## UNDERSTANDING LISTENER BEHAVIOR 2021 South Sudan National Audience Survey









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**BBC** British Broadcasting Company

**CATI** Computer Assisted Telephone Interviewing

COVID-19 2019 Novel Coronavirus

IVR Interactive Voice Response

NGOs Non-Governmental Organizations

**QA** Quality Assurance

**RDD** Random Digit Dialing

## SMS

Short Message Service (or what is colloquially known as a "text message")

SSBC

South Sudan Broadcasting Corporation

### **Technical Definition:**

Statistical Significance: In the analysis of findings, we refer to the statistical significance of a result – specifically whether a key difference between two groups (e.g., men and women) is significant. If a result is statistically significant, there is a very small chance of the difference emerging in the data because of random chance. A statistically significant result is one in which we can place greater confidence when generalizing about the survey's target population of people in South Sudan who have access to mobile phones.



# **Executive Summary**

From 2020 to 2021, Internews contracted Forcier Consulting to conduct a National Audience Survey in South Sudan to better understand the contemporary national media market with a focus on media consumption, habits, and preferences, as well as beliefs about the reliability of various media sources. The survey objective is to support radio partners to understand the value of their airtime and highlight any unrealized opportunities for deeper audience engagement. Forcier utilized a novel research design combining interactive voice response (IVR) and computer assisted telephone interviewing (CATI) data collection methods. This approach produced accurate measures of relevant research indicators, and minimized health risk of COVID-19 and security risk to both researchers and respondents.

The combined IVR and CATI samples were constructed based on randomly selected phone numbers from across South Sudan and thus the results can be interpreted as representative of the opinions and preferences of mobilephone-owning individuals (or individuals who have access to mobile phones) who live in South Sudan. In South Sudan, the population of mobile phone owners is substantially different from the general population of the country. At the end of 424 data collection. respondents completed the randomized CATI survey, out of which 73.4 percent were male and 26.7 percent female. Mobile phone owners tend to be men, tend to live in or near urban areas, and tend to be more educated and more literate than the average person in South Sudan. It is important to bear these demographic traits in mind when interpreting the results presented in this report.

Eight indicators were chosen for inclusion in this study, and the main aggregate findings for each indicator are summarized here for quick reference:

• **Media ownership:** Approximately 90 percent of respondents owned mobile phones, 82 percent owned radios, and 49 percent owned television sets.

• **Media access:** Nearly 93 percent of respondents reported having access to radio, 81 percent had access to television, 74 percent had access to the internet, and 69 percent had access to the newspaper.

 Weekly reach, consumption, and usage: Among respondents who reported having access to a given media type, 78 percent of respondents reported having consumed radio within the past week. 75 percent reported having used the internet within the past week, 52 percent reported having watched television within the past week, and 33 percent reported having read a newspaper within the past week. Roughly half of CATI respondents had used their phones to listen to the radio in the week prior to being interviewed. Although television access was more common than internet access overall, the internet is an increasingly common media type accessed through smartphones, with 42.9 percent of respondents reporting having accessed the internet on their phone in the past week, as compared to just 20.8 percent who had downloaded and viewed a video clip and 8.3 percent who had streamed a video.

 Media habits and preferences: Respondents with access to the internet reported spending more time using the internet per day than those with access to any other media type. Internet users reported spending an average of 1.9 hours per day online, with roughly half of those with internet access using it for 2 hours or more per day. Respondents who had access to radios reported listening to an average of 1.4 hours per day, and respondents with access to television reported watching an average of 1.6 hours per day. Radio and the internet are most used in the morning (before people leave their house) and then in the evening and night, after people return home. Television is most watched in the evening. Contrary to other media types, newspapers are more commonly read in the middle of the day.

• Trust for media type, source, or information provider: The most broadly recommended radio station was BBC World Service English, with all 62 station listeners stating they would recommend it to friends and family. All the listeners of Akol Yam FM, Good News Radio, and Radio Bakhita also stated that they would recommend the station. All the listeners (100 percent) of both Akol Yam FM and Good News Radio both recommended those stations and felt that they were either somewhat or very trustworthy. On the other hand, the two stations with the highest listenership were Eye Radio and Radio Miraya. Interestingly, BBC World Service Arabic listeners were slightly more likely to rate the station as trustworthy compared to the more popular BBC World Service English, 91.7 percent compared to 88.7 percent. Of the most popular stations, both Eye Radio and Radio Miraya are viewed as at least somewhat trustworthy by approximately 88 percent of their listeners.

 Media sources and information providers: The most watch television station among respondents was South Sudan Broadcasting Corporation (SSBC). Nearly two-thirds of respondents with access to a television reported having previously watch the station. The next most popular stations were well-known international stations, including AI Jazeera (watched by 42.9 percent of TV respondents) and the BBC (previously watched by 26 percent of TV respondents). By far the most read newspaper was the Juba Monitor. Over half (56.3 percent) of respondents with access to newspapers said that they had read it. Almost a guarter (24.4 percent) of them stated they had read the Citizen newspaper while 15.9 percent had read Alwatan and 13.6 percent had read The Dawn. Among all sampled respondents, 45 percent stated that they use relatives or friends as a non-media source of information. The next most cited non-media source of information was loudspeakers or megaphones, at 38.9 percent of respondents.

• Sub-types of media sources (focus on radio and social media): Radio Miraya is, by far, the most popular station among respondents with access to radio. Nearly two-thirds (65.1 percent) of these respondents reported listening to it previously. The next most popular station was Eye Radio, which 43.8 percent of respondents had listened to at some point. International stations had some reach, with 19.1 percent previously listening to Voice of America and 15.1 percent having listened to BBC World Service English.

• Information needs: Respondents chose education and health as the most important information for their communities to receive. Nearly 62 percent of respondents believed that communitv should their receive information about education. and percent cited around 55 health information as important. The choice of health information as vital to the community may be related to the data collection period during the COVID-19 epidemic. Since insecurity is an endemic problem in many parts of South Sudan, the relative importance that respondents gave to peace and security-related information was substantially lower than might have been expected. Radio was cited as the most common and most trusted media source for both health and securityrelated information.

To better inform Internews partners and extract actionable insights, the data was also disaggregated by gender and by state to reveal important trends and to identify potential media-related interventions. A summary of these disaggregated findings is below:

• Unity State has the most consistently low access to media across all media types. Especially for radio ownership/ access, and for television access.

• Warrap State is close to the bottom in terms of both phone ownership and internet access.

• Women have far more limited phone ownership than men. The finding on phone ownership disaggregated by gender follows the same pattern found from the randomized selection of random phone numbers in South Sudan. The composition of the sample comprised of 73.4 men and 26.6 percent women. • Prime radio time across South Sudan is from 4-8pm. This is also prime time for television usage.

o The next most popular radio use time is in the early morning from 5-8am, but there is more regional variation in morning radio use.

o Television use is the most consistent across South Sudan with evening and late-evening viewing being the primary usage times irrespective of the state.

From these detailed findings, a set of conclusions and actionable recommendations to media stakeholders and Internews follow:

- Improving access to radio and television in Unity State would likely produce a substantial increase in overall media consumption in Unity State.
- Improving access to smartphones in

Warrap State would potentially produce a major increase in internet access/ use in Warrap State.

• Women have far more limited phone access and ownership than men, so for Internews access to information interventions, equipping more women with phones could shift women's access to information and the internet, as well as potentially shifting gender power dynamics in important ways.

• Radio stations across South Sudan can charge the most for advertisements from 4-8pm in the evening. This is also prime time for television usage.

o Depending on the region, the next most popular radio use time is in the early morning from 5-8am, and most stations broadcasting in most states can also charge more to advertisers and sponsors for this timeslot than the others.



## Introduction

In July 2011 South Sudan emerged from decades of armed conflict, instability, and political neglect to become the world's newest nation. Since that achievement, the fledgling country has faced enormous challenges ranging from persistent ethnic strife and political upheaval to a lack of infrastructure and widespread poverty. It is estimated that nearly two-thirds of South Sudanese adults cannot read.<sup>1</sup> In this context, Internews has been committed to the growth and development of South Sudan's media sector since even before independence. Internews supports access to journalism training and media capacity improvements in South Sudan. Some of the partners Internews has supported include The Radio Community (Akol Yam FM, Mayardit FM, Singaita FM, Mingkaman FM) and Eye Media (Eye Radio). Practical certificate and courses on journalism were developed in collaboration with the Media Development Institute and

University of Juba. For the people of South Sudan, access to reliable and trustworthy information can be the difference between life and death in such a precarious environment.

To better inform projects in South Sudan, Internews has commissioned media research for the entire sector in the country on multiple occasions. Beyond project-specific evaluations and assessments, this has included National Audience Surveys in both 2013 and 2015. These nation-wide studies gathered and analyzed a large amount of primary quantitative data to better understand the media consumption habits and trends within South Sudan as well as the impacts of different media sources and content on people in the country.

Previous research into the media landscape in the country has indicated that South Sudanese citizens have a highly varied level of media consumption and awareness depending on several factors including gender, location, and socio-economic status. The media landscape was found to be highly diverse and multi-lingual with both localized and national informational needs.<sup>2</sup> Overall, radio was found to be the most accessed media type in South Sudan, with approximately half of 2015 survey respondents reporting having listened to the radio at some point, and 38 percent of respondents reporting having listening to it at least weekly.<sup>3</sup> Looking beyond regular radio listenership, nearly two-thirds of all respondents stated that information obtained from the radio (directly or indirectly through friends and family) had helped them stay safe.<sup>4</sup>

Previous studies of the media landscape in South Sudan have also found that "the media's maturity depends on its ability to adapt to a diverse and rapidly changing environment while effectively serving a population in need of information in almost every area."<sup>5</sup> In an environment such as South Sudan – characterized by periodic violence and endemic uncertainty about the future – the media landscape can change quickly as information sources proliferate, internal migration patterns change, and a younger and more technologically-adept generation quickly comes of age and begins using phones and the internet. When we consider the added economic stress and uncertainty added by the COVID-19 pandemic, it stands to reason that data concerning media in South Sudan collected even as recently as one year ago are likely unrepresentative of the current situation.

From 2020 to 2021, Internews contracted Forcier Consulting to conduct a National Audience Survey in South Sudan to better understand the contemporary national media market with a focus on media consumption, habits, and preferences, as well as beliefs about the reliability of various media sources.

This report is laid out in four main sections, broken into introduction, methodology, findings and recommendation. The first section below briefly explains the methodology of this study, including the key indicators targeted for measurement. For the sake of brevity and readability, most of the more technical details of the study methodology have been laid out in the appendices, which provides an analysis of response rates and notes on how to improve future studies. The second section summarizes the demographics of the sample as a means of contextualizing the telephone-based sample for this study and highlighting ways in which the population of people in South Sudan who have access to mobile phones differs substantially from the general population. The third section presents the main findings based on the National Audience Survey data, organized by indicator. The final section presents conclusions and actionable recommendations for Internews and its partners.

## Methodology

This National Audience Survey was designed and undertaken during the COVID-19 pandemic. As a result, the data collection methods proposed and utilized were all remote to avoid any health risk to researchers or respondents. Broadly speaking all interviews were conducted over the phone, and the phone numbers called were selected randomly from among all working phone numbers in South Sudan, thus providing a representative sample of active phone numbers in the country.

Two types of telephone-based surveys were employed:

• Interactive voice response (IVR) that measured the level and type of both media ownership and media access in the country. The IVR survey used a combination of sample-frame types (meaning, the sources of phone numbers called), each of which was designed to provide a representative sample of the mobile-phone-owning population of South Sudan.

• **Computer-assisted telephone interviewing (CATI)** that measured media habits, media sources, level of trust of media sources, media penetration and information needs. The CATI survey made use of the same underlying sample frames as the IVR survey.

The table below describes the two samples, their dates of execution, the achieved sample size, and the method for obtaining the phone numbers used in the sample.

Table 1: Summary of National Audience Survey Samples				
	IVR	САТІ		
Timing of data collection	January 4 – 24, 2021 (21 days)	February 11 – March 3, 2021 (18 days)		
Number of completed interviews	284	424		
Method for obtaining respondent phone numbers	Forcier telephonic panel, Sample Answers RDD technique, and classical RDD	Pre-screened via IVR and all previously mentioned techniques where numbers were not reached during IVR		
Approximate length of questionnaire	15 questions	232 questions		

Based on the sample frames used (i.e., the sources of phone numbers called), we can treat the National Audience Survey sample as being representative of the population of mobile phone owners in South Sudan. It is also likely that this sample is representative of the set of all people in South Sudan who have access to phones (even if they do not own them). This is a subtle point, but phone ownership is still not that common in South Sudan, with much less than half of the population owning mobile phones, and yet people may have access to a phone even if they do not personally own that phone.

Internews developed a set of 10 indicators that formed the basis of the National Audience Survey. These are the same indicators that are tracked by Internews in other countries where Internews is engaged, and that are often tracked by media outlets. In consultation with Forcier, a total of eight of those indicators were selected for inclusion in this study. These indicators are summarized in the table below and form the basis for the organization of the findings section of this report.

Table 2: National Audience Survey Indicators		
#	Indicator	Definition
1	Media ownership	Ownership of functioning radio set, TV, smartphone, or simple phone
2	Media access	Refers to having ever consumed or used a particular medium
3	Media reach, consumption, and usage	<ul> <li>Weekly reach is counted for anyone who uses radio, TV, social media and print within an average week.</li> <li>Consumption or use is weekly reach or penetration.</li> <li>Penetration is for mobile phones and internet/social media and based on ownership and access</li> </ul>
4	Media habits and preferences	<ul> <li>Time of day, hours a day</li> <li>Preferred channel (i.e., listening to radio via internet, via app, via FM receiver on mobile phone, etc.) and language</li> </ul>
5	Trust for media type, source or information provider	Trust is belief in the relative reliability and truthfulness of the media type, source, or information provider. Also measured by whether they would recommend the media, source, or information provider to a friend or family member (social proof).
6	Media sources and information providers	<ul> <li>For traditional media: radio stations, TV stations, newspaper companies, etc.</li> <li>For new media: Facebook, WhatsApp, Facebook groups, WhatsApp groups, etc.</li> <li>For information provider (not medium): religious leaders, NGOs, doctors, government, etc.</li> </ul>
7	Sub-types of media sources (focus on radio and social media)	Ranking of specific providers
8	Information needs	Safety and security, basic needs, etc.

For the sake of brevity, we do not describe the sample design, methodology, or limitations of this study in greater detail in this report. For the full details of the sample and methodology, including an analysis of comparative response rates for the IVR and CATI samples, please see the statistical and research method appendices.

## **Sample Demographics**

This study notes that a sample of South Sudanese mobile-phone-owners (or individuals who have access to working mobile phones) is not representative of the full national population and could only be used to make cautious generalizations about the full national population. Broadly, we find that carrying out a phone-based sample in South Sudan leads to a sample biased in favor of men, more literate and well-educated individuals, and individuals living in more urban areas.

In particular, the sample demographics tell us that, in South Sudan, men are far more likely than women to either own a mobile phone or to have access to a mobile phone. The gender breakdown of the sample is 73.4 percent male and 26.6 percent female, which is a strong bias toward male respondents. The sample is also clearly biased toward the inclusion of more literate and more educated individuals. Literacy rates in South Sudan are known to be quite low and are generally estimated to be below 50 percent. However, the literacy rate in our sample is 92 percent, and over 57 percent of those sampled reported that they had completed at least primary school. These findings suggest that most phone owners in South Sudan are far more likely to be literate than the average resident of South Sudan, and underlines the degree to which

a sample of phone owners excludes a large sub-section of rural and poorly educated people who live in South Sudan.

It is important to observe that mobile phone coverage and mobile phone ownership tend to intersect in a way to reinforce these trends. Mobile phone coverage in South Sudan tends to be strongest in urban areas, which are also the areas where it is easiest to access quality education. The more rural the setting, the more likely it is that respondents have limited access to mobile networks as well as education, and limited livelihood opportunities that would give them enough income to purchase and maintain a working mobile phone.

Bias is less evident in other demographic traits, including respondent ages, and the geographic distribution of respondents. The average age of respondents in the sample was 31 years old, which is fairly similar to the average age in the population. The graph below shows the distribution of respondents by state, where Central Equatoria has the greatest share of the sample and is also the most populous (and most urban) state in the country.



#### Figure 1: Distribution of Respondents by State

The predominant language spoken (at home) by respondents is Dinka at 43.2 percent. The next most spoken languages were Zande at 12.3 percent, Arabic at 10.6 percent, Juba Arabic at 5.9 percent, and Nuer at 5.7 percent. In contrast, the most spoken language on radio is English at 50.0 percent followed by Arabic at 28.7 percent. This suggests that English is likely a second language.





Most respondents sampled, or 69.6 percent, described themselves as being local to their area, while just over a quarter of the sample described themselves as either a migrant (20.5 percent) or an internally displaced person (7 percent). The fact that around 28 percent of those sampled described themselves as being a migrant of some kind is in keeping with the fact that there has been massive population displacement in recent years (much in the form of forced migration) because of insecurity, conflict, flooding, and famine.

This demographic analysis helps to contextualize the analysis of key indicators below. To the degree that media users such as radio listeners or television owners overlap with the population of mobile phone owners, the findings below will be extremely helpful in understanding the habits of key media audiences. However, this sample will be inherently less useful for understanding the media preferences of women and of people living in rural areas with limited mobile phone network coverage.

# Main Findings

This section presents findings for each of the key media indicators identified by Internews. The most fundamental of these indicators is media ownership.

### **Indicator 1: Media Ownership**

Media device ownership rates are inferred from a number of survey questions. These included whether the respondent declared they owned the media type in their home, they had used the media type in the past week, or if they stated they used a given media type early in the morning or late at night.





Approximately 90 percent of sampled respondents are estimated to have owned the phone that they were using when surveyed. Readers should bear in mind the fact that this is a telephone-based sample and therefore provides a biased estimate of phone ownership in South Sudan. In the general population people may not have phones, radios or TV; this would be in line with poverty indicators. Actual phone ownership in South Sudan is likely much lower, and a representative face-to-face survey would be required to establish this indicator in an unbiased fashion. Most respondents (at 82 percent) reported owning a radio, while fewer than half of respondents reported owning a television.

When media ownership is disaggregated by gender, we find that women are far less likely than men to own phones, even while radio and television ownership do not vary substantially by gender.<sup>6</sup> The graph below summarizes differences in media ownership by gender. Gender-based differences in phone ownership are clearly shown in the graph (with just over a 12 percent difference between women and men), and these differences in phone ownership are also reflected in the composition of the sample comprising 73.4 men and 26.6 percent women.





The 12 percent gender difference of phone ownership shown in the graph above is statistically significant, and the differences in the actual population are likely to be even larger.<sup>7</sup> Indeed, the main explanation for the gender-imbalance in the telephone-based sample for this study is the fact that (throughout South Sudan) women are much less likely than men to own or to have access to a mobile phone.

When media ownership is disaggregated by state, Unity, Jonglei and Lakes states emerge as having the lowest levels of radio ownership – levels that are significantly lower than the average of 82 percent for the full sample. The graph below shows the percent of respondents (from a given state) who reported owning a radio. Unity State is at the bottom, at 65 percent – a difference which is highly statistically significant.<sup>8</sup>



Figure 5: Radio Ownership by State

### **Indicator 2: Media Access**

Media access is assessed by asking a respondent if they have ever used a given media type, either at home or elsewhere. The graph below summarizes media access for the combined sample of 550 respondents to the IVR and CATI surveys.





Out of all respondents who completed either the IVR or CATI survey, radio was the media type most likely to have been consumed or used. Nearly 93 percent of respondents reported having access to radio. Eight out of 10 respondents stated they had access to television, while just under three quarters of respondents reported having access to the internet. Newspapers were the least accessed media type, but still more than two-thirds of respondents (68.5 percent) had previously accessed or consumed them.

The clear learning point here for Internews partners is that radio access and phone access are very strongly correlated, and there are very few phone users who do not have access to radio. This point is further reinforced by the media reach statistics below. Radio can be used to advertise to phone users, and as a corollary, phones can be used as a means of engaging radio listeners (e.g., with call-in programs, phone polls, and SMS campaigns). Radio stations will benefit from hosting call-in programs that allow them to develop lists of active listeners, where (with proper consent from callers) those lists have value and can potentially be sold to advertisers, or otherwise used by the radio station to promote their programs or causes. A similar argument could be made for television as well, because television access among our sample of phone users is at around 81 percent, which is much higher than we would expect for all residents of South Sudan.

We now consider media access by state, and the graph below presents radio access by state, showing that Unity State ranks lowest in terms of radio access among surveyed respondents. Readers will recall from the discussion of media ownership above that Unity State also ranks lowest in terms of radio ownership. It is normal and expected for ownership and access to covary to a degree, and this level of correlation for Unity State helps to emphasize the degree to which residents have far lower access to radio than people living in other states in South Sudan. However, these differences in radio access are not statistically significant.



Figure 7: Percent of Respondents Accessing Radio by State

Turning to television access, the graph below shows television access by state as reported by the respondents in the sample. It is worth noting that Unity State is still near the bottom in terms of television access, and that Western Bahr El-Ghazal and Western Equatoria are also at the bottom in terms of levels of access.



### Figure 8: Percent of Respondents Accessing Television by State

% of respondents

These differences in television access by state are statistically significant for Western Bahr El-Ghazal and for Western Equatoria.<sup>9</sup> Unity State is on the verge of statistical significance. Over all these findings further emphasize the degree to which media access is generally low for people in Unity State.

Next, we consider internet access by state. Internet access is likely to be strongly correlated with phone ownership and access because most people in South Sudan access the internet through their phone. It is worth noting that Western Equatoria and Western Bahr El-Ghazal rank the lowest in terms of internet access and (from above) ranked the lowest in terms of television access. This result is statistically significant for Western Equatoria.<sup>10</sup> This set of findings combines with the findings above related to television access to suggest that people living in Western Bahr El-Ghazal and Western Equatoria may have some significant limitations to their abilities to access media, as compared with people living in other states in South Sudan.





### Indicator 3: Media Reach, Consumption and Usage

Media reach is most often measured as weekly reach, asking respondents who have access to a given media type when they last used a given media type, and categorizing respondents as within weekly reach if they used or accessed a given media type within the past seven days. Weekly radio reach and internet reach are the highest. Among respondents who said that they had access to radio, 78 percent of people reported having consumed radio within the past week. Among those who reported having access to the internet, around 75 percent reported having used the internet within the past week. Television and newspapers lag far behind in terms of weekly reach rates.

These findings are reflective of the predominance of radio as a media source in South Sudan. Access is broad (especially among phone owners/users), and weekly reach is high. These findings also speak to the increasing prevalence and importance of the internet as a media source in South Sudan. While access to the internet is much lower (around 19 percentage points less), the vast majority of individuals who are accessing the internet are doing so on a weekly basis.

The graph below compares weekly reach across different media types. While radio dominates in terms of both access and reach, the consumption data below suggests that as internet access expands, the internet will overtake radio as the most used media source.



#### Figure 10: Recency of Consumption of a Given Media Type

Finally, it is worth noting that, as in most of the world, newspaper readership in South Sudan appears to be dying. Newspapers were both the least used and least recently used media type among respondents. Just 33.2 percent of respondent who had accessed a newspaper had read one in the week prior to being interviewed. Over a quarter of those respondents had not accessed a newspaper within the last year.

The key insight for Internews partners and other media organizations here is that they can increase the sustainability of their operations by cultivating a strong online presence, bringing web-design skills in-house, and taking broadcasting online. As smartphone access and mobile phone networks expand, podcasts are likely to replace broadcasts in South Sudan, and media outlets would do well to position themselves for this transition. Internet is an increasingly common media type accessed through smartphones, with 42.9 percent of respondents reporting having accessed the internet on their phone in the past week, as compared to just 20.8 percent who had downloaded and viewed a video clip and 8.3 percent who had streamed a video.

Our analysis of non-call phone usage provides a number of important insights about how respondents use their phones beyond merely making and receiving phone calls. The most prevalent non-call use of mobile phones in South Sudan is as a means of listening to the radio, with nearly half of all respondents reporting that they use mobile phones to listen to the radio. The graph below summarizes non-call phone usage and shows that using phones to listen to the radio is the most common non-call phone use among respondents - even more common than sending and receiving SMS messages. While we do not have data to directly assess how most people consume radio (i.e., whether they mainly use a transistor set or whether they mainly use their phone), these findings suggest that many people throughout South Sudan may be consuming radio without the use of a transistor radio set. Given the telephone-based nature of this sample, we cannot generalize to the general population of South Sudan. But we can suppose that among people in South Sudan who have access to phones, a large proportion of these individuals may be consuming radio even if they do not own a transistor radio set. Establishing this with more certainty would require further research, and ideally a face-to-face survey that would ask respondents about both phone and radio ownership and that would also establish (for all radio listeners) what devices they use to listen to the radio and how often they use a given device (transistor or phone) to listen to the radio. The graph below shows all non-call forms of phone usage reported in the survey.

#### Figure 11: Non-Call Phone Usage during the Past 7 Days



This analysis of non-call phone use provides another important example of how internet use is in competition with radio use in South Sudan. Roughly half of CATI respondents had used their phones to listen to the radio in the week prior to being interviewed.

Respondents were also highly likely to have utilized SMS texting services, with 47.9 percent stating they had either sent or received a text in the past week. Social media sites were accessed in the previous seven days by approximately a third of respondents. Interestingly, only 4 percent of respondents had made a financial transaction on their smartphone in the previous week.

Radio, SMS, and the web are all essentially tied as principal ways that respondents use their phones (other than making calls). These are the clearest ways of reaching out to and directly contacting and influencing media consumers in ways that will take advantage of the increasing prevalence of smartphones as well as expanding mobile network coverage.

### **Indicator 4: Media Habits and Preferences**

The most important media habits and preferences relate to daily consumption habits – namely how many hours a day someone spends consuming a given media type, as well as the times of day when that consumption takes place. This information is critical for targeting advertising on broadcast-based media such as radio and television.

First, we examine how many hours per day respondents reported using a given media type in an average day. The graph on the following page shows a comparison of media types and average reported use in terms of hours per day. Respondents with access to the internet reported spending more time using the internet per day than those with access to any other media type. Internet users reported spending an average of 1.9 hours per day online, with roughly half of those with internet access using it for two hours or more per day.



Figure 12: Average Number of Hours Spent on a Given Media Type on a Typical Day

Despite radio access being far more common than television access, radio was (on average) used slightly less per day than television among respondents with access to each, 1.4 hours per day compared to 1.6 hours per day. Two-thirds of radio listeners reported listening to the radio for at least one hour per day. On average, respondents who had access to newspapers reported reading them for less than an hour a day.

The series of graphs below presents statistics on reported usage of each media type by time of day. These statistics are presented for the sub-sample of respondents who reported that they have access to a given media type, thus the number of respondents is different for each graph and is reported as the N at the bottom of each graph. Radio usage is most common in the evening, with 60.9 percent of radio listeners using it from the hours of 4 to 8 pm. The next most common times in which respondents utilize the radio are early morning and late evening. Approximately one third of radio listeners claimed they do so prior to when most people sleep, while 37.6 percent listen immediately after most wake up.





Between 26.5 and 22.3 percent of respondents with access to radio listen during the late morning and afternoon periods.





Respondents with access to the internet are somewhat more likely to spread the usage across the day as compared to listeners using the radio. The internet is more likely to be used in off-hours – late evening, overnight, late morning, and the afternoon, which is probably indicative of people using the internet on their phones with a mobile data plan. Just over half (51.7 percent) of internet users reported usage in the evening period, while 42.9 percent report late evening usage. Overnight internet usage is much higher than radio usage, 11.1 percent compared to 4 percent. This may be indicative of users attempting to take advantage of the fact that mobile data bandwidth is often faster late at night when there are presumably fewer users or phone calls being made. Furthermore, mobile carriers often offer deals where more mobile data costs less at certain times in the late evening or night. Finally, more than a quarter of respondents with internet access go online during both the late morning and afternoon periods.

#### Figure 15: Television Usage during a Typical Day



Television usage is much less consistent across the day as compared to the radio and internet. Respondents seldom consume television in the mornings or during the day and are much more likely to use television in the evening and late evening periods. Among respondents with TV access, 55.9 percent use it between 4 and 8 pm, and 53.7 percent use it between 8 and 11 pm. Morning and overnight usage was cited by roughly 5 percent of respondents with TV access.





Overall, we can see that radio and internet usage patterns throughout the day are very similar. People tend to listen to the radio and access the internet first thing in the morning, and then again in the evening, with evening access being the most predominant time for radio listening and internet usage. The trend we are observing here across these media types means that people are listening/accessing from their own home before leaving the house in the morning, and then are listening/accessing again in the evening after returning home.

In contrast, television is accessed mostly in the evening, and most television viewing probably occurs outside the home, which is reflected in viewing times being concentrated in the evening, when businesses that offer television-viewing are open (though not late at night). It is comparatively rare for people in South Sudan to own a working television set in their home, partly because it is rare for homes to have access to electricity that would be necessary to power such a set. Most people in South Sudan consume television by visiting a bar/pub, restaurant, or other gathering space that has a generator for power and an antenna-based television connection or sometimes a satellite-based connection. Thus, television viewing habits are not so much a result of viewer preferences as they are a result of the ways in which people access television. These television viewing habits are thus unlikely to change in the absence of broader and more affordable public electricity distribution services, as well as greater rates of household television ownership.

The aggregate findings presented above hold true across most states. In particular, the trends described above are nearly identical to those found for respondents in Central Equatoria state. The panel of graphs below shows comparable graphs for Central Equatoria, demonstrating that national trends are almost identical to those in Central Equatoria. This is at least partly a function of the fact that nearly 30 percent of the sample consists of respondents who reported that they were in Central Equatoria. Central Equatoria also has a degree of diversity (ethnically and in terms of urban/rural and livelihood types) that is similar to the diversity of the country as a whole.



#### Figure 17: Central Equatoria Media Usage on a Typical Day

By way of contrast, we can compare the graphs above for Central Equatoria, with the graphs below for Jonglei. While television viewing habits are quite similar between the two states, we can see that early-morning radio listening is far more prevalent among respondents in Jonglei than in Central Equatoria (and in the aggregate sample). Another important contrast is that internet usage is reported to be far higher in the evening among Jonglei respondents than among respondents from Central Equatoria.





These substantial regional differences are mostly likely the result of differences in access to media types as well as differences in the predominant livelihoods and lifestyles of people in different states. For example, people who practice agriculture as their main source of livelihood are likely to wake early in the morning (before or around the time of sunrise) and begin their work in the fields so that they can accomplish much of their work before the hottest period in the middle of the day. This type of agrarian lifestyle, which prioritizes early morning worktime, is likely to lead to lower levels of media consumption in the early morning and may help to explain why some states have low levels of radio consumption in the early morning, while others have higher levels.

To provide one more example of state-level differences in media consumption habits, the panel of graphs below shows the same set of media usage habits for respondents in Lakes State. The trends for radio usage in Lakes are distinct from those in both Central Equatoria and in Jonglei. We see that a far smaller proportion of respondents in Lakes reported that they listen to the radio in the early morning than in either Central Equatoria or in Jonglei.



Figure 19: Lakes Media Usage on a Typical Day

These graphs have been offered to illustrate some of the diversity of media preferences in South Sudan. For a full set of graphs for all states in South Sudan, please see the statistical appendix.

The analysis in this section suggests a useful avenue for further research because the data available from this National Audience Survey allows us to describe these different trends in media usage but does not provide deep insight into why these trends have emerged. A future qualitative study might focus on learning more about people's media consumption habits in South Sudan, including key regional variations in media habits. Research methodologies involving media diaries and observation can shed significant light into individual media usage patterns and how those patterns interact with people's lives, habits, and livelihoods.

## Indicator 5: Trust for Media Type, Source, or Information Provider

Indicator 5 provides a more detailed analysis of individual radio and television stations and how well-liked and trusted these media sources are. One of the simplest and best indicators that a person approves of and enjoys a given media station/outlet is whether or not they say they would recommend that media station or outlet to a friend or family member.

Respondents were first asked what media stations they listened to or viewed, and then were subsequently asked whether or not they would recommend it and the degree to which they trusted information from that media source.

The table below summarizes respondents' answers, by media source, about whether they would recommend that source. Questions about recommendation and trust can only be asked meaningfully of respondents who say that they have consumed a given media source. Thus, each percentage reported is the percentage of the number of respondents in the sample who said that they had listened to a given radio station or viewed a given television station. The number of respondents is presented as the N in parentheses in the left column, next to the name of the station in question.

Table 3: Top 10 Most Recommended Radio Stations		
Radio Stations	% of listeners who say they would recommend a station	
BBC World Service English (N=62)	100.0	
Akol Yam FM (N=21)	100.0	
Good News Radio (N=14)	100.0	
Radio Bakhita (N=12)	100.0	
Eye Radio (N=177)	98.3	
Voice of America (N=77)	97.4	
Radio Miraya (N=263)	96.6	
Radio Juba (N=18)	94.4	
Radio Jonglei (N=25)	92.0	
BBC World Service Arabic (N=24)	91.7	

Four radio stations were recommended by all respondents who reported listening to those stations. The most broadly recommended among these was BBC World Service English, with all 62 station listeners stating they would recommend it to friends and family. All the listeners of Akol Yam FM, Good News Radio, and Radio Bakhita also stated that they would recommend the station. On the other hand, the two stations with the highest listenership were Eye Radio and Radio Miraya. These were also highly recommended, though not quite unanimously: 98.3 percent of the 177 Eye Radio listeners and 96.6 percent of the 263 Radio Miraya listeners surveyed said that they would recommend these stations.

Recommended and trusted radio stations were often the same. The table on the following page presents a parallel summary of the percentage of listeners who said that a radio station is somewhat or very trustworthy.

Table 4: Top 10 Most Trustworthy Radio Stations		
Radio Stations	% of listeners who said a station is somewhat or very trustworthy	
Akol Yam FM (n=21)	100.0	
Good News Radio (n=14)	100.0	
Radio Jonglei (n=25)	92.0	
BBC World Service Arabic (n=24)	91.7	
BBC World Service English (n=62)	88.7	
Eye Radio (n=177)	88.1	
Radio Miraya (n=263)	87.5	
Voice of America (n=77)	84.4	
Radio Juba (n=18)	83.3	
Radio Bakhita (n=12)	66.7	

All the listeners (100 percent) of both Akol Yam FM and Good News Radio recommended the station and felt that the stations were either somewhat or very trustworthy. Interestingly, BBC World Service Arabic listeners were slightly more likely to rate the station as trustworthy compared to the more popular BBC World Service English, 91.7 percent compared to 88.7 percent. Of the most popular stations, both Eye Radio and Radio Miraya are viewed as at least somewhat trustworthy by approximately 88 percent of their listeners.

### **Indicator 6: Media Sources and Information Providers**

This section considers other media sources and specific media outlets as well as nonmedia sources of information to present the most comprehensive picture possible about how people in South Sudan receive information. Respondents were asked if they had ever watched or consumed any of the following specific media channels or sources.

First, we examine television viewing. The graph below presents the proportion of respondents (with access to television) who reported that they had ever watched a given station or channel.





The most watched television station among respondents was SSBC. Nearly two-thirds of respondents with access to a television reported having previously watch the station. This is an important finding because it suggests that there may be a preference among television viewers in the sample for a local, South Sudanese station. The same was true above for radio stations, with the most widely listened-to stations also being local.

The next most popular stations were well-known international stations, including Al Jazeera (watched by 42.9 percent of respondents who reported having access to television) and the BBC (previously watched by 26 percent of respondents with television access). No other television station appears to have had wide viewership, with less than 10 percent of respondents with access to television having previously watched them.
It is important to note that the statistics above are based on respondents being asked if they have ever previously watched a given television station, and thus cannot be used to make direct inferences about the popularity of a given station. Refused responses were for people who did not answer each question category for television watched previously. People's viewing of a given television station may be due in part to their preferences, but also may be due in part to the availability of different stations (based on where they broadcast) as well as which stations are most often played on publicly available television sets (which is where most people in South Sudan consume television).

To assess respondent approval of a given television station, each respondent who reported having viewed a given station was also asked whether they would recommend that station to a friend or family member. This question about recommendation to a friend/family is a standard measure of approval of a media source. If we look at the top three television stations from above – SSBC, AI Jazeera, and BBC – we can see that respondent approval of these stations also closely tracks respondent viewership. The table below summarizes these results.

Table 5: Top 3 Most Recommended Television Stations				
Television Stations	% of viewers who said they would recommend the station			
SSBC (n=228)	98.3			
Al Jazeera (n=152)	96.7			
BBC (n=92)	98.9			

If a station such as SSBC were widely available and widely viewed, but not widely liked, we would expect to see a far smaller percentage of respondents saying that they would recommend SSBC to friends or family. Taken as a whole, this evidence suggests that SSBC, AI Jazeera, and BBC are widely viewed and also widely popular television stations in South Sudan.

The final question raised by this discussion is whether SSBC is the most widely watched station across all states, or if there are major regional variations in the viewing and popularity of different television stations. The graph below explores this question by displaying consumption of the top three television stations by state. We can see that, irrespective of the state, SSBC has the highest proportion of respondents who reported having previously watched the station. Al Jazeera consistently comes in second, and BBC third. These findings suggest a high level of uniformity in television viewing habits and preferences across South Sudan. For comprehensive graphs summarizing radio listenership and television viewership by state, please see the statistical appendix.





An important broader conclusion follows from this analysis: considering the clear preference respondents have shown for local media sources in both radio and television, it may be beneficial for Internews partners to emphasize their status as being local when advertising their services.

Next, we turn to newspaper consumption. The graph below presents the proportion of respondents (with access to newspapers) who reported that they had ever read a given newspaper.





Readers should bear in mind that the number of respondents who reported having newspaper access (n=295) is much lower than the number of respondents who reported accessing other media sources.

By far the most read newspaper was the Juba Monitor. Over half (56.3 percent) of respondents with access to newspapers said that they had read it. Almost a quarter (24.4 percent) of them stated they had read the Citizen newspaper while 15.9 percent had read Alwatan and 13.6 percent had read The Dawn. There are some regional trends in newspaper readership, which are likely to be a function of newspaper availability rather than popularity. The Juba Monitor is the most broadly read throughout the country but has its highest readership (as a proportion of newspaper-reading respondents) in Eastern Equatoria state, and is also widely read in the other Equatorias. In contrast, Almugif has its highest readership in Western Bahr El-Ghazal and Upper Nile and has almost no readership in the Equatorias. For a comprehensive set of graphs summarizing newspaper readership by state, please see the statistical appendix.

Finally, we consider the fact that many people in South Sudan receive information through interpersonal interactions and other non-media sources. The graph below shows the proportion of respondents who said that they use a given type of non-media source for information.





Among all sampled respondents, 45 percent stated that they use relatives or friends as a source of information. It is likely that this percentage would be even higher if we were surveying people who did not own or have access to mobile phones. In South Sudan, most people given and receive information through word-of-mouth, through their social networks. The next most cited source of information was loudspeakers or megaphones, at 38.9 percent of respondents. This finding is worth emphasizing because loudspeaker and megaphone announcements have the potential to reach large numbers of people and especially displaced and otherwise vulnerable people who tend to not have access

to phones, radios, or television. Internews has used this mode of information dissemination to great effect in South Sudan through the *Boda Boda Talk Talk* program, which uses loudspeakers mounted on motorcycles or *tuk tuks* to deliver critical information and audio programing to audiences at protection of civilian sites (POC) and camps for refugees and internally displaced persons in South Sudan.<sup>11</sup>

The national government, religious leaders, and traditional/community leaders were sources of information for roughly a quarter of respondents each. NGOs were cited as an information source by 21 percent of respondents. Looking at health-specific information sources, 9.4 percent of respondents use community health workers and only 4.7 percent cited hospital or health clinic doctors.

## Indicator 7: Sub-types of Media Sources

There was already some discussion above of different radio stations and their relative listenership, but this section focuses squarely on the question of which media outlets or sources were most accessed or listened to and uses this information as a proxy for the overall popularity of these media sources among respondents. For each media type and source, respondents were asked if they had ever listened to/watched/used any of the following sources. Availability of information of two sub-types of media outlets are discussed in this section: radio stations and newspapers for traditional media, and online sources of information grouped as new media sources.

- For traditional media: radio stations, TV stations, newspaper companies, all.
- For new media: Facebook, WhatsApp, Facebook groups, WhatsApp groups, all.
- For information provider (not medium): religious leaders, NGOs, doctors, government, all.



Figure 24: Top-10 Radio Stations that Respondents Reported having Listened to

Radio Miraya is, by far, the most popular station among respondents with access to radio. Nearly two-thirds (65.1 percent) of these respondents reported listening to it previously. The next most popular station was Eye Radio, which 43.8 percent of respondents had listened to at some point. Stations from foreign governments had some reach, with 19.1 percent previously listening to Voice of America and 15.1 percent having listened to BBC World Service English. No other individual station listed in the survey had been listened to by more than 7 percent of respondents with radio access.



Figure 25: Percentage of Respondents Who Reported Having Used a Given Website/Application

Facebook was the most used website or app among South Sudanese who participated in the survey, with 85.4 percent of respondents with internet access having previously used it. The messaging service WhatsApp had been used by 44.4 percent of respondents, a little more than half the rate of Facebook use. Other messaging apps were cited by 5.4 percent of internet respondents. Other social media sites like Twitter and Instagram do not have the reach of Facebook, with approximately 10 percent of respondents having previously used each of them.

The key learning point for Internews partners relates to how people in South Sudan use the internet and the fact that the predominance of Facebook use means that investing in Facebook marketing or in gathering opinions and data from Facebook (e.g., through chat-bots) may be a very good investment for media partners and campaigns that are targeting younger, more educated South Sudanese who have smartphones and use the internet regularly.

## **Indicator 8: Information Needs**

The final indicator of this study is a more open-ended attempt to understand what kinds of information people in South Sudan think they need most. We began with the most general question, and all respondents were asked: "What kinds of information do you think are most important for people in your community to receive?" The graph below shows the percentage of respondents who cited a given type of information as being particularly important for people in their community to receive. Respondents were allowed to select up to three categories of information that they thought were most important or relevant.





Respondents chose education and health as the most important for their communities to receive. Nearly 62 percent of respondents believed that their community should receive information about education, and around 55 percent cited health information as important. The reported importance of health-based information was expected, especially in light of the ongoing COVID-19 pandemic, however the primary importance of education-related information was not expected and deserves further investigation. Unfortunately, a short, telephonic survey does not allow for the qualitative follow-up that would have been necessary to understand why people were so interested in education-related information and what specific information they might have wanted. This would make an excellent topic for a small-scale follow-on study (either telephonically or in-person).

Information on gender, including girl's education and gender-based violence, was said to be important to the community for 43.9 percent of respondents. Because insecurity is an endemic problem in many parts of South Sudan, the relative importance that respondents gave to peace and security-related information was substantially lower than might have been expected. As with the findings related to education above, we do not have any qualitative data to better understand why people were not more interested in security-related information.

A key learning point for Internews partners is that the types of information that people are most interested in cannot necessarily be easily deduced. Small polls of listeners or viewers may be necessary to ensure that media content is tailored to demand.

## Health

Based on our prior expectations that there would be a high demand for health information, we asked respondents about their main sources of health information (both media and non-media sources). Respondents were asked to report their main information sources as well as which source was the most trusted. The graph below shows the main sources that respondents reported using for health information.





When asking respondents about media sources of health information, they are most likely to name radio as both a primary source and the most trusted source (see graph below, which presents most trusted sources). Nearly 85 percent of respondents stated that radio was one of their primary media sources of health information, while almost 79 percent said it was the one media source they trusted the most for this type of information. The next most cited media source for health was social media sites, but only 14 percent of respondents suggested that they would consult social media for health information.





When compared with the predominance of radio above, there was more diversity in the non-media sources of health information that respondents cited (below).





For health-related information, NGOs were the most cited non-media information source at almost 39 percent, followed by community health workers at 36 percent, and hospital/clinic doctors at 35 percent. While NGOs were the most cited source of health information, they were not quite the most trusted, as shown in the graph below.

Figure 30: Most Trusted Non-Media Sources of Health Information



Slightly more respondents said that they trusted doctors (working in hospitals or health clinics) than said they trusted NGOs. This is potentially important information for organizations (including NGOs) seeking to disseminate health information. Messages about health may be seen as more credible if they come from a local doctor than if they come from an NGO. In this same vein, community health workers were also cited as both a major source of health information and as a trusted source.

## Security

We also anticipated that security would be an important topic for people in South Sudan, and thus asked the same questions of respondents in relation to security as were asked for health. The series of graphs below present these results.

Figure 31: Media Sources for Security Information



In terms of the types of media used to access security information and the levels of trust, the results for security information are nearly identical to the results for health information.

Figure 32: Most Trusted Media Sources for Security Information



Radio predominates as an information source and is also cited by most respondents as the most trusted source. Nearly 81 percent of respondents reported that radio is their source of security information, and radio is the single most trusted media source for security information at 78 percent (see graph on the following page showing the most trusted sources of security information). Also, in keeping with the results for health information above, social media was the next most cited information source after radio at around 9 percent. It is also worth noting that nearly 5 percent of respondents said that they did not trust any media source for their security information. While 5 percent is a small proportion of the sample, this result is more significant when we consider that our sample is biased in favor of individuals who are more literate and have more access to media and information than the average person in South Sudan. These findings suggests that there is an important trust gap to be addressed in terms of media provision of security-related information in South Sudan.

### Figure 33: Non-Media Sources of Security Information



Finally, we turn our attention to non-media sources of security information. Like responses related to health, many respondents said that they turned to individual social connections to learn security information. Nearly 41 percent of respondents cited relatives and friends as a main source of security information. In contrast to the findings related to health, traditional or community leaders were a much more commonly cited source for security information (at 32.1 percent) than for health information (at 13 percent in the analysis above). Overall, security information is much more likely to come from informal, local sources compared to health information. Nonetheless, nearly a third of respondents (32.3 percent) did state that the national government is one of their main non-media sources for security information, and 18.9 percent claimed that soldiers and the military is a main security information source.



Figure 34: Most Trusted Non-Media Sources of Security Information

Respondents were also more likely to place the highest level of trust in the security information they receive from local and informal people sources. Nearly a quarter of respondents said that they trust security information from friends and family the most, while another 22 percent reported trusting local traditional or community leaders the most for information on security.



# Conclusions

• Radio access and phone access are very strongly correlated, and there are very few phone users who do not have access to radio. This point is further reinforced by the media reach statistics below. Radio can be used to advertise to phone users, and as a corollary, phones can be used as a means of engaging radio listeners (e.g., with call-in programs, phone polls, and SMS campaigns). Radio stations will benefit from hosting call-in programs that allow them to develop lists of active listeners, where with proper consent from callers, those lists have value and can potentially be sold to advertisers, or otherwise used by the radio station to promote their programs or causes. A similar argument could be made for television as well, because television access among our sample of phone users is at around 81 percent, which is much higher than we would expect for all residents of South Sudan.

• The predominance of Facebook use among internet users means that investing in Facebook marketing or in gathering opinions and data from Facebook (e.g., through chat-bots) may be a very good investment for media partners and campaigns that are targeting younger, more educated South Sudanese who have smartphones and use the internet regularly.

• The types of information that people are most interested in cannot necessarily be easily deduced from current events or broader social concerns. Small, regular polls of listeners or viewers may be necessary to ensure that media content is tailored to demand.

# Actionable Recommendations for Internews and Local Partners

• Improving access to radio and television in Unity State would produce a substantial increase in overall media consumption in Unity State.

• Improving access to smartphones in Warrap State would potentially produce a major increase in internet access/use in Warrap State.

• Women have far more limited phone ownership than men, so equipping more women with phones would shift women's access to information and the internet, as well as potentially shifting gender power dynamics in important ways.

• Radio stations can charge the most for advertisements from 4-8 pm in the evening. This is also prime time for television usage. Depending on the region, the next most popular radio use time is in the early morning from 5-8 am, and most stations broad-casting in most states can also charge more for this timeslot than the others.



# **Statistical Appendix**

This appendix provides supplementary graphs for reference.

# Media Consumption Habits and Preferences by State



#### Eastern Equatoria Media Usage: Time of Day



% of respondents

#### Western Equatoria Media Usage: Time of Day





n=43 % of respondents

% of respondents



n=43 % of respondents

#### Lakes Media Usage: Time of Day





n=30 % of respondents



## Newspaper



<sup>%</sup> of respondents

#### Warrap Media Usage: Time of Day



#### Newspaper







n=17 % of respondents

#### Western Bahr El-Ghazal Media Usage: Time of Day



n=15 % of respondents

#### Northern Bahr El-Ghazal Media Usage: Time of Day



% of respondents

% of respondents



% of respondents



% of respondents





n=35 % of respondents



#### Unity Media Usage: Time of Day

#### Jonglei Media Usage: Time of Day





# **Radio Listening by State**

This section provides graphs of listenership to all radio stations in South Sudan by state for which at least 10 percent of sampled respondents reported listening.





Percent of Respondents Who Reported Listening to BBC World Service English by State



Percent of Respondents Who Reported Listening to BBC World Service Arabic by State







Percent of Respondents Who Reported Listening to Voice of America by State



Percent of Respondents Who Reported Listening to Akol Yam FM by State

Upper Nile	0.0	
Jonglei	0.0	
Unity	0.0	
Warrap	0.0	
Northern Bahr El-Ghazal	0.0	
Western Bahr El-Ghazal	0.0	
Lakes	0.0	
Western Equatoria	0.0	
Eastern Equatoria	0.0	
Central Equatoria		7.8

### Percent of Respondents Who Reported Listening to Eye Radio by State







# **Television Viewing by State**

This section provides graphs of viewership of all television stations in South Sudan by state for which at least 10% of respondents reported having viewed that station.









Percent of Respondents Who Reported Watching CNN by State







Percent of Respondents Who Reported Watching NTV by State





Percent of Respondents Who Reported Watching Sudan TV by State

Percent of Respondents Who Reported Watching Al-Shorooq by State



## **Newspaper Reading by State**

This section provides graphs of readership of the top five most widely read newspapers in South Sudan by state.



Percent of Respondents Who Reported Reading Juba Monitor by State

## Percent of Respondents Who Reported Reading The Dawn by State







Percent of Respondents Who Reported Reading Almugif by State



Percent of Respondents Who Reported Reading Alwatan by State





# Research Methods Appendix

## Introduction

This methodology report is a companion to the Internews National Audience Survey main findings report. In order to make the main findings report more compact and consumable, the technical methodological details of the National Audience Survey study have been relegated to this report. Thus, this report does not contain any analysis of research findings and indicators, as all findings are presented in the main National Audience Survey report and the partner-specific reports and PowerPoint presentations that have been assembled and shared with partners.

The purpose of this report is to present sufficient methodological detail on the National Audience Survey sample and design to allow for future replication of the study, if desired, and to allow for accurate interpretation of the National Audience Survey data and all derivative results. Finally, this report provides an analysis of the methodological

approach taken, in terms of the benefits and pitfalls of the approach. This analysis is necessary and timely because remote, phone-based data collection is becoming more common in South Sudan and in least developed countries (LDCs) in sub-Saharan Africa. Especially in the wake of the COVID-19 pandemic, there has been (and likely will continue to be) significant need to collect meaningful and representative mediaaudience data from LDCs. Forcier utilized a novel research design for this study, combining two survey modes: interactive voice response (IVR) and computer-assisted telephone interviewing (CATI). To briefly summarize, the IVR survey mode is completely computerized and involves a pre-programmed survey (often referred to colloquially as a "robo-call") where the survey questions have been pre-recorded in multiple languages, and respondents who answer the phone are presented with the pre-recorded survey content along with instructions on how to respond to each question by dialing a given number on their phone. CATI involves a phone call made by a live CATI operator who then speaks with respondents and administers the full survey over the phone, entering the respondent's responses into a computer as the respondent provides responses.

The proposed combination of telephone-based modes was intended to capitalize on the fact that IVR is a low-cost method for calling a large number of potential respondents, whereas CATI is a comparatively more effective method for engaging respondents in longer surveys to collect a larger amount of more complex and higher quality data. As conceptualized, IVR would be used to contact and conduct a short screening survey with a large number of 1,000+ respondents, and then a longer survey would be conducted using CATI for pre-contacted IVR respondents who met the screening criteria by being regular users of target media.

Ultimately, this combination of methods did not work as well as had been hoped or anticipated, primarily because IVR calling obtained a much lower response rate than had been anticipated. While there may be some marginal improvements that could be made to the IVR mode in order to improve response rates in South Sudan, one of the key methodological findings of this study is that IVR is comparatively ineffective in South Sudan simply because of the poor functionality of the mobile network in the country. In our analysis below, we highlight response rates and call dispositions for IVR and for CATI in order to paint a clear picture of the benefits and limitations of each mode of contacting respondents. We conclude that CATI is clearly the best mode for executing telephonic work in South Sudan based both on the cost of data collection as well as the quality of the resultant data. IVR surveys may be more successful and cost-effective in the future, but improvements in the cost-effectiveness of IVR surveys will await substantial improvements in the quality of phone lines in South Sudan, and may also require the IVR calling unit to be based physically in South Sudan.

# **Study Objectives**

While the study objectives and indicators are covered in detail in the Main Findings report, it is useful to briefly review the objectives and indicators here for the purpose of future replication. For the 2021 National Audience Survey, the key research questions revolve around assessing the level of access to information in South Sudan and how it differs by location and demographic groups.

The main indicators, along with definitions, to be measured in the National Audience Survey are found in Table 1:

Table 1: Indicator and Definitions				
#	Indicator	Definition		
1	Media ownership	Ownership of functioning radio set, TV, smartphone, or simple phone		
2	Media access	Refers to having ever consumed or used a particular medium		
3	Media reach, consumption and usage	<ul> <li>Weekly reach is counted for anyone who uses radio, TV, social media and print within an average week.</li> <li>Consumption or use is weekly reach or penetration.</li> <li>Penetration is for mobile phones and internet/social media and based on ownership and access</li> </ul>		
4	Media habits and preferences	<ul> <li>Time of day, hours a day</li> <li>Preferred channel (i.e., listening to radio via internet, via app, via FM receiver on mobile phone, etc.) and language</li> </ul>		
5	Trust for media type, source or information provider	Trust is belief in the relative reliability and truthfulness of the media type, source, or information provider. Also measured by whether they would recommend the media, source, or information provider to a friend or family member (social proof).		
6	Media sources and information providers	<ul> <li>For traditional media: radio stations, TV stations, newspaper companies, etc.</li> <li>For new media: Facebook, WhatsApp, etc.</li> </ul>		
7	Sub-types of media sources (focus on radio and social media)	List of specific providers		
8	Information needs	Safety and security, basic needs, etc.		

Most indicators were operationalized through multiple survey questions, and all analysis in the Main Findings report is organized by indicator.

## **Research Design**

In light of the COVID-19 pandemic and the need to achieve a sizable sample at a reasonable cost, Forcier recommended a research design that included multiple phases and modes of remote data collection, including interactive voice response (IVR) and computer-assisted telephonic interviewing (CATI). Forcier, in agreement with Internews, subcontracted the implementation of the IVR component to Viamo.

This multi-mode approach was selected as it allowed for the collection of high-level indicators from a nation-wide sample in a cost-effective manner. Figure 1 summarizes the research design of the 2021 South Sudan National Audience Survey.



Figure 1: Research Design Summary

During the IVR stage, about 1,400 phone numbers provided by Forcier were contacted through Viamo's automated survey system. These phone numbers were obtained through Forcier's telephonic panel, sample answers random digit dialing (RDD) technique and classical RDD. Among the roughly 1,400 numbers, 332 respondents completed the survey, and 290 consented to a call-back for the longer and more comprehensive CATI survey. The IVR established a language for the pre-recorded interview, presenting respondents with a choice among English, Juba Arabic, Dinka, and Nuer, with the option for the survey to be conducted in the respondent's chosen language. The CATI asked respondents their preferred language before the start of interview.

The CATI sub-sample consisted of 1,020 phone numbers, where 284 were from the pre-screened IVR stage and 726 were phone numbers that did not respond during the IVR stage. At the end of data collection, 424 respondents completed the CATI survey. From this, Forcier can project an aggregate margin of error of about 4.8 percent with an overall confidence level of 95 percent.

The table below describes the two samples, their dates of execution, the achieved sample size, and the method for obtaining the phone numbers used in the sample.

Table 2: Achieved Sample Size, Mode, and Execution						
	IVR	САТІ				
Timing of data collection	January 4 – 24, 2021 (21 days)	February 11 – March 3, 2021 (18 days)				
Number of completed interviews	284	424				
Method for obtaining respondent phone numbers	Forcier telephonic panel, Sample Answers RDD technique, and classical RDD	Pre-screened via IVR and all previously mentioned techniques where numbers were not reached during IVR				
Approximate length of questionnaire	15 questions	232 questions				

Based on the sample frames used (i.e. the sources of phone numbers called), we can treat the National Audience Survey sample as being representative of the population of mobile phone owners in South Sudan. It is also likely that this sample is representative of the set of all people in South Sudan who have access to phones (even if they do not own them).

## **IVR Data Collection Summary**

During the IVR data collection stage, Viamo (our sub-contracted IVR supplier) made computerized IVR calls to 1,541 phone numbers, with each number being subject to multiple call attempts (up to 10 attempts, in some cases). Multiple sample frames provided the phone numbers for the IVR calls, and these frames will be detailed below. All numbers in the sample frame were derived as a random sample of all possible existing/valid phone numbers in South Sudan, and thus the frames and resultant samples can be held to be representative of the population of mobile phone users in South Sudan.

## **Sample Frames**

Three types of sample frames were used for this study and will be described in detail below:

- 1. Pre-verified numbers derived from Sample Answers' proprietary RDD process
- 2. Numbers derived from Sample Answers' RDD that were not pre-verified
- 3. Traditional RDD numbers

## **Pre-verified Numbers from Sample Answers RDD**

The primary sample frame for IVR calls came from a set of 1064 phone numbers that Forcier had already verified (through prior phone calls) as belonging to a working phone line and a respondent who expressed a willingness to be surveyed in the future. These pre-verified numbers were themselves sourced from Sample Answers, which is a third-party company that provides a form of "smart" random digit dialing (RDD) in which a machine-learning algorithm is fed existing South Sudanese phone numbers and then uses an algorithm to predict other phone numbers that are likely to exist. Because the Sample Answers algorithm is proprietary, it cannot be described in detail. However, it will suffice to observe that Forcier has made extensive use of Sample Answers numbers in South Sudan and Mozambique and has generally found the numbers provided by Sample Answers to be sufficiently random to be representative of the mobile-phone-using population within a given country.

## **Unverified Numbers from Sample Answers RDD**

A secondary set of 399 numbers were used to supplement the main sample, and these supplementary numbers were all a product of the Sample Answers RDD process. The critical distinction between these numbers and the main sample of 1,064 is that these 399 numbers were not pre-verified in any way, meaning that the numbers may or may not have belonged to active phone lines.

## **Classical RDD**

Finally, when an exhaustive number of calls had been made to the pre-verified numbers and the unverified Sample Answers numbers, a small set of additional calls could still be made under the existing budget. The remaining IVR budget supported a total of 78 successful calls to numbers that were generated through Viamo's classical RDD process.

## Viamo's RDD process is as follows:

Viamo seeds their calling system with all known prefixes of mobile network operators in the country of interest, and unknowns represented by question marks up to the number of mobile number digits in the country (e.g., 012345??????). With the rest of the digits unknown, Viamo's system combines all probable digits and dials randomly till it finds valid numbers to connect to and serve with the survey. In the case of South Sudan, these are the prefixes Viamo fed the system.

211916251???,	211925782???,	211916291???,	211916267???,
211916251???,	211925782???,	211916291???,	211916267???,
211916281???,	211916245???,	211925771???,	211925704???,
211925722???,	211925730???,	211916219???,	211916275???,
211925742???,	211915111???,	211915151???,	211925799???,
211925710???,	211916238???,	211925753???,	211916202???,
211915105???,	211916220???,	211925764???,	211915138???,
211912226???			

Given the above algorithm, each random number was therefore dialed once whether it failed or it connected. In total, Viamo dialed 73,872 numbers through this RDD process, which yields a raw response rate of around 0.1 percent. This contact and response rate is extremely low, but the cost of calling in this mode is also exceedingly low, at around \$1.53 USD for each completed response.

## **IVR Responses**

Thus, with a total of 1,541 numbers spread across these different sample frames, the total number of IVR responses garnered was 332, giving an overall response rate of 21.5 percent. That response rate is much lower than the approximately 50 percent response rate that was predicted prior to the start of the study. The primary reason for the response rate being so low was an extremely high call failure rate at nearly 48 percent. The graph below shows final call dispositions for the IVR sample, indicating the proportion of phone numbers that ended the IVR study with a given disposition. The graph shows that, after many repeated attempts, the most common reason for non-response was call failure, at 48 percent phone numbers included in the sample.




Incomplete interviews were also a substantial cause of non-response at almost 31 percent of the sample, while outright refusals were extremely uncommon. However, in most cases, we can interpret incomplete interviews as a form of refusal because these are cases when respondents are intentionally breaking off the interview by hanging up. Strategies for reducing break-off include presenting respondents with a shorter questionnaire and offering incentives to respondents.

Investigating call failures further, around 50 percent of all call failures were a result of what is referred to as "normal temporary failure," which indicates that the network is not functioning correctly and that the condition is not likely to last a long period of time. In most IVR studies, such temporary failures are not particularly problematic because they do not last long. However, such failures were exceptionally common in South Sudan, even across a large number of adequately spaced calls to a given number. Viamo's project manager suggested that this is most likely due to the unreliable functionality of mobile networks in South Sudan. Unfortunately, there is nothing that can be done to reduce call failure rates due to a poorly functioning network.

The other common reasons for call failure in the IVR sample related to phone users not responding to accept the incoming calls (which suggests that a large proportion of potential respondents were screening their phone calls). One method for increasing the likelihood that calls are answered involves sending SMS messages one or two days prior to the call, letting respondents know to expect a survey from a given number. Promising incentives along with the SMS messages (i.e., as part of the messages) might also increase the likelihood that potential respondents would respond to the incoming IVR calls. While SMS messages and incentives increase the cost per completed call, they may prove to be cost effective if they substantially increase the response rate (and/or decrease the break-off rate) and thereby decrease the total number of call attempts that need to be made per completed interview.

## **CATI Data Collection Summary**

The following section summarizes the CATI data collection stage. This includes team structure and CATI procedures, a summary of quality assurance methods, and an overview of achieved samples.

## **Team Structure and CATI Procedures**

This sub-section provides an overview of the CATI data collection team structure and CATI procedures.

Prior to the commencement of the CATI stage, the Research Officer conducted a twoday training for the CATI data collection team in Juba, South Sudan. Training revolved around understanding the CATI survey questionnaire, troubleshooting common problems and a pilot. The data collection team consisted of six enumerators and one supervisor. Enumerators were chosen based on their ability to speak numerous languages (including Dinka, Zande, and Classical Arabic) to minimize potential language barriers during interviews.

Each enumerator was provided with a mobile phone and a tablet. Enumerators conducted calls of pre-assigned phone numbers, and all responses were stored in the tablet's mobile data collection software. Throughout CATI, each phone number was attempted for a total of five times. Following the completion of a survey, respondents were immediately sent phone credits worth 160 South Sudanese Pounds.

The team supervisor was responsible for ensuring the proper functioning of all equipment, troubleshooting problems or concerns arising from the data collection stage, performing real-time quality assurance (QA) functions, and sending out participant incentives.

CATI data collection took place from February 11 to March 3, 2021, over 18 working days. All phone calls were conducted in Forcier's Juba office (henceforth "call center").

#### **Summary of Quality Assurance Methods**

The following sub-section provides a summary of data quality assurance procedures employed throughout the CATI data collection process.

Survey responses are uploaded to Forcier's secure server as soon as a CATI survey is completed. To ensure high-quality data and to maximize the full potential of mobile data collection technology, a multi-step quality assurance procedure is employed throughout data collection. Specifically, this involved both real-time level and comprehensive QA.

At the real-time level, the team supervisor conducted QA of up to 20 percent of all daily completed calls in the form of listening to randomly selected audio recordings (10 percent) and real-time listening of interview (10 percent). Inconsistencies and other problems spotted throughout the QA processes are flagged and reported to the Research Officer for further review.

The comprehensive QA involved a thorough examination of all data collected by the end of a working day. Each new batch of data were screened by the Research Officer using Stata statistical software and Forcier's standard quality assurance script to analyze and clean all time, location, and interviewer-related data, and consult team supervisors to identify and rectify discrepancies. The Research Officer also analyzed all questions for substantive inconsistencies including outliers, implausible values, and for unexpected distributions on categorical or ordinal values. When identified, these issues were addressed directly with the team supervisor and frequently, with the enumerators themselves.

During the comprehensive QA, the Research Officer found that a particular set of interviews conducted by one enumerator were short in duration. The average duration for interviews for all enumerators lay between 25 to 35 minutes; however, for one set of six interviews, it was found that the duration of interviews were consistently below 20 minutes. Upon listening to the audio recordings of those particularly short interviews, it was discovered that the enumerator falsified and/or skipped interview questions altogether. This issue was resolved after the enumerator re-conducted the interviews after receiving a warning.

## **Overview of Achieved Sample**

Table 2 provides a breakdown of the respondents who have completed the CATI survey by state. Most of the respondents were from Central Equatoria (28.5 percent), Western Equatoria (16.5 percent) and Northern Bahr El-Ghazal (12.3 percent), while Upper Nile (3.1 percent) and Unity (2.8 percent) had the least. The potential implications from this distribution on the quality of the overall analysis are explained under the Limitations section.

Table 2: CATI Respondent State Breakdown		
State	Number	Percent of Sample
Central Equatoria	121	28.5%
Western Equatoria	70	16.5%
Northern Bahr El-Ghazal	52	12.3%
Jonglei	48	11.3%
Lakes	37	8.7%
Warrap	28	6.6%
Eastern Equatoria	22	5.2%
Western Bahr El-Ghazal	21	5.0%
Upper Nile	13	3.1%
Unity	12	2.8%
TOTAL	424	100%

## Limitations

This section provides a brief overview of the methodological limitations of both the IVR and CATI studies.

# IVR

The primary limitation of the IVR sample has been laid out in the analysis of IVR response and call failure rates above. The completion rate of 21.5 percent was much lower than expected, primary as a result of call failures due to network failures. This low response rate led to a smaller IVR sample than had been anticipated, which in turn resulted in a reduced sample size for the CATI portion of the study as well. Ultimately, the CATI sample size is still sufficient to support valid analysis with a 5% margin of error and a 95% confidence level. Nonetheless, a larger CATI sample size would have permitted greater precision when disaggregating the data by key demographic traits and sub-populations of interest.

The second important limitation of the IVR sample is that it required respondents to enter information themselves, using their phones – a procedure which permits significant room for human error on the part of the respondents. Whereas CATI interviews are executed by a trained and well-supervised enumerator, IVR surveys are self-administered and permit respondents to make errors in how they enter data on their own behalf. When performing CATI call-backs to respondents who had filled out the IVR survey, Forcier's enumerators found several respondents who gave different responses over the phone than they had entered into the IVR survey. In most cases, enumerators were able to establish that the respondent's answers in the IVR survey were inaccurate simply because the respondent had accidentally pressed the wrong button (number) on their phone when responding.

## CATI

The following sub-section provides a detailed overview on limitations to data analysis stemming from the study's research design, followed by a number of examples of outliers that were confirmed and verified during the QA process.

## **Methodological Limitations**

A number of limitations are worth noting with respect to the research methodology and collected data.

First, as the CATI calls and interviews were conducted 8:00 AM to 4:30 PM, it is likely that phone numbers belonging to working adults, or those who are not able to answer their phones due to being at their workplace, are likely to be underrepresented in the sample. This problem of availability biases based on daytime calling is compounded by the lack of stable electricity in most parts of the country, which has made commonplace the practice of leaving mobile phones in paid charging stations, only to be retrieved at the end of the workday. Hence, it is likely that the sample is skewed with a higher proportion of respondents with non-regular employment.

Additionally, as shown in Table 2, the sample is overrepresented by respondents from the state of Central Equatoria. This may be explained by better signal coverage within and around the capital area, Juba, as well as the signal coverage for Zain and MTN, the two mobile operators in South Sudan. Though MTN coverage encompasses most of the country, Zain signal coverage is mostly limited to urban areas. Hence, with the CATI numbers containing numbers from both Zain and MTN, it is likely that the sample is biased towards respondents in urban areas, while respondents in rural areas are underrepresented.

Furthermore, a small number of interviews were not completed due to language barriers. Though the CATI enumerators were chosen based on the diverse range of languages spoken, there were 14 respondents who spoke languages that were either unidentifiable or where none of the enumerators were proficient in.

## **Verification of Outliers**

As part of the QA process, the Research Officer followed up on outliers and logical contradictions that were evident in the collected data. Logical contradictions or outliers include respondents who have never listened to the radio, watched television, read a newspaper and used the internet, respondents who are college-educated or had some college education who have never used the internet, and respondents who have completed secondary education but have never watched television nor used the internet. In the case of either enumerator and/or respondent errors, the research team was able to correct them during data cleaning. However, in some cases, it was discovered that some contradictions or outliers were, in fact, an accurate report from respondents. To this end, in order for these results to be interpreted with adequate context, a number of important examples are listed below.

Four respondents reported having never used any of the four media types of interest (television, radio, newspapers and internet). Upon following up with two of these respondents, it was found that one resided in a cattle camp, while another resided in a rural village, where both areas did not have electricity and both respondents were not literate.

Two respondents who are college-educated, or are in the process of receiving tertiary education, have stated that they have never accessed the internet. Upon follow-up, it was found that these respondents have only recently began pursuing their college education and have yet to be provided with equipment with access to the internet.

21 respondents who were reported to have completed secondary education also reported either having never watched a television nor having used the internet. After consulting with local researchers, it was found that the vast majority of secondary schools across the country, owing to the lack of access to electricity, do not have the means to complement book-led secondary level curriculums, including televisions and computers with access to the internet.

# Endnotes

- 1. "World Bank Open Data" (The World Bank, 2018), https://data.worldbank.org/. 2018 Adult literacy rate of 34.5 percent
- 2. Forcier Consulting, "South Sudan National Audience Survey" (Internews, September 2013), vi-vii.
- 3. "We're Still Listening: A Survey of the Media Landscape in the Accessible Areas of South Sudan in 2015" (Internews, March 2016), 17, <u>https://internews.org/resource/were-still-listening-survey-media-landscape-accessible-areas-south-sudan-2015</u>.
- 4. "We're Still Listening: A Survey of the Media Landscape in the Accessible Areas of South Sudan in 2015," 4.
- 5. Forcier Consulting, "South Sudan National Audience Survey," vii.
- 6. In this and all disaggregated analysis below, readers must bear in mind the fact that the sample was not designed by gender or state and therefore the sub-sample sizes, especially per state, are quite small (as few as 12 respondents in some states). The resulting point-estimates, e.g., for a given percentage reported in a graph, are imprecise and should be interpreted cautiously.
- 7. This difference in phone ownership between women and men respondents is statistically significant at p=0.000 in a chi-squared test of independence.
- 8. When respondent state is used as a predictor of radio ownership, Unity State predicts significantly lower levels of radio ownership (in a logistic regression with state fixed-effects) at p = 0.012.
- 9. When respondent state is used as a predictor of television access, Western Bahr El-Ghazal predicts significantly lower levels of television access (in a logistic regression with state fixed-effects) at p = 0.022. Western Equatoria predicts significantly lower levels of television access at p = 0.037. Note, Warrap is the omitted category in the regression.
- When respondent state is used as a predictor of television access, Western Equatoria predicts significantly lower levels of television access (in a logistic regression with state fixed-effects) at p = 0.021.
- 11. For more information on Boda Boda Talk Talk, see: https://internews.org/updates/bbttlearningcollection