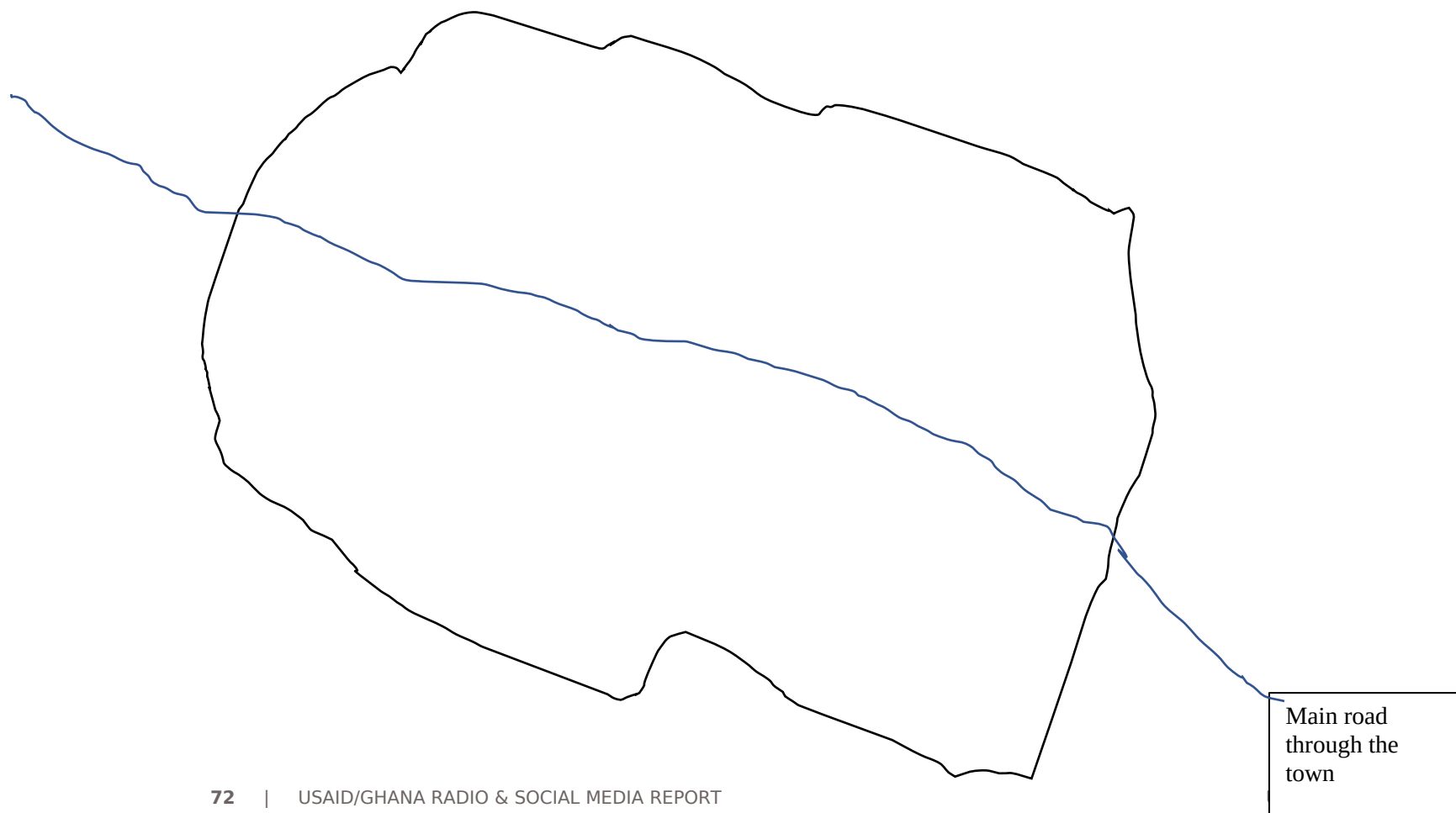
Determining the sampling frame for each community:
- Multiple the number of houses on the vertical line by the number of houses on the horizontal line to get an estimate of the total number of houses in the community
- Divide the total number of houses in the community (**N**) by the number of interviews to be conducted (**n**) to get the sampling interval (i.e. **i**-th) to apply. For example, if there are 200 houses in the community and there are 50 interviews to be conducted then we can obtain the sampling interval as follows:

$$\textbf{i}\text{-th} = N/n = 200/50 = 4$$

- That's the sampling interval for selecting the houses is **4**. This means that starting from one end of the community, you will interview one person in every **4th** house.

Sampling rules for selecting respondents in the selected houses:

- Interview one person from every i-th house selected.
- Each enumerator should interview equal number of respondents between the following age cohorts: 18-35 years; and 36 years & older.

Sampled/completed interviews by community, district and regions

Region	District	Community	Freq.	Percent
Northern	Gushegu	Kpatinga	22	1.82
		Gushegu	22	1.82
	Sagnarigu	Gurugu	22	1.82
		Sagnarigu	22	1.82
	Tamale Municipal	Gumbihini	25	2.07
		Choggu	25	2.07
	Karaga	Karaga	25	2.07
		Pishigu	25	2.07
	Nanumba North	Bincharatanga	20	1.66
		Bimbilla	24	1.99
	Mion	Sang	25	2.07
		Zakpalsi	20	1.66
	Saboba	Sobiba	25	2.07
		Sambuli	25	2.07
	Tolon	Tolon	20	1.66
		Nyankpala	30	2.49
Savannah	East Gonja	Salaga	20	1.66
		Kusawgu	20	1.66
		Kpembe	20	1.66
	North Gonja	Daboya	25	2.07

Region	District	Community	Freq.	Percent
	Central Gonja	Buipe	20	1.66
North East	Chereponi	Mayama	20	1.66
		Chereponi	20	1.66
	Mamprugu-Moagduri	Yagba	24	1.99
	Bunkpurugu	Kpamale	20	1.66
	West Mamprusi	Loagri	23	1.91
Upper East	Bawku West	Zebilla	36	2.99
	Bolgatanga Municipal	Bolgatanga	36	2.99
	Bongo	Bongo	35	2.90
		Soe	20	1.66
	Talensi	Gbane	25	2.07
		Namolgo	20	1.66
	Kasena Nankana	Navrongo	20	1.66
		Kologo	20	1.66
Upper West	Nandom	Nandom town	26	2.16
	Sissala East	Welembelle	25	2.07
	Lambussie-Karni	Lambussie	25	2.07
	Nadowli	Nadowli	25	2.07
		Kaleo	20	1.66
	Lawra	Lawra	25	2.07
Bono East	Techiman Municipal	Techiman	20	1.66
	Kintampo Municipal	Kintampo	20	1.66
Bono	Dormaa West	Nkrankwanta	20	1.66
	Berekum West	Jinijini	20	1.66
Greater Accra	Accra Metropolis	Jamestown	47	3.90
		Accra Central Business District	45	3.73
	Ga West	Amasaman	47	3.90
	Ga East	Abokobi	40	3.32
Total sample			1,206	100

Appendix 3b: Data and data collection instruments

The data collection instruments can be found on the following links:
https://docs.google.com/document/d/1mLzP2KWgsa-E-mzyP14zsJ6MSdtfPExK/edit?usp=drive_link&ouid=107284014209172969631&rtpof=true&sd=true

https://docs.google.com/document/d/1kF4aYcns8JoP8Jf_ijghRurgvtvHJzWf/edit?usp=drive_link&ouid=107284014209172969631&rtpof=true&sd=true

Data can be found using the following links:

https://drive.google.com/file/d/1C8B-Rxv1yDF4LWNWH_zGEgtkMwbMcq7r/view?usp=drive_link

https://drive.google.com/drive/folders/10GQK5cO4tvZs-aqdEkOam0sq2zT586ik?usp=drive_link

APPENDIX 4: ETHICAL APPROVAL

See attachment.

APPENDIX 5: LEGISLATION, REGULATIONS, GUIDELINES, CODES AND OTHERS

Legislation
National Communications Authority Act, 2008 (Act 769)
Electronic Communications Act of Ghana, 2008 (Act 775)
Electronic Communications Amendment Act, 2009 (ACT 786)
Electronic Transactions Act, 2008 (Act 772)
National Information Technology Agency, 2008 (Act 771)
Communications Service Tax (Amendment)Act, 2013 (Act 754)
Communications Service Tax (Ammendment) Act, 2019 (Act 998)
Cybersecurity Act, 2020 (Act 1038)

Regulations

Electronic Communications (Rules of Procedure of the Electronic Communications Tribunal) Regulations, 2016 (L.I. 2235)
Electronic Communications (Interconnect Clearinghouse Services) Regulations, 2016 (L.I. 2234)
Electronic Communications Regulations , 2011 (L.I. 1991)
These Regulations are made to give effect to the provisions of the Electronic Communications Act, 2008 (Act 775).
Subscriber Identity Module Registration Regulations, 2011 (L.I. 2006)
Mobile Number Portability Regulations, 2011 (L.I. 1994)
National Identification Registration Regulations 2012 (L.I. 21111)
Data Protection Act, 2012
National Telecommunications Policy (NTP-2005)
National Communications Regulations, 2003 (L.I.1719)
National Broadband Policy and Implementation Strategy
National Identification Authority Act, 2006 (Act 707)
National Identity Register Act, 2008 (750)

Guidelines for Mergers and Acquisitions
Mast & Towers Guidelines
Unsolicited Electronic Communications Guidelines
This was developed to regulate the transmission of Unsolicited Electronic Communications in Ghana. The Guidelines has been withdrawn effective 1st August, 2021(http://localhost/2021/08/06/management-of-unwanted-calls-and-text-messages-2/).
Special Numbering Resources Guidelines
Type Approval Guidelines
Guidelines for Television White Spaces (TVWS) Data Services