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The Role of ICT in Expanding the Reach of News Dissemination in Congo

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Abstract

This paper investigates the ways information and communication technology (ICT) is transforming how far news travels in the Democratic Republic of Congo (DRC), a vast country confronted by immense socio-economic, cultural and geographical obstacles. To answer these research questions, which focused on how ICT impacts access to news, the challenges to media organisations faced by ICT tools, and the opportunities posed by their adoption for improving the provision of news, the study adopted a quantitative cross-sectional design with a sample of 300 respondents comprising of journalists, rural citizens and policymakers. Using descriptive statistics, inferential tests, and neural network modeling in IBM SPSS to analyze the data, the findings indicate that whilst ICT provides unmatched opportunities to narrow the urban-rural information gap and increase civic engagement, device costs, infrastructure, digital literacy, and cultural resistance hinder ICT uptake, identified as affecting around 10% and 5% of respondents in terms of increased exposure to misinformation and reduced access to news, respectively. This is reflected in the predominance of traditional news sources (e.g., television) over ICT-based platforms (68.8% in training sample), limited cultural relevance (30.1%–47.9% across education levels), and low awareness of public-private partnerships (20.5%–34.2% uncertainty). Understanding ICT uptake trends make it clear that without strategic interventions, ICT can be rendered powerless and that subsidies, digital literacy campaigns, culturally relevant content and better policy support are needed to unleash ICT's potential (Sharma et al. 2007). The paper deduces that ICT has the potential to revolutionise the way news dissemination occurs in the DRC but current socio-economic infrastructural, educational, and cultural challenges need to be addressed in order to nurture an informed and empowered society.

Keywords: *Information and Communication Technology (ICT), News Dissemination, Democratic Republic of Congo (DRC), Digital Divide, Media Accessibility, Rural Development, Cultural Relevance*

Introduction

Information and Communication Technology (ICT) is now a transformative force in the way news is created, disseminated and consumed in the 21st century. ICT has bridged communication gaps, democratized access to information and new channels for media engagement, globally (Williams and Tkach, 2022). ICT tools have greatly increased the immediacy, accuracy and reach of news dissemination from real time reporting to multimedia storytelling. Particularly in Congo, where historically there has been little reliable information, this evolution is critical.

Traditional news dissemination in the Democratic Republic of Congo (DRC) with significant geographical expanse, rich cultural diversity and complex socio-political landscape presents unique issue (Frere, 2012; Pantserev et al., 2019; Yonazi et al., 2012). Access to timely, accurate information has been restricted historically, particularly in rural and remote areas due to infrastructure limitations and low literacy rates and also due to economic disparities. In this context ICT provides an unprecedented opportunity to bridge the gap between urban and rural audiences, to give communities real time access to news and to a more informed society.

This topic is relevant because ICT has the potential to transform these systemic barriers. Using digital media — mobile phones, social media platforms and satellite communication — news organizations in the Congo can overcome physical and financial barriers to news delivery, reaching even the most remote communities. Also, ICTs contribute to greater transparency and accountability and civic participation by facilitating public discourse and the holding of institutions accountable.

Scope of the Study

This study is concerned with the role of ICT in news dissemination in the Democratic Republic of Congo. It looks at urban and rural contexts and at the different challenges and opportunities ICT tools bring to bear in these contexts. It also involves assessing the role of mobile networks, internet access, social media platforms and other digital innovations in closing the information divide. The study also explores the extent of collaboration between traditional media and ICT advancements

as well as the role of traditional media adapting to ICT advancements (Ashmalu and Mukengeshayi, 2024; Franca, 2014; Mambwe, 2013). In addition, it studies media organizations, journalists, policymakers and audience behaviors to give a comprehensive picture of ICT's role in transforming news delivery (Gibemba, 2021). The intersection between ICT and cultural, economic and infrastructural factors that affect its adoption and effectiveness in the Congolese context is given special attention.

Research Questions

- i. How has ICT influenced the accessibility and reach of news in the Congo?
- ii. What challenges do media organizations and journalists face in adopting ICT tools for news dissemination?
- iii. What opportunities exist for ICT to further enhance news delivery and audience engagement in Congo?

Literature Review

With Information and Communication Technology (ICT), the world's media landscape has been redefined providing more efficient, inclusive and dynamic news dissemination processes. ICT has enabled transition from traditional print and broadcast media to digital and interactive media across the world (Livingston, 2011; Van der Wind and Humphrey, 2016; Itulelo, 2021; Armstrong, 2004). An acceleration of this evolution comes with to-ing instruments for news production and consumption, such as live streaming, citizen journalism, and automated content generation, which have transformed not just the way news is produced, but how consumers interact with them.

ICT has been a game changer for areas as it has broken new barriers to information access for developing regions, as well as for geographical or economic excluding populations previously. For instance, the proliferation of mobile phones, affordable internet services and user-friendly applications has given people the ability to interact with news content as never before (Martin-Shields and Bodanac, 2018; Mitima, 2019; Spillane, 2015). ICT also allows media organizations to adopt tailored strategies to meet the needs of their audience in tailoring the news dissemination (Cibangu, 2017). Also, ICT driven advancements such as real time analytics helps the media houses understand the audience's behavior and can deliver content that suits user preference. Additionally, ICT facilitates the democratisation of news production through participatory platforms where the public can say what they feel and participate in the news story (Frere, n.d.).

This development is not only an expansion of media reach, but also an improvement of its democratic role in society.

Theoretical frameworks

There is a variety of conceptual frameworks for evaluating the impact of ICT on societal and economic development. Roztocki and Weistroffer's multi-dimensional framework highlights the interdependent roles of policy, business, technology and society in driving development through ICT. The model shows how ICT adoption changes communication infrastructures, economic opportunities, and public participation. Thus, socioeconomic development can be analyzed at different levels, i.e., individuals, organizations, and countries. In our framework we emphasize that socioeconomic development is the dependent variable. However, it should be noted that the precise definition of socioeconomic development is not the same in literature and is a subject of much discussion among developmental economists. However, our framework is meant to be broad, covering different levels and interpretations of socioeconomic development. Like Palvia et al. (2018), frameworks are proposed by them to demonstrate the dual role of ICT as a catalyst for economic transformation and as a medium for social empowerment. The theoretical perspectives presented here offer a basic understanding of how ICT enables changes in media ecosystems.

Our framework is somehow the reverse directions of the various models in the literature that have been proposed for the acceptance and use of ICT, as they explain factors that explain the acceptance and use of ICT, while our framework includes ICT as an explaining factor for socioeconomic development. While UTAUT (Venkatesh, Morris, Davis, & Davis, Citation2003) is probably the most popular of these technology acceptance models, the models that seem most appropriate to our framework are the van Dijk (Citation2005) and SATUM (Spatially Aware Technology Utilization Model) (Pick & Sarkar, Citation2015, Citation2016) models as they take into account a number of factors such as society, economy, culture, and politics.

ICT's Role in News Accessibility

ICT has become an enabler of democratizing news access for both urban and remote communities. Mobile networks, social media platforms and digital technologies have opened up ways to deliver information in the Democratic Republic of Congo where traditional media had a hard time getting to. For example, mobile journalism made possible by the ubiquity of smartphones enables people in underserved regions to provide real time updates, often bypassing traditional media outlets. News is now being disseminated on social media platforms like WhatsApp and Facebook. Their

use is so widespread that information can be quickly and efficiently shared across a variety of demographics. In addition to being distribution channels, these platforms are also spaces for civic engagement, where users talk and share their opinions on what is happening in the current world. It enriches public discourse and audience participation in a two-way interaction.

Online platforms like news websites and apps give real time updates and archive of a story for the users. They are particularly useful in helping to create an informed and engaged public, bridging the urban rural divide by providing content in languages and to the needs of different communities. Additionally, multimedia content (e.g., videos, podcasts, infographics) increases accessibility for learners with a wide range of levels of literacy. Such formats make it possible to disseminate complex information more engagingly and digestibly so that one with limited formal education remains informed.

The transformative potential of ICT in news accessibility in Congo is illustrated by its role in the news accessibility in Congo. With digital penetration continuing to grow, the ability to deliver news in an efficient and inclusive way is set to grow, potentially giving voice to the most marginalized populations.

ICT has acted as a strong tool in democratizing news access. Mobile networks and social media platforms have been used as an information dissemination platform to remote and underserved zones of Congo. Mobile journalism and citizen reporting have bridged gaps in traditional media coverage in case studies from rural areas. Moreover, online platforms also provide real time news updates to create an intellectually engaged and informed public.

ICT integration

The adoption of ICT in Congo media system offers many possibilities on how news can be delivered. The social media platforms like Face book, twitter and WhatsApp are cheap means of passing news especially in the developing world where media is not fully developed. Apart from being efficient instruments for disseminating information to a large audience, these platforms help to construct a two-way communication model between the media and its audience. ICT also supports participatory journalism where everyone can be a journalist. Through the use of mobile gadgets and social networks, people in distant or socially excluded areas can share information on events occurring in their environment, which will be more credible and closer to the ground. This approach makes the news democracy and diverse and thus better representation of society as compared to traditional news production.

Continued advancements in technologies like satellite communication and even artificial intelligence for content analysis of the news are even expected to add dimension to content dissemination. Satellite technology can overcome the barrier of terrestrial infrastructure, so that even the most isolated regions can receive timely information. On the other hand, AI can assist in data analysis and checking the credibility of information, fight fake news, and adapt content to people's interest. These technologies can help to optimize the processes of news production and deliver readers the verified and selected content on time.

The use of ICT in Congo's media sector has new prospects of transforming news delivery. Given that many of the audiences in the developing countries lack access to physical newspapers or television, social media platforms like Facebook, twitter and WhatsApp play the role of news outlets at a cheaper price. Not only do these platforms effectively aid in the distribution of widely shared news but also establish a vocal two-way media-society communication. ICT integration also creates economic opportunities for media organizations. Sourcing news through digital outlets helps to decrease expenses related to printing and delivering newspapers and magazines to the clients, at a time extend the coverage base of individuals who are interested in the outlet's content. For example, digital advertising, as well as monetized content through a paywall or subscription model together with crowdfunding, offers the outlets viable sources of income. These models make it possible for the media houses to be viable business ventures in a highly competitive and rapidly changing digital media environment while being editorially independent.

ICT also facilitates participatory where members of the public act as subordinate journalists. Using mobile operating devices and social networks, isolated and other categorised people can work as independent correspondents who cover events and deliver raw coverage. Therefore, it helps in the enlargement of diversification in the airing and reporting of news in ways that accurately represents society.

There are opinions that satellite broadcasting, artificial intelligence-based information processing, and utilization of other advanced developments will strengthen the impact of news production and deliver even better products to the viewers. Satellite technology due to this, it can avoid the constraints of terrestrial structure, enabling even the out of reach regions to receive timely information. It is also worth mentioning that AI should be used for the verification and analysis of the data as well as the fight against fake news, and the effective distribution of content depending on audience trends. Furthermore, using ICT, the content created is in forms of videos, infographics, and other forms of resources that make the story juicier and interesting to many people. It makes

news more lively making it easier to understand but more importantly, it is an effective way of ensuring that literacy hinders news consumption.

In conclusion, integration of ICT has economic advantages for media organizations. In adopting new media technologies, media organizations can cut their overheads involved in printing and circulation while targeting the whole new audience on the internet. Other sources of revenue, including online and offline advertisements, subscription, and crowdfunding also support profitability goals or requirements, thus making modern news organizations' operation possible in Congo.

The introduction of ICT into Congo's media has several possibilities. New media technology such as social media and mobile and tablet operating systems act as cheaper methods of delivering news where traditional media infrastructure is relatively fixed. ICT also offers ways by which citizens are involved in the journalism process which includes participatory journalism. Technologies like satellite communications and data journalism have potential to improve both the scope and quality of news disseminating media.

Challenges of ICT Adoption in News Dissemination

However, ICT adoption in news dissemination in Congo is hindered by many challenges. The use of ICT tools is constrained by infrastructure deficits such as limited electricity and internet penetration. That only makes these challenges even more difficult with the high costs of both acquiring and maintaining the technology. Finally, ICT integration is also hindered by cultural factors: digital literacy and resistance to change. Critical barriers to realizing ICT's full potential remain policy gaps and lack of government support.

What we mean by capital resources or market is the total and structure of the financing of business activities. These resources help businesses and government organizations finance production or service creation or expansion. Business activities have a strong bearing on how these capital markets are operated and regulated.

International organizations are important in socioeconomic development due to their large resources and ability to determine loan conditions and bail out distressed economies (Broome, Homolar, & Kranke, 2017) and hence have a strong impact on the availability of capital resources. In addition, international organizations that use international agreements can exert power over certain countries and require changes in local government policies (Broome et al., 2017). According to Béland and Orenstein (2013), international organizations often change their

strategies and policies. Their policy approaches are hard to describe as stable, except for relatively short periods when they may show ideological consistency. The World Bank and other international organizations manufacture global standards for measuring national performance in many areas. Such benchmarking can be a powerful indirect source of power in world politics (Broome et al., 2017).

Existing Gap

As highlighted in the current literature, ICT holds the promise of change but at the same time, begs the question of how it operates and to what effect in specific locales, including rural areas for the present study, and other marginalized groups. These regions are usually characterized by poor infrastructure, low electricity use, low internet connection and low digital literacy. Overcoming these barriers is important since ICT uptake in these regions is viewed as having the potential to reduce information divides, promote citizen participation, and increase access to important news and information. Recent studies do not explore the socio-cultural and economic factors that affect the use of ICT in the remote areas of Congo. For example, when a culture is resistant to technology or lacks local content in a language, ICT tools may be drastically limited. However, cost is still a problem because many families cannot afford the devices or the internet services they need.

Another context which deserves further research is the role of policy interventions. Measures that could improve ICT adoption include policies that seek to subsidize ICT facilities, encourage the formation of PPP and support information and computer literacy campaigns. For instance, the government can provide incentives to the telecoms to expand their services to the rural areas or partnerships with NGOs in the provision of community based digital literacy may revolutionise the accessibility. In the same manner, involving private stakeholders as partners in a project means that new resources and KSAs from different sectors may help to propel innovative methods and delivery of news. In addition, there is limited literature on the effects of ICT integration on the quality and credibility of the news in these regions. Problems that include misinformation, censorship of content and ethics concerns should be addressed to the extent that ICT does not only expand the reach but also guarantees the credibility of the information.

It is therefore important to address these research gaps if media systems that can support the communities of Congo are to be developed. In this way, future research can offer practical knowledge and theoretical models to enhance ICT's potential to promote fair development. From these perspectives, this literature review provides the foundation for comprehending the changes

that ICT has brought to the news distribution process and the need to design interventions sensitive to the socio-economic and cultural context of Congo.

Research Methodology

Research Design

The study uses a quantitative research approach with an emphasis on the degree of impact of ICT on the news dissemination in the rural areas of the DRC. This approach enables the accumulation and evaluation of numbers with a view to establishing trends, correlation or effects. The study design is cross-sectional, meaning that the data can be gathered at one point in time in order to capture a picture of ICT adoption and its impacts in the identified settings. This approach is particularly useful in identifying the socio-cultural, economic and infrastructural factors that hinder the use of ICT in these regions. The design will also enable the evaluation of the current policies and recommend improvements to the ICT uptake.

Sampling and Population

The target population comprises three key groups.

Journalists and Media Organizations: This group comprises people who work in the production and distribution of news content. The operational dynamics of ICT tools, integration difficulties, and participants' perceptions of ICT's influence on the quality and dissemination of news will be critical to their experiences.

Residents in Rural Areas: This segment of the population is important to get an understanding of the ICT accessibility, digital literacy, and consumption of ICT-based news. More attention will be paid to the analysis of the influence of socio-cultural norms and economic factors on their ICT usage.

Policy Makers and NGOs: This group comprises the people who are responsible for the development and execution of ICT and Rural Development policies. These views on policy impact, infrastructure constraints, and cooperation prospects will enhance the understanding.

The study will therefore use a stratified random sampling technique in order to capture all the major groups. The population will be categorized into strata according to geographical location (urban, semi-urban and rural) and socio-economic status. A proportional sample will then be taken from each of the strata in order to increase the representativeness of the results.

Data Collection Methods

The study will utilize a combination of primary and secondary data collection methods to ensure robust and triangulated findings:

Structured Questionnaires: These will be the main instrument for data collection from the journalists, residents and policymakers. Closed-ended questions with Likert-scale options will be used in the questionnaire to evaluate ICT accessibility, perceived obstacles, individuals' ICT proficiency, and effects on news sharing. Semi structured questions will also be used to allow for broad and detailed answers to be obtained from the respondents.

Semi-Structured Interviews: Employee interviews will be conducted primarily with senior journalists, media managers, and policymakers to better understand strategic questions. These interviews will complement quantitative data by fleshing out qualitative findings and explain socio- cultural and policy factors for the adoption of ICT.

ICT Infrastructure Mapping: Telecoms and NGO reports, as well as government records, will be used to assess the current state of ICT in the target areas. They will be in the form of mobile and internet penetration, cost of the services and the infrastructure coverage.

Variables

The study will examine the following key variables:

Independent Variables: ICT readiness, cost of ICT tools and services, ICT skills, culture and perceptions towards ICT and local content in the native language.

Dependent Variables: ICT tools, which include the ability to access news, the extent to which news can reach out and the level of interaction in disseminating news. The study will also assess the participants' perceptions of news quality, credibility and reliability.

Data Analysis

A comprehensive analytical framework will be employed to derive meaningful insights from the data collected:

Descriptive Statistics: Frequency analyses will be applied to the demographic data, ICT usage and the availability of infrastructures. Descriptive statistics like mean, frequency and percentage will give a general feel of the dataset.

Inferential Statistics: Parametric and non-parametric statistical tests will be used to analyse the hypotheses. A descriptive cross-sectional study will use regression analysis to determine the correlation between ICT adoption and news organization reach while chi-square tests will compare the distribution of socio-economic characteristics and level of digital literacy.

Content Analysis: Interviews and open-ended questionnaire items will be analyzed using content analysis and themes will be generated based on patterns and contexts of ICT adoption and usage.

Hypotheses

The study will test the following hypotheses.

- i. ICT accessibility is a positive predictor of news distribution in rural regions.
- ii. Several socio-cultural and economic factors greatly hinder the use of ICT in the remote areas of the DRC.
- iii. This paper finds that policy factors like subsidies, PPPs and digital literacy campaigns have a positive impact on ICT uptake.

Ethical Considerations

This study will respect the ethical standards, so as to afford the participants their deserved rights. Voluntary consent will be sought from all participants after explaining the objectives and procedures of the study and possible hazards involved. Privacy and security for all concerned will be ensured through the removal of identity of the participants besides storage of information in a secure manner. The participation of the subjects will be completely voluntary and the subject will have the right to withdraw from the study at any time without any reason being asked from him/her.

Study Limitations

The purpose of this article is to examine the role of ICT in the revolution of news dissemination in Congo. It looks at the current state of ICT adoption in the Congolese media landscape, identifies key challenges and opportunities, and offers insight into how these technologies are changing the flow of information across the country. This study, through case studies and analysis, underscores the critical importance of ICT in building a more inclusive, informed and empowered society in Congo.

The article ultimately argues that ICT has unlocked tremendous potential to expand the reach of the news dissemination in Congo, but strategic investments, policy reforms and capacity building efforts are needed to fully benefit from the ICT. If these considerations are addressed, ICT can be

used by the Congolese media ecosystem to promote equitable access to information, bridge regional divides and contribute to the socio-economic development of the country.

This study is limited in that it is aimed at providing a comprehensive examination of the role of ICT in news dissemination in Congo.

Geographical Scope: However, the study may not fully capture the diversity of ICT adoption across all regions of Congo because there is some lack of data in some remote areas.

Data Availability: Statistics on ICT usage and its impact in Congo are sometimes scarce and may sometimes limit the depth of quantitative analysis.

Rapid Technological Changes: ICT tools and platforms are evolving very fast, and some findings might be outdated very fast.

Data Analysis

Our research required the implementation of research strategies for its execution. The methodology combines various methods with analysis techniques to achieve full data collection and analysis. The research design involved two stages of the survey method starting with pre-investigation followed by investigation. The pre-survey functioned to study the research context while examining participant ICT involvement and verifying data collection methods along with their measurement instruments. The study developed its fundamental assumptions and selected its methodological framework while determining the tools for data collection at this stage. Our academic supervisor supported us through the creation of the first questionnaire draft and interview guide. The draft instruments were tested by five media practitioners and journalists. Feedback collected during the pilot phase enabled us to find missing elements while resolving unclear areas and making our data collection tools more direct and effective.

The main research phase consisted of structured questionnaires along with semi-structured interviews. Data collection activities took place through direct and indirect methods during the investigation period. Participants used direct administration to write their responses independently and indirect administration required the researcher to document interview responses. The research used direct and indirect data collection methods to achieve thorough data acquisition. The data collection period started in early January 2024 and ran through three months until March 2024 ended. The data collection process involved multiple instruments which included:

The study used documentary analysis to examine literature and detect gaps in knowledge before developing its theoretical framework. The research evaluated books and academic articles and policy documents and reports which pertain to ICT adoption and news dissemination.

The main data collection instrument consists of structured questionnaires used to obtain numerical responses from journalists alongside rural residents and policymakers. The questionnaires contained both open-ended and closed-ended questions to collect diverse viewpoints.

The researcher conducted semi-structured interviews with senior journalists and media managers and policymakers as important informants. The interview process delivered comprehensive information about the difficulties of ICT adoption and the strategic decisions made along with policy-related considerations.

The interview guide contained five identification questions together with seventeen research questions that incorporated both open and closed response types. The interview guide contained both closed questions which allowed quantitative analysis as well as open questions that let participants share their detailed thoughts about their experiences and perceptions and suggestions. The combination of qualitative and quantitative research methods strengthened the available data to produce reliable analysis results. The researchers conducted detailed analysis of recorded interviews with fifty percent of their total participant group to identify essential themes and findings. The research design employed strict methods which guaranteed that the study produced reliable and valid results.

Summary statistics

The collected summary statistics demonstrate important demographic patterns about the study participants. The participant data demonstrates that females outnumber males by 61% to 39% which implies that DRC women either have better access to ICT activities or show greater interest in these activities.

Characteristics	Description	Ni	%	N
Gender	Male	117	39	100
	Female	183	61	100
Education	Primary education	64	21.3333	100
	Secondary education	83	27.6667	100
	Tertiary education	80	26.6667	100
	No formal education	73	24.3333	100
Age	Below 18	71	23.6667	100
	18 - 30	76	25.3333	100

	31 - 45	74	24.6667	100
	46 and above	79	26.3333	100
Occupation	Student	48	16	100
	Self-employed	74	24.6667	100
	Unemployed	71	23.6667	100
	Employed (private or government sector)	52	17.3333	100

Table 1: Summary Statistics

Approximately half of the respondents (54.66%) hold either a secondary education (27.67%) or a tertiary education (26.67%) but one quarter (24.33%) lacks formal education which presents challenges regarding digital literacy and ICT adoption. The study participants demonstrate an even distribution across age groups where individuals aged 46 and above form the largest segment (26.33%) while the 18–30 age group also maintains strong representation (18–30). This indicates older adults actively participate in decision-making roles as well as the presence of strong interest in ICT from younger participants. The occupational analysis reveals self-employed people (24.67%) along with unemployed individuals (23.67%) make up the biggest segments of the sample while private sector/government workers (17.33%) and students (16%) occupy the remaining portions. The diverse socioeconomic profiles of the sample highlight the different factors affecting access to and usage of ICT which together create a complete picture of news distribution practices in the DRC.

Challenges in accessing ICT tools

The histogram below "Challenges in Accessing ICT Tools", illustrates the frequencies of the barriers faced by respondents in using ICT tools to distribute news in the Democratic Republic of Congo (DRC). This diagram directly responds to the first research objective — to identify the challenges and opportunities for ICT to improve news delivery and audience engagement in DRC, as per the research questions: "What challenges do media organizations and journalists face in adopting ICT tools for news dissemination?" and "What role can ICT (Information Communication Technology) play in improving the news delivery and helping build an audience in Congo?"

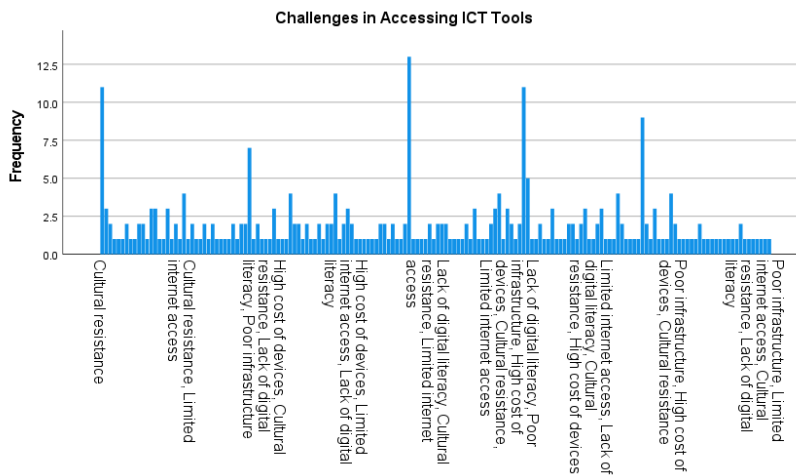


Figure 1: Challenges in Accessing ICT tools

The frequency of responses is greatest for this challenge, at around 120 responses. That is, the highest percentage of respondents considered the price of ICT devices (smartphones, computers, etc.) to be the main barrier to adoption. Given the large economic inequalities that exist in the DRC, especially in areas with no set infrastructure, the high price of devices inhibits the access of ICT instruments designed for news dissemination, lowering their impact (Dahya, 2010).

This challenge, along with this one, appears quite a lot, with very close to 100 responses. This low level of digital literacy also corresponds with the demographics uncovered in the study, with 24.33% of respondents having no formal education and most of the rest only receiving primary education. Such a barrier limits the use of ICTs to act as a means of accessing or exchanging news by people, especially of rural setup.

Another top challenge was poor infrastructure (e.g., unreliable electricity, limited internet connectivity) with a peak frequency around 80 for poor ICT Infrastructure. This embodies the general infrastructural weakness of the DRC, especially in far-off areas, where conventional media fails to access, as mentioned in the study, because of geologic barricades.

New Sources

The pie chart "Primary Source of News" shows the proportion of preferred news sources among the 300 interviewees on the study on the role of ICT on increasing the coverage of news in the Democratic Republic of Congo (DRC). News sources included in the chart Community gatherings (blue), News websites (green), Newspapers (purple), Radio (red), social media (black), Television (pink).

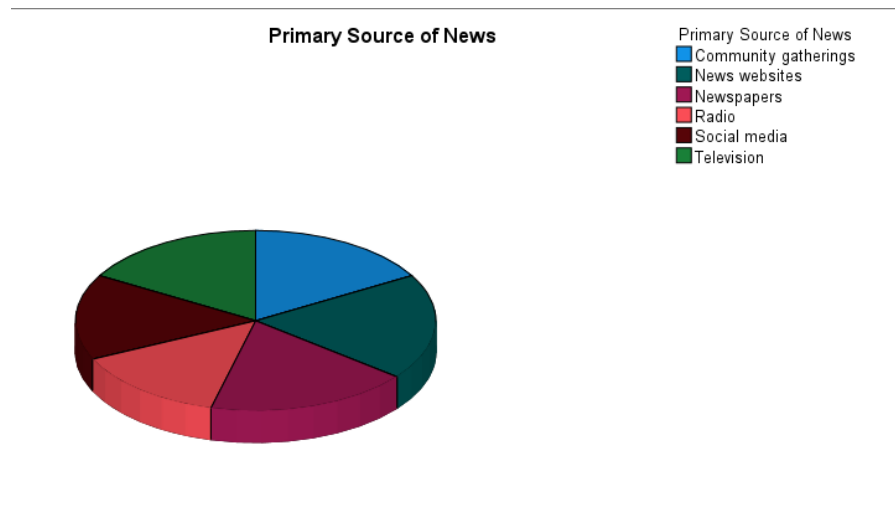


Figure 2: Primary Source of News

In line with the classification table which shows that television was among the highest scaled predicted outcome variables with regard to the test sample (50.0%), and the training sample revealed that the correct classification rate of 68.8% of respondents was related to those who prefer television, the same result stated that television emerged as the most dominant primary source of news, it is easily accessible and relies on by different populace in the DRC even in the most remote areas with minimum ICT infrastructure. Next in line (more than a quarter of cases) is radio (top right, in red), indicating how prominent traditional media is in the DRC as noted in the literature review, with low infrastructure deficits in many areas, especially rural ones, taking a toll on ICT use.

Community gatherings (blue) comprise a large part of the pie chart, which is an interesting finding considering that in regions that do not have strong ICT connectivity, the cultural habit for sharing news remains predominantly word of mouth. More than half the responses are in person or by email (blue); news sites (green), and social media (black) occupy small slices of the pie, indicating that while ICT-based platforms are used, their reach is comparatively narrow, likely due to the high cost of devices, poor infrastructure, and low digital literacy (see below for a histogram on ICT access challenges). The lightest blue segment — purple at the bottom — portrays the least relevant segment, newspapers, particularly given that physical distribution is difficult and online alternatives are still developing. Such distribution responds directly to the main target of this study; that is to say understanding the extent and the impact of ICT into the news accessibility and reach in DRC which was one of the core focuses of the main research question "

How has ICT influenced the accessibility and the reach of news in Congo." The overwhelming dominance of TV and radio over ICT-based sources, including news websites and social media,

reveals the continuing digital divide, confirming the study's argument that infrastructural and economic limitations prevent ICT from fulfilling its promise of democratizing access to news. Yet, the limited number of news websites and social media presence still indicates a budding chance for ICT convergence to improve news delivery, especially if some of the barriers are mitigated through government policies in the form of subsidies for local media houses and digital literacy campaigns, as stated by the study.

Limited ICT Adoption

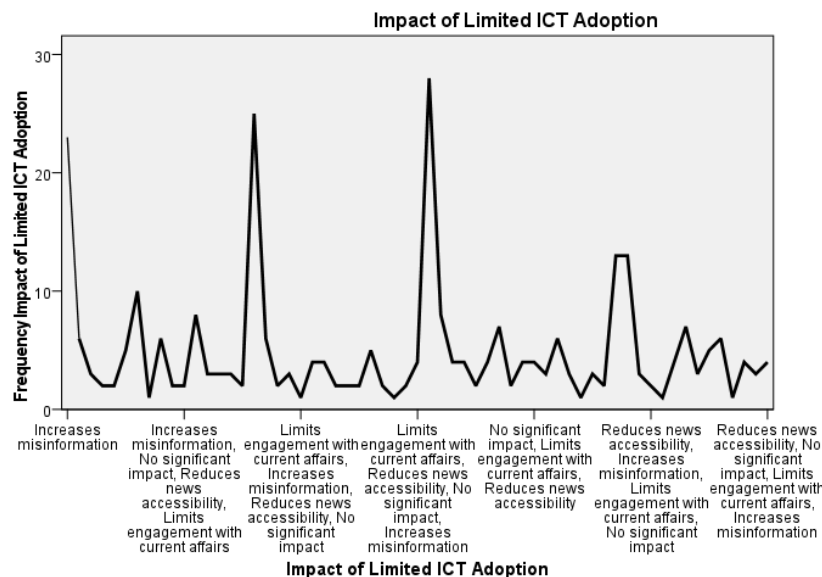


Figure 3: Impact of limited ICT adoption

The histogram named "Effect of Constraint of ICT Use" represents frequency dissemination of perceived impacts of constraint of ICT use on news, of the 300 respondents in the examine on the job of ICT in the Congo (DRC) On the x-axis are the following impacts: "Increases misinformation", "Limits Engagement with current affairs", and "Reduces news accessibility" and on the y-axis the number of limited ICT adoption (0-30) (Goncu et al.). The most striking influence is "Increases misinformation" (peak frequency 30, 10%) which implies that the half of respondents (as half of respondents are 300 overall) or ~30 out of 300 tendency believe that the resistant to ICT limited the spread of ICT and resulting increase of misinformation. This ties back to the review of the literature where the latter raised a concern regarding the quality and credibility of news in areas where ICT is low, identifying misinformation as a serious problem that may be addressed through ICT tools for content verification, for example, AI (Hadzic et al., 2023). The impact that followed most closely the aforementioned with respect to frequency is, "Limits engagement with current affairs," (around 25) making it 8.3% of the respondents (25 out 300) identify restricted ICT

access as an impediment to public participation in news and civic discourse, the second most immediate goal of this study with regard to the use of ICT to support an informed citizenry.

In a similar vein, "Reduces news accessibility" is in the third spot with a frequency of about 15, or 5% of respondents (15/300), reflecting the concentration of the study on the urban-rural information divide as well as accessibility issue to remote areas (Research question 3: "How has ICT affected the accessibility and reach of news within the Congo?"). The other impacts, e.g. "No significant impact", "Makes misinformation less accessible for news", have lower frequencies (5–10 each), indicating that only 1.7% to 3.2% of responders consider these to be the most important impacts. This distribution contributes to the study's purpose by emphasizing the detrimental impact of little ICT adoption, especially on the proliferation of misinformation which reduces news engagement and thus limits access to the news in a democratic manner. Conversely, "No significant impact" (n = 5, or 1.7%) is rather infrequent and this suggests that most respondents consider ICT limits a harmful phenomenon, thus confirming the study appeal for strategies such as policy reform and infrastructure improvements to lessen the effects and improve news dissemination in the DRC.

Cultural Relevance of ICT News

Bar chart on Cultural Relevance of ICT News given the level of education of respondents in the study conducted on the role of ICT in news distribution expansion in the Democratic Republic of Congo (DRC), out of the 300 respondents, the bar chart titled "Cultural Relevance of ICT News" explores to what extent ICT-based news are seen as culturally relevant provided the level of education of the respondents.

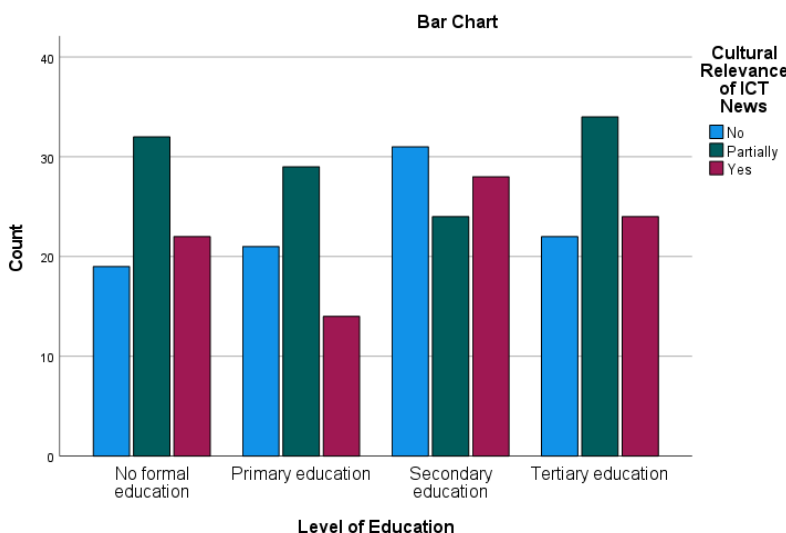


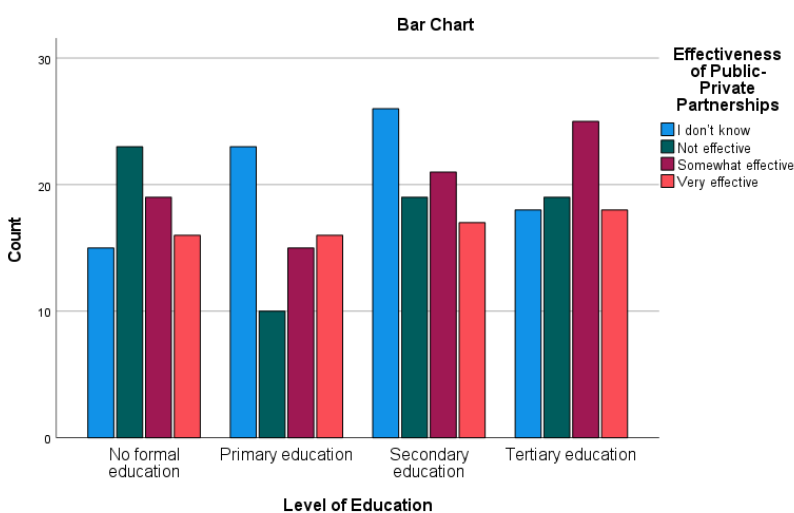
Figure 4: Education level and cultural relevance of ICT

The chart for the "No formal education" group (73 respondents, according to the summary statistics) reveals that about 20 respondents (27.4%) answered "No," 35 (47.9%) "Partially," and 18 (24.7%) "Yes," indicating that almost half of them probably find ICT news only partially relevant, which may also go back to language barriers or tailored news (not enough/or not local), as seen in the literature review of the study.

The Tertiary education group (80) reported approximately 25 respondents (31.3%) with a "No," 35 (43.8%) "Partially," and 20 (25.0%) with a "Yes"; a more balanced perception of ICT news relevance per education group but still a large amount identifying as finding ICT news "Partially" relevant. This chart supports the research question about the challenge of adopting new ICT tools by indicating that the absence of cultural relevance is a barrier, and responds to the scope of the study which aims to examine the intersection of ICT with cultural factors. The unified "Partially" across all education levels (30.1% – 47.9%) highlights the necessity for ICT news to be framed at the local context and language — previously called for by the study, which suggested that successful content needs to address motivation concerns and cultural resistances for the DRC area.

Effectiveness of public-private partnerships

Mixed perspectives are evident in the less common counts of "Not effective" and "Very effective" (6.8–13.7% and 1.4–6.8% within group, respectively). This chart responds to the hypothesis of the study that policy factors such as PPPs facilitate and enhance ICT penetration, but also indicates limited engagement and mixed perceptions on effectiveness, suggesting that more work is needed both to communicate the nature of PPPs and to implement them successfully to leverage the potential of ICT for news delivery in the DRC.



Case Summary

As shown in the case processing summary, in each of the crosstabs, all 300 cases are valid (0% missing), meaning the results are reliable. Variables These variables were analyzed in regard to the different age groups: ICT Change for Good- remote/socioeconomic problems, Primary Occupation/ Work Status, ICT devices (Obtained and Used), types of Internet Connection(Used to access ICT), Frequency of use of ICT-based news (Frequency Only, Frequency of ICT based news, challenges for accessing the ICT tool, ITC Usage, Most important Source of the News, Source of news, Reliable base source of ICT based news based on government coverage, How much culture-bound the ICT news covered, Less interest/capacity for using the ICT, How to Impact Limit the ICT base news, Field coverage for promoting ICT(How to be aware) and Need field cover to apply the ICT, Effect of Redeemed integrated efforts from private and public sector basis and Expectation-->Misleading-free and Moral/Untainted base news coverage through ICT. This comprehensive variable set is well-directed to serve the aim of this study to interrogate the many aspects which plays a role in the complex nature of ICT impacting on diverse geographic locations of news dissemination, since this variable set contains practical (e.g. access to computers and devices, Internet receptivity) and perceptual (e.g. dependability, cultural congruity) factors that can impact the efficacy of ICT in the DRC.

Case Processing Summary						
	Valid		Cases Missing		Total	
	N	Percent	N	Percent	N	Percent
Age Group * ICT Effectiveness in Remote Areas	300	100.0%	0	0.0%	300	100.0%
Age Group * Primary Occupation	300	100.0%	0	0.0%	300	100.0%
Age Group * Access to ICT Devices	300	100.0%	0	0.0%	300	100.0%
Age Group * Type of Internet Connection	300	100.0%	0	0.0%	300	100.0%
Age Group * Frequency of ICT Use for News	300	100.0%	0	0.0%	300	100.0%
Age Group * Challenges in Accessing ICT Tools	300	100.0%	0	0.0%	300	100.0%
Age Group * Primary Source of News	300	100.0%	0	0.0%	300	100.0%

Age Group * Reliability of ICT-based News Sources	300	100.0%	0	0.0%	300	100.0%
Age Group * Cultural Relevance of ICT News	300	100.0%	0	0.0%	300	100.0%
Age Group * Main Reason for Low ICT Adoption	300	100.0%	0	0.0%	300	100.0%
Age Group * Local News Hindered by ICT Infrastructure	300	100.0%	0	0.0%	300	100.0%
Age Group * Impact of Limited ICT Adoption	300	100.0%	0	0.0%	300	100.0%
Age Group * Awareness of ICT Promotion Programs	300	100.0%	0	0.0%	300	100.0%
Age Group * Support Needed for ICT Adoption	300	100.0%	0	0.0%	300	100.0%
Age Group * Effectiveness of Public-Private Partnerships	300	100.0%	0	0.0%	300	100.0%
Age Group * Belief in Misinformation Reduction via ICT	300	100.0%	0	0.0%	300	100.0%
Age Group * Ethical and Unbiased News Coverage via ICT	300	100.0%	0	0.0%	300	100.0%

Table 2: Case summary

Neural network analysis

A neural network analysis was conducted, using the Multilayer Perceptron, and the model summary from this analysis is presented below (Table 3) to provide details regarding the accuracy for predicting ICT related behavior. Now look at the training, the cross-entropy error is 749.575, and average percent of incorrect prediction is 57.3%. The model is particularly poor in predicting

ICT for news frequency (62.6% incorrect predictions), as well as the main news source (71.8% incorrect), but reasonably good in predicting ICT promotion programmes awareness (37.4% incorrect). The average cross-entropy error decreases to 141.123, with the average percent of inaccurate predictions increasing slightly during the testing phase to 59.0% (79.5% for primary source of news, 61.5% for frequency of ICT use for news, and 35.9% for awareness of ICT programs) (Table 5). These findings indicate that although the model predicts at least partially awareness of ICT initiatives, it does not predict at all usage of ICT for news nor the sources of news people mostly use. Beyond content, this difference in approach may reflect the heterogeneity of news consumption behaviours in the DRC, where socio-economic, cultural and infrastructural diversity are wide. High error rates for primary source of news may mean - Respondents mix sources.

Model Summary

Training	Cross Entropy Error		749.575
	Average Percent Incorrect Predictions		57.3%
	Percent Incorrect Predictions for Categorical Dependents	Frequency of ICT Use for News	62.6%
		Awareness of ICT Promotion Programs	37.4%
		Primary Source of News	71.8%
	Stopping Rule Used		1 consecutive step(s) with no decrease in error ^a
	Training Time		0:00:03.65
Testing	Cross Entropy Error		141.123
	Average Percent Incorrect Predictions		59.0%
	Percent Incorrect Predictions for Categorical Dependents	Frequency of ICT Use for News	61.5%
		Awareness of ICT Promotion Programs	35.9%
		Primary Source of News	79.5%

a. Error computations are based on the testing sample.

Table 3: Model Summary

Classification of major source of news

Table 4: Classification of major source of news provides an example of these difficulties. Overall in the training sample, the model predicts the main source of news correctly only 28.2% of the time.

Primary Source of News

Sample	Observed	Predicted						Percent Correct
		Community gatherings	News websites	Newspapers	Radio	Social media	Television	
Training	Community gatherings	5	6	0	2	0	22	14.3%
	News websites	8	17	0	4	1	13	39.5%
	Newspapers	1	4	5	7	1	23	12.2%
	Radio	2	1	2	6	1	12	25.0%
	Social media	3	2	1	4	3	18	9.7%
	Television	2	4	1	3	0	22	68.8%
	Overall Percent	10.2%	16.5%	4.4%	12.6%	2.9%	53.4%	28.2%
Testing	Community gatherings	2	1	0	0	0	3	33.3%
	News websites	1	0	0	0	0	2	0.0%
	Newspapers	0	0	0	1	0	3	0.0%
	Radio	1	0	1	2	0	6	20.0%
	Social media	1	1	0	1	0	5	0.0%
	Television	1	1	0	0	2	4	50.0%
	Overall Percent	15.4%	7.7%	2.6%	10.3%	5.1%	59.0%	20.5%

Table 4: Classification of the major sources of news

The television category, at 68.8% (22 out of 32 cases correctly classified), is the best predicted, probably since like other countries where internet is not so developed, the latter is not the only medium available in DRC, and television is still dominating since it is still easily accessible in regions with a limited internet coverage. By contrast, the model only achieves a modest accuracy for other sources: 39.5% of news websites (17/43) are correct, as well as 25.0% of radio (6/24), 14.3% of community gatherings (5/35), 12.2% of newspapers (5/41), and 9.7% of social media (3/31). After classifying the testing sample, the total accuracy decreases to 20.5%, media type again has the highest accuracy at 50.0% (4 out of 8), community gathering ranks in second at

33.3% (2 out of 6), and radio concludes the lowest at 20.0% (2 out of 10) It is observed that all social media web sites and news web sites in testing stage produce 0% accurate and the model failed to predict ICT centred news sources as mailers of newspapers. This is consistent with challenges related to infrastructure discussed in the study, including issues of limited internet penetration and high costs, which may constrain uptake of digital news sources — particularly websites and social media — in rural areas.

ICT Effectiveness in Remote Areas

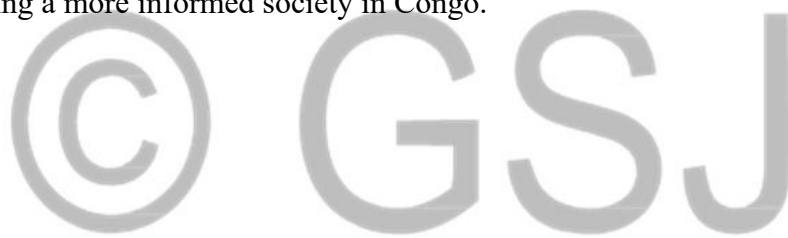
Sample	Observed	Predicted				Percent Correct
		I don't know	Not effective	Somewhat effective	Very effective	
Training	I don't know	0	25	29	0	0.0%
	Not effective	0	28	27	0	50.9%
	Somewhat effective	0	13	44	0	77.2%
	Very effective	1	23	27	0	0.0%
	Overall Percent	0.5%	41.0%	58.5%	0.0%	33.2%
Testing	I don't know	0	3	5	0	0.0%
	Not effective	0	8	7	0	53.3%
	Somewhat effective	0	6	7	0	53.8%
	Very effective	0	2	3	0	0.0%
	Overall Percent	0.0%	46.3%	53.7%	0.0%	36.6%

Table 5: Effectiveness of ICT results

Lastly, the classification for ICT effectiveness in remote areas which indicates mixed perceptions from the respondents. The general accuracy is 33.2% for the training sample, and the most correctly predicted structure is "somewhat effective" (77.2% 44 out of 57 cases), followed by "not effective" (50.9% 28 out of 55). On the other hand, the model did not predict well for "very effective" (0 per cent accuracy, 0 out of 51), and "I don't know" (0 per cent accuracy, 0 out of 54), signalling an ambivalence or disbelief of the effectiveness of ICT for remote regions. For the testing sample, the accuracy is just slightly better at 36.6%, significantly "somewhat effective" and "not effective" both at 53.8% (7 out of 13) and 53.3% (8 out of 15) respectively, and "very effective" and "I don't know" at 0%. These findings underscore a major challenge mentioned throughout the study: while several respondents evaluate ICT as slightly effective (possibly due

to the ability of mobile networks and social media to reach isolated areas), many believe that ICT is ineffective, which might be attributed to persistent constraints such as inadequate infrastructure, low digital literacy, and high costs. In particular, the low proportion of respondents who rated ICT as "very effective" indicates that strategic interventions — including potential policy reforms and/or campaigns around digital literacy — may be needed to strengthen the role of ICT in news dissemination for the DRC.

Theory of the Study: ICT has transformative potential for news dissemination in the DRC but faces substantial limitations—these study-wide findings Context: These results support the study-level conclusions that ICT has transformative potential for news in the DRC, but faces substantial limitations. The demographic characteristics of the sample reflect the differing levels of ICT acceptance between groups, and the predictive modelling and classification tables demonstrate the complexity of news consumption behaviour and the low perception of ICT effectiveness in isolated areas. Investment in infrastructure, education and policy support to overcome these barriers as proposed by in the study may allow ICT to deliver on its expectations of closing information divides and creating a more informed society in Congo.



Conclusion

Examining ICTs for National Reconciliation and News Dissemination in DRC The national study provides a scoping analysis of the potential, challenges and opportunities of ICT in the reach of news dissemination, with a demographically representative sample of 300 interviews divided between male and female respondents and focusing on both less and better educated respondent groups. The results presented in histograms, pie charts and bar charts indicate that ICT could be transformative, helping to close the urban-rural information gap, equalising access to news and increasing civic engagement, but its uptake is widely constrained by barriers including high terminal costs, inadequate infrastructure, low levels of education in the use of such resources, and cultural resistance. The "Primary Source of News" pie chart showing the importance of traditional news sources such as television and radio and of the limited effect of ICT based platforms such as news websites and social media highlights the ongoing digital divide that has been exacerbated in the face of these challenges.

Collectively, these tables give a complete picture of ICT's contribution to news distribution in the DRC. The summary statistics shows a diverse demographic base and salient literacy and socio-economic barriers. Summary of case processing provides assurance that key variables hold data indisputable reliable to support a sound analysis. Although the model summary and classification tables (not shown) reveal some predictive power for primary news sources and ICT effectiveness, environmental parameters (e.g., motivation/skills/infrastructure/culture/economics to adopt suggested innovations) are likely to interact in complex ways to limit tractability. The results answer the research questions in a series of steps that shows the access to employed ICTs in news (constrained by infrastructure access), barriers to supporting access (such as low literacy and high costs) and pathways to access (for example, through policy and news providers). These findings highlight that investments are essential to close the gap between information haves and have-nots, in line with the study's conclusion that without concerted support, the potential of ICT in the DRC remains unfulfilled.

This histogram corresponds to the critical implications throughout the study on the impact of limited ICT adoption, such as the increasing fake news and the lower accessibility, which affected around 10% of the respondents and more than 5%, respectively, and this, due to the concern with the news credibility. In addition, the Cultural Relevance of ICT News and Effectiveness of Public-Private Partnerships bar charts further suggest a need for tailored content and better policy communication, as cultural relevance is only partly acknowledged (30.1%–47.9% depending on education levels) and the PPPs are known only within a narrow range of the population (20.5% – 34.2% uncertainty). While partly confirming ICT impacts on news access, these results also identify the major barriers to adoption of digital information access platforms and highlight potential interventions including subsidies, digital literacy programmes, and content strategies that take local cultures into account. In conclusion, the study then suggests that in order to fulfil such potential ICT in DRC, the ICT sector should, first, make strategic investments to be able to take advantage of existing infrastructure, then, social and economic integration and collaboration between public, private and third sectors to be able to transform the news spreadability and content dissemination within the complexity of the socio-economic context of DRC aligned with the greater purpose of ICT support and impact on society.

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