



Awareness and Perception of Digital Broadcasting among Broadcast Journalists in Kaduna State

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ABSTRACT

The purpose of this study was to investigate Kaduna State broadcast journalists' perceptions and awareness of digital broadcasting. The study aims to ascertain whether broadcast journalists are aware of digital broadcasting, whether they consider it a positive development for the broadcast industry, what obstacles they face when it comes to digital broadcasting, and how they perceive solutions to these obstacles in Kaduna State. The Diffusion of Innovation theory and the Technology Acceptance Model served as the study's pillars. Three stations, representing state, federal, and private media organizations in the state, were purposefully chosen from 26 stations in Kaduna State using the survey design. These stations were Liberty Radio & Television, Federal Radio Corporation of Nigeria (FRCNK), and Kaduna State Media Corporation (KSMC). 122 journalists working in the newsrooms of the three stations provided the data. Because there weren't many journalists, the census approach was used. According to the study's findings, journalists are aware of digital broadcasting and its many advantages for the broadcast sector, but with associated difficulties. In order to accommodate journalists who are not aware of the trend and its advantages, it was suggested that the government and all parties involved in the broadcast industry expedite the acquisition of digital equipment in order to make the complete transition and start more awareness-raising campaigns about the shift to digital broadcasting

INTRODUCTION

Recent technological advancements have accelerated to the point where science fiction is being turned into reality on a daily basis, leaving little time for adoption. These advancements have had a long-term impact on how we view and consume media. The expansion of media technology is evident, since any technological advancement tends to influence the messages and their impact on audiences. The switch from analog to digital television is one example of such an innovation (Escor, Ogri & Henshaw, 2019). According to Morris and Ogan (2016), both society and the broadcast industry have benefited greatly from the 21st century. The ability to transmit and record information is enhanced by each of these communication breakthroughs. It is challenging to completely comprehend the impact of one medium until another enters the picture. The media sector will have greater opportunities in the field of convergence as a result of these new technologies.

From the invention of cathode ray tubes by William Crookes in 1878 to their eventual standardization by German scientist Karl Ferdinand Braun in 1897, Singer and Vujnovic (2018) propose that technological developments in the pursuit of combining audio and visual communication had a single objective: to improve the characteristics of electronic communication. The Columbia Broadcasting Service (CBS) in America began experimenting with the idea of having shows on television in 1931, just like they had on radio, according to Orlu (2019). In 1952, UHF broadcasting resulted from this. When AT&T deployed Telstar, the first satellite to transmit television signals, ten years later, the investigation of Arthur Clarke's proposal gained attention.

Technology and innovation development have grown rapidly in the twenty-first century. In the past ten years, broadcast stations have been buzzing about switching from analog to digital broadcasting because the broadcast sector is at the forefront of embracing these technical advancements (Defleur and Dennis, 2020). Nigeria is not excluded from this digital shift, since new stations are growing in tandem with the trend of old stations moving, according to Aviles & Leon (2019). The federal government has started the digital transition in Kaduna, one of the states that has contributed to Nigeria's history of broadcast media development. According to Agbese (2017), the public would typically react in a particular way to the change, as is the case with all changes. Innovations and changes in technology do not differ in this way. Journalists who may have diverse opinions about the trend, particularly those who are aware of the change, have reacted differently to digital broadcasting. Though this viewpoint regarding broadcast journalists in Kaduna is unknown, this reaction occasionally manifests itself in their perception, which may be favorable or unfavorable. Thus, this study aims to investigate the degree to which Kaduna State journalists understand and value the digitization of broadcasting.

Statement of the Problem

Because it fundamentally alters how broadcasting organizations function, digital broadcasting is regarded as one of the most important advances in the broadcasting industry. The broadcast industry has been impacted and transformed as a result of the drastic changes it has sparked. Herbert (2018) asserts that the shift from analog to digital broadcasting is a positive

development since media stations' satellite transmission has eliminated the limitations of both analogue and non-satellite systems (Agba, 2019). Nonetheless, journalists around the world, and in Nigeria in particular, have responded and viewed digital broadcasting in a variety of ways; these opinions, whether favorable or unfavorable, could have an impact on broadcasting (Hassan, 2018). What do journalists in Kaduna State think of the trend, given that digital broadcasting has been introduced in regions like Kaduna State and Nigerian broadcast media are currently transitioning? This study looks at how broadcast journalists in Kaduna State perceive and understand digital broadcasting.

Research Objectives

The objectives of the study include to:

1. Examine the extent of awareness of digital broadcasting among broadcast journalists in Kaduna State.
2. Determine broadcast journalists' perception of digital broadcasting as a welcome development to the broadcast industry in Kaduna State.
3. Identify the challenges to digital broadcasting in Kaduna State.
4. Examine perceived responses to challenges of adopting digital broadcasting in Kaduna State.

LITERATURE RIVIEW

The origins of the broadcast sector in Nigeria may be traced back to Daventry, England, when the colonial government started keeping an eye on and transmitting BBC news and programming to the majesty's servants in this region of the world in 1932. (Cokenwa, 1993). Radio broadcasting made its official debut in Nigeria in 1936 when the first Radio Distribution Service (re-diffusion) was established in Lagos to disseminate shows that came from the BBC in London but were still included in the BBC's international services. Television broadcasting in Nigeria started in 1959 in Ibadan, according to Ugwu (2018). In order to launch Western Nigeria Television, the Western Regional administration, led by Chief Obafemi Awolowo, founded it. Today, the broadcast industry has grown into a large industry and can boast of several radio and television stations, allowing audiences a variety of programmes.

Digital Broadcasting

Digital broadcasting, which applies to both television and radio broadcasting services, is the transmission and receiving of moving images and sound using digital signals for broadcasting over radio frequency bands as opposed to analogue (Obot & Inwang, 2017). Digital radio, or digital sound broadcasting, is defined by Severin & Tankard (2019) as the use of modulation and compression to broadcast audio programs (sports, music, news, etc.) over the radio spectrum. In contrast to the earlier analogue television technology, which employed analogue signals, digital television (DTV) uses digital encoding to transmit television signals. At the time of its development, it was considered an innovative advancement and represented the first significant evolution in television technology since colour television in the 1950s (Singer & Vujnovic, 2018).

According to Suarez (2017), the physical path, the assembly, and the return path are the three components that make up digital television services. While the assembly is in charge of presenting programs to viewers, the physical is in charge of the signals that make it to the television screen. The ability of viewers to provide the broadcaster with feedback in several formats is the focus of the return path. Analog and digital broadcasting differ greatly from one another. Digital television, particularly satellite television, is widely available. According to Aluechia (2019), a station must consistently be able to create content that is in digital formats or easily digitalized in order to successfully and completely follow the digital broadcasting standards. There are numerous ways in which digital broadcasting differs from analog. The way signals are transmitted is one significant distinction. According to Paulussen and Ugille (2018), who cited the UK Cabinet Office, there are four methods that digital transmission signals are sent: cable, satellite, digital terrestrial television, and phone connections.

- *Cable*: About 200 digital television channels can be broadcast by cable to viewers at home. Additionally, cable providers might offer a regular phone connection as well as quick internet access. This adaptability guarantees that viewers will utilize the returning path.
- *Satellite*: Satellites often offer a single digital transmission service with hundreds of channels. Satellites could theoretically offer a two-way channel, however they often only offer a one-way service.
- *Digital Terrestrial Television*: The transmitter network for this television broadcast is located on land. Televisions with antennas receive signals transmitted in this manner. This service does not have a return path. It is hence a one-way relationship.
- *Telephone Connection*: The majority of developed nations have expanded their telephone service's bandwidth to accommodate television signals, allowing viewers to select which television shows to have sent to their homes. The type of signal transmission used in digital broadcasting depends on which of the four platforms works best for the station and its viewers.

Digital broadcasting: Global Status

The use of digital technology to change the ways that content is produced, presented, transmitted, and received is new and popular in the broadcasting industry (Rees, 2018; Stigbrand & Nygren, 2018; Jaakola, Hellman, Koljonen & Valiverronen, 2019). This backs up the International Telecommunication Union's (ITU) suggestion that broadcasting worldwide switch from analog to digital by June 17, 2020 (Okore, 2017). According to Akinreti, Ojo, Odegbenle, Owolabi, Tsebee Asor, and Goke (2019), the ITU's clear call for the shift to digital broadcasting is based on the following goals: expanding the reach of digital television transmission, guaranteeing bandwidth for wireless broadcasting services, improving sound and visual quality, especially for HDTV, opening up additional channels, and providing unrestricted access to digital radio transmission. The ITU's project of digitising broadcast media globally is to revamp and proffer solutions to the lapses of analogue broadcasting which

include defects in sound and picture quality, limited channels and no internet access.

The switch from analog to digital broadcasting transmission is known as the "transition to digital broadcasting" in the United States of America. The Telecommunications Act of 1996, signed by Congress in the United States, originally established the date for the switch to digital transmission at December 31, 2006. However, the transition was postponed three times, first to December 31, 2008, then to February 17, 2009, and on June 12, 2009 (Rees, 2018). Millions of homes who had been unable to obtain their converter vouchers were given the opportunity to do so thanks to the extension. The DTV Delay Act, which was signed into law on February 4th by then-President Barack Obama, supported this action. The Act changed the mandatory analogue cut-off date to June 12, 2009. However, analogue broadcasting did not cease entirely, as about 120 full-power stations were permitted to continue analogue broadcasts for several more years

Faraz (2021) reports that on July 15, a further extension was offered to allow broadcast translator (TX) and low-powered (LP) Class-A low-powered repeaters in remote villages to shut down by September 1, 2015. Ultimately, the transition was finished by January 10, 2022, after the FCC ordered all analog low-power stations and transmitters to convert by July 13, 2021, in 2017.

Analog terrestrial television was replaced by digital terrestrial television in the UK, a process known as the "digital switchover." "Analogue switch off" is another name for it. Kombol (2018) states that the transition to digital broadcasting began on October 17, 2007, and was finished on October 24, 2012. Analogue broadcasts from each group of transmitters in each TV region were turned off at specific times during those dates. An independent organization called Digital UK (now Everyone TV) oversaw the process. The Switchover took place in stages as outlined in the switchover guide:

- Stage 1- Known as DOS1- Analogue BBC 2 and low power digital Multiplex 1 switched off.
- High power Multiplex 1 switched off.
- Stage 2- Known as DSO2- All remaining analogue channels and low power digital multiplexes switched off and remaining high power digital multiplexes switched on (Paulussen and Ugille (2018)).

In Asia, Japan started the shift to digital television in 2008 and carried on until the beginning of 2012. Television stations from all five main commercial networks, as well as all network broadcast transmitters, participated in the actual switchover, which occurred between July 2011 and March 2012. The first nation in eastern Asia to stop using analog television broadcasts was Japan. According to Lazada and Wong (2022), the shift in Japan was gradual because of small issues like the expensive price of ISDB-T converter boxes and tuners. However, the Ministry of Internal Affairs and Communications stepped in and gave away tuners to all low-income families at no cost. The following are the stages:

- July 2008–early 2009
- Early 2009–early 2010
- Early 2010–late 2010
- Late 2010–2011

- Early 2012-2015

This Means that Transition in Japan was Complete in 2015.

Africa's broadcast sector continues to struggle to provide distinctive features and programming that would cater to the African population's quirks. When digital broadcasting technology was still in its infancy, researchers and skeptics disagreed over how the technology might be used in the future. Today, that future is here. According to Eze, Orekyeh, and Ezeanwu (2017), the introduction of digital broadcasting to the African continent was seen as a positive step for the broadcast sector. Therefore, African nations are dedicated to making sure the transition from analog to digital broadcasting is successful, in keeping with the worldwide trend (Meredith, 2020). Like other nations that signed the digital migration deal, Nigeria pledged to digitize her entire broadcast sector by the June 2020 timeframe set by the International Telecommunication Union. According to Rauf and Nancy (2017), Nigeria's digitization effort started in Abuja on June 3, 2008, after a summit of broadcast industry stakeholders emphasized the importance of Nigeria adopting the new technology. According to reports, Nigeria had scheduled the date of the transition from the existing broadcasting mode to the netra-modern digital terrestrial broadcasting on June 17, 2010. The date was three years before the June 17, 2015 deadline for the entire world, set by the International Telecommunication Union (ITU) after its congress in Geneva, Switzerland in 2006.

With the approval of late President Umaru Musa Yar'Adua, Nigeria formally began digitizing its broadcast industry in December 2007, instructing the National Broadcasting Commission (NBC), the industry's regulator, to initiate and pilot the program in the lead-up to the goal date (NBC, 2020). According to Suarez (2020), this massive advancement in mass media is intended to make space for mobile versions of radio and television stations. This will eliminate the frequent signal losses that occur on the analog spectrum and enable mobile device users to maintain connectivity to their stations while in travel. Digital broadcasting presents more chances for the mass media, but from a limited perspective in Northern Nigeria, Ebimini (2018) observes that "it is like a heavy saddle on a horse that is thriving." There has been a decline in Northern Nigerian media's ability to adopt new technologies over time, therefore some people view the introduction of digital broadcasting as a hardship for both media operators and journalists.

The awareness, perception, and readiness of journalists in some federation states (Kaduna, Jos, Kano, Delta, Ogun, Edo, Enugu, Rivers, and Akwa-Ibom) to transition to digital broadcasting have been the subject of scholarly study. According to Okon & Eleba (2017), these studies have demonstrated that journalists are cognizant of the trend and have shown a strong desire to embrace the digital revolution in broadcasting. However, if the new digital technologies are available to improve efficiency in news collection, editing, dissemination, and transmission, digital broadcasting would be beneficial for the majority of journalists (Alailibo, 2018; Odunlami, 2019). According to Adamu (2017), who looked at journalists' understanding of the digital migration process in Kaduna state, there is a noticeable degree of awareness regarding the digitization of

broadcasting, and they are optimistic that it will result in a more favorable and impressive viewership than analogue broadcasting.

Awareness

According to Eze, Orekyeh, and Ezenanwu, awareness is the ability to recognize, understand, or perceive a situation or fact. Concern or interest in a specific subject, circumstance, or development is known as awareness. According to Rogers (1986), awareness is the capacity to know or comprehend something or someone better. Ebimini (2018) defines awareness as the capacity to see, feel, or be cognizant of what is happening. It is, in a broader sense, the state or attribute of being conscious of something.

The concept of awareness in philosophy and psychology refers to the ability to perceive, know, and be cognizant of occurrences. According to another definition, it is a condition in which a subject is aware of knowledge that might directly influence the course of a variety of behavioral activities. According to Alordiah and Osagiede (2019), awareness can be divided into three categories:

- *Self-Awareness* - Self-awareness is the most known type of awareness. It is conscious knowledge of one's self, feelings or character and having a better understanding of the way one feels or why one acts in a particular way.
- *Social Awareness* -Social awareness is the ability to understand others, the relationships one has with them and the relationships they have with each other. Social awareness helps us peek into other people's perspectives and recognise the inherent strengths in others, then tap on those strengths to maximise our potentials.
- *Organisational Awareness* - This is the ability to appreciate and use formal and informal roles and structures in an organisation.

According to Omumu and Oji (2020), awareness improves our ability to make decisions and boosts our confidence when certain elements are implemented, enabling us to encourage others to make positive changes.

Perception

The term perception describes how our brain uses our senses to consciously accept, choose, and interpret information. Gibson (2021). Different people's perceptions of the same message are determined by perception. A person's viewpoint on the environment and objects in his immediate vicinity is the first stage in creating a perception. We can gain a better understanding of how perception affects things or circumstances by knowing how people attempt to make sense of their judgments (Berelson and Steiner, 2019). They posit that two areas similar to selective perception are selective exposure (awareness) and selective retention. Individuals respond to messages they wish to act upon and select messages they wish to hear. The success of initiatives to alter attitudes through informational campaigns is greatly influenced by selective retention. Therefore, how journalists interpret media messages on digital broadcasting is crucial to the technology's uptake and application. As a result, how journalists react to digital broadcasting depends on how they interpret the information they are given about the trend.

Journalists and Digital Broadcasting in Nigeria

Broadcast journalists are anticipated to play important roles in Nigeria's transition from analog to digital broadcasting. Because the digital transition has created a vast array of opportunities for broadcasting and given journalists access to a vast array of television broadcast spectrum in the nation, it will influence the thoughts, emotions, and actions of broadcast journalists. However, there are differences in how journalists around the world, and particularly in Nigeria, view digital broadcasting, and these differences have an impact on broadcasting.

Awareness of Digital Broadcasting

Because of its remarkable advantages, which include information gathering, processing, storing, retrieving, and transmitting, among other things, the digitization of broadcasting is regarded as one of the most important developments in the broadcasting industry and for journalists in particular. It will undoubtedly transform the broadcasting sector as a whole (Falana & Lawal, 2017).

According to Idachaba (2018), this transition is necessary to ensure that the nation can stay competitive and fulfill the needs of the modern world because of the dynamic nature of technology and the fact that the partially used analog system cannot support future improvements in the industry. However, in order for this shift to take place, the broadcast journalists who are directly involved in the process must be informed of the trend in order to fit in.

Studies have shown that journalists in Kaduna state are aware of and eager to embrace the digital revolution in broadcasting, according to Olagoke (2015). If the new digital technologies are available to improve the efficiency of news production and transmission, digital broadcasting would be beneficial for the majority of them. As a result, training and publicity are required (Nwanne, 2016).

Perception of Digital Broadcasting

According to Arce-Urriza and Cebollade (2019), perception is the process of modifying information to raise awareness of it and potentially bring about change. The way that journalists view digital broadcasting is crucial because it will influence how they embrace or use the technology that will help them perform better. According to Okorie (2010), journalists' enthusiasm in the shift has grown as they realize that the exercise will help them by simplifying their laborious methods of operation. Journalists are excited about the shift, but they also recognize some difficulties that come with such advances as Nigeria strives to completely transition from analog to digital television.

Adoption of Digital Broadcasting in Nigeria

According to Eze, Orekyeh, and Ezeanwu (2017), the introduction of digital broadcasting to the African continent was seen as a positive step for the broadcast sector. While most wealthy nations have since forgotten about the transition, developing nations continue to struggle with the migration's premise. Nigeria and other poor nations have historically lagged behind in adopting new technical advancements, particularly when such breakthroughs include a financial component. According to Obalanlege (2019), technology is the primary force behind social change; but, until it is embraced and put to use, technology is just that—technology. According to Talabi (2017), Nigeria's shift from analog to

digital broadcasting started in December 2007 after Umaru Musa Yar'adua, the country's president at the time, approved and instructed NBC to start the process with a 2012 deadline. The show started in June 2008 (NBC, 2020). According to Nwaozor (2021), digital migration entails setting up digital broadcasting devices including transmitters, set-top boxes, and transmission towers so that viewers can receive digital signals on their TVs.

According to Leke (2020), in order to guarantee high-quality transmission and reception across the regions they serve, regulatory bodies were forced to leave space between channels and only allot a small portion of the available spectrums due to the discovery that adjacent analogue transmission signals were susceptible to interference. Nigeria, a party to the ITU's Treaty for "an equitable and people-centered information society" (Akinreti et al., 2017), has yet to fulfill four of its deadlines, which were June 17, 2012, December 31, 2012, January 1, 2015, and June 2017. Nigeria is implementing the digital transition in stages. Jos, Plateau state, began the pilot phase in 2016. Kwara, Kaduna, Enugu, and Osun followed on December 20, 2017, and Lagos, in 2018. Thirteen other states, including Kano, Rivers, Yobe, Gombe, Imo, Akwa Ibom, Oyo, Jigawa, Ebonyi, Katsina, Anambra, and Delta, followed closely behind (Nwaozor, 2021). Nigeria is still dedicated to the migration process, despite the slow and incomplete pace.

Benefits of Digital Broadcasting

The process of converting information into a digital binary language for computer use, whether it be via speech, text, sound, or image, is known as digital broadcasting (Okorie, 2018). This lowers the possibility of distortion and enables the conversion of data from several sources through a single channel. Due to increased customer choice and opportunities for interactive systems, digitization significantly increases the capacity of communication channels (Kombol, 2019). Additionally, the quality of audio and video transmission is much improved by digitization, and economic efficiency is increased as a result of time and labor savings from switching to digital storage, editing, and retrieval methods.

For instance, digitally compressed images can be sent as a computer file at 56,000 bits per second across satellites to produce high-quality video. Until it is played back at its original speed, this digital data can be held on a disc system. News gathering can benefit greatly from the new technology because digital compression and storage systems are lightweight. Because digital video signals are smaller, more data can be stored and transmitted across phone cables (Baran, 2010).

Cable services can also offer a regular phone connection and quick internet access. Through their TVs, viewers can also provide comments when using online services. The analogue TV made this impossible. Its adaptability guarantees that viewers will utilize the returning path, and it can accommodate hundreds of channels. Although a two-way path could be supplied by satellites, most of the time just one-way service is offered. Televisions with antennas receive signals transmitted in this manner. This service does not have a return path. It is hence a one-way relationship. To send television signals to viewers' homes, telephone service bandwidth is expanded. As a result, more frequencies will be available for television stations in the country and will afford the industry

opportunities for interactive broadcasting as television sets will do much more than receive signals (Suarez, 2019).

While digital broadcasting uses the same 6MHL spectrum to deliver far higher quality sound and clearer images, it also frees up room for other vital services like emergency broadcasts, etc. Digital television allows several channels to be broadcast simultaneously and uses less bandwidth per program (Akinreti, Ojo, Odegbenle, Owolabi, Tsebee Asor, Goke, Jegede, and Nwaolikpe, 2020).

Digital broadcasting, according to Aluechia (2019), guarantees that the bandwidths are available for wireless broadcasting services, improves sound and visual quality, especially for HDTV, allows for more channels (more content), and provides unrestricted access to digital radio transmission. Digital television signals are less likely to be distorted, and viewers will have access to a wide variety of channels, according to studies by Oyedokun and Oladesu (2019). They go on to say that the advantages of digitization include quick feedback, digital access to information, online theaters, and the removal of time and distance restrictions.

Challenges of Digital Broadcasting

According to Innocent (2020), digitalization is the current trend in broadcasting in Nigeria and around the world. This innovation will alter the reach of broadcasting in Nigeria and beyond and address a number of issues that the analog system had. Nonetheless, there are some elements that can make the procedure difficult and require some time to overcome.

1. *Slow Pace of Adaptation* - Traditionally, developing countries like Nigeria are often laggards when it comes to adopting new technological innovations. This is why, though the country approved the commencement of the digitisation process in relatively good time, 2008, in order to beat the ITU deadline of 2015 for the entire world, it however failed three times to achieve it (Onuh, 2019 & Asemah, 2017).
2. *Suspicion of Change* - This happens to be a general human problem worldwide. People are usually averse to change due to the fear of the unknown, and would rather prefer to remain in the familiar territory they are used to. Though journalists and the government in the country are aware of and perceive the benefits of digital broadcasting, fear of the unknown has caused them to drag their feet concerning the transition (Abioye, 2018).
3. Digital broadcasting requires huge investments in equipment and gadgets but they are very expensive and broadcasters need them for transmission and production (Baran & Davis, 2017).
4. *There is the Challenge of Power Supply*- Innocent, (2020) notes that the country has an unstable power sector that is not encouraging. The government has spent huge sums of money to revive the power sector but to no avail. Thus, Innocent, (2012) opines that the epileptic power supply in the country and the inevitable dependence on generators poses a big challenge for the digitisation process.
5. *Manpower/Journalists* - As complex and fragile equipment is coming in, there is the need for matching manpower with equipment and processes, as the

available manpower is not qualified to operate the equipment (Ashong & Nwanyanwu, 2019).

6. Due to the automation of broadcast services, job opportunities are limited as one machine can perform the tasks of numerous personnel at once and with ease. In addition, Joseph, (2017) observes that the digitisation will bring a lot of changes, and a good number of existing broadcast journalists may not be able to adjust to the new system, as such some of them may be adversely affected and thrown out. This will result in the burden of unemployment.
 7. *Inadequate Sensitisation of the Programme* - Wale, (2020) investigated and discovered that the little that journalists know about the digital technology is from the social media, not from formal sources like government sensitisation/enlightenment programmes, such as workshops, seminars or paid advertisements, posters, flyers, billboards etc. This has hampered effective awareness and perception of the innovation and thus, the migration.
 8. *Content Creation* - Aleuchia, (2019) is of the view that for any station to successfully and fully adopt the digital broadcasting standards, there must be constant ability to produce contents that are in digital formats or easily digitalised. This requires funds and digital equipment to produce and are insufficient, as such pose a challenge.
- *Satellite*: In most cases, satellite provides one digital transmission service

Solutions

Scholars like Innocent, (2020), Ashong & Nwanyanwu, (2022) studied the challenges of migration process in Nigeria and came to the conclusion that:

- a) Massive sensitisation by government, policy makers, stakeholders and officials, as this will contribute positively to awareness, perception and adoption of the technology by journalists and reduce incomprehensibility.
- b) Governments, proprietors of broadcast organisations and all stakeholders should as a matter of urgency, procure the necessary digital equipment to ensure smooth switch over from analogue to digital broadcasting.
- c) Governments should spare no expenses at tackling the epileptic power supply in the country to ensure adequate and constant supply of electricity and uninterrupted transmission or damage to the equipment.
- d) Proprietors should provide adequate training for journalists so that they can operate the equipment to source for, edit and transmit their news and programmes.
- e) Adequate resources should be made available for the journalists to enable them create quality content for broadcast.
- f) Governments should promulgate laws that will enhance affordability of the gadgets by broadcast stations and fast-paced adoption of the process and transmission.

Theoretical Framework

The Diffusion of Innovation Theory and the Technology Acceptance Model (TAM) serve as the foundation for this study. This is because the researcher thinks that these theories concentrate on the topic of perception and awareness. Model of Technology Acceptance (TAM). In 1986, Fred Davis introduced the TAM theory. The primary goal of TAM, according to Davis,

Bagozzi, and Warshaw (2019), is to model users' acceptance of information systems or technologies and the connection between technology awareness, acceptance, and perceived utility.

According to this theory, a person's usage of technology is determined by how easily they believe it to be accepted and how helpful they believe it to be for completing tasks. According to Venkatesh and Davis (2018), perceived usefulness measures how much a person thinks utilizing a certain technology will improve his or her performance at work, whereas perceived ease of use measures how much a person thinks utilizing a specific technology would require little effort. Together with system design affordances, these views or beliefs are thought to be motivators of users' intentions and actual use behavior.

Criticisms of Technological Acceptance Model

Averweg (2019) and Venkatesh and Davis (2018) disagree with Davis' (1986) initial suggestion and came to the conclusion that perceived utility is unaffected by perceived ease of use. Instead of addressing the use of technology in business, academia, corporate/organizational contexts, or institutional applications that necessitate information technology integration, they emphasized that the TAM model was better suited for individual technology usage and adoption.

Diffusion of Innovation Theory

Everett Rogers and Shoemaker introduced the Diffusion of Innovation hypothesis in 1973, and Rogers expanded on it in 1986. According to this theory, a new idea or invention needs to go through several stages in order to spread, including awareness, interest, evaluation/perception, trial, and adoption. They also emphasize that different sorts of adoption units are needed for different kinds of breakthroughs. In plain language, Katz (2020) emphasizes that innovation and dissemination entail awareness, conscious exposure to the adoption and performance of novel concepts, practices, or objects, and the adopters' sharing of them with others. According to Rogers, potential adopters go through five steps in the process of embracing an innovation:

- Awareness of the innovation.
- Interest in and perception of it.
- Trying it out.
- Deciding to accept or reject it.
- Adoption or adapting the innovation to one's daily life or to the media operations.

Rogers also divides adopters into five groups: pioneers (early adopters), early majority, late majority, laggards, and ground breakers (innovators) (Lopez, 2015). The late majority is skeptical of the procedure, but the innovators want to be the first to try digital broadcasting. Those who are content with the conventional approach are the last group, known as laggards. These are what people think an innovation – in this example, digital broadcasting – should have.

Criticisms of Diffusion of Innovation Theory

The diffusion of innovation idea has been criticized, as have many other theories. According to some experts, because social networks and people are complex, it is challenging to quantify dissemination. Measuring the precise factors that lead to an innovation's acceptance is very challenging, if not

impossible (Damanpour, 1996). Like any innovation, digital broadcasting is mostly dependent on journalists, and in order for it to be viable, both media agencies and journalists must embrace it extensively (Gruenbaum, 2018).

METHODOLOGY

The questionnaire served as the primary data collection tool in the researcher's adoption of the qualitative survey design approach. The 26 broadcast stations located throughout Kaduna State make up the study's population. Three stations, representing state, federal, and private media organizations in the state, were purposefully chosen for analysis out of the 26 stations: Liberty Radio (91.7FM, 103FM) & Television (SES 5-4.80), Federal Radio Corporation of Nigeria (FRCNK) 506 MW, and Kaduna State Media Corporation (KSMC) transmitting on 90.9 MW. There are 220 employees at KSMC (Sama'ila, 2023), 1,074 at FRCNK (Auwalu, 2013), and 95 at Liberty Radio and Television (Ahmed, 2023). The census method was used to analyse the whole journalists from the three selected stations, numbering 122 i.e. 42 journalists from KSMC newsroom, 60 from FRCNK and 20 from Liberty Radio and Television, respectively.

RESULT AND DISCUSSION

All journalists employed by the three media organizations that were chosen were given the questionnaire. Tables and basic percentages were used to analyze the data gathered from the questionnaire. A 98% return rate was achieved since 120 of the 122 copies of the questionnaire that were distributed were recovered and used for analysis.

Table 1. Broadcast Journalists' Awareness of Digital Broadcasting

Variable	Frequency	Percentage (%)
Yes	97	80.8
No	23	19.1
Total	97	100

Source: Field Work, 2023

Table 1, shows that 97 of the respondents representing 80.8% are aware of digital broadcasting and form the majority, while those who not aware are 19.20%. This shows that majority of the respondents are aware of digital broadcasting.

Table 2. Journalists Perception of Digital Broadcasting as a Welcome Development to the Broadcast Industry

Variable	Frequency	Percentage (%)
Yes	97	100
No	-	-
Total	97	100

Source: Field Work, 2023

The analysis on table 2, indicates that the whole respondents (97) or 100% say digital broadcasting is a welcome development to the broadcast industry.

Table 3. Broadcast Journalists’ Perception on Encouraging the Adoption of Digital Broadcasting

Variable	Frequency	Percentage (%)
Yes	97	100
Total	97	100

Source: Field Work, 2023.

The analysis on table 3, shows that all 97 the respondents, representing 100% of the respondents encourage the adoption of digital broadcasting.

Table 4. Broadcast Journalists Perception of the Benefits of Digital Broadcasting

Variable	Frequency	Percentage (%)
Makes work faster	30	30.9
Gives better picture and sound quality	60	61.8
Enables dissemination on the internet	18	18.5
Helps in making online replicas of their contents	12	12.3
Total	97	100

Source: Field Work, 2023

All the 97 respondents agree that digital broadcasting has enormous benefits for the journalists and transmission generally. However, they have different perspectives of the benefits. While 30 respondents representing 30.9% say it makes work faster, 60, representing 61.8% say it gives better pictures and sound quality. 18 respondents, representing 18.5% indicate that it enables dissemination on the internet and real time broadcasting, and 12 respondents, representing 12.3% are of the view that it helps in making online replicas of their content.

Table 5. Broadcast Journalists’ Perceived Challenges of Digital Broadcasting

Variable	Frequency	Percentage (%)
Yes	97	100
Total	97	100

Source: Field Work, 2023

Table 5, indicates that all the 97 respondents agree that there are challenges hampering digital broadcasting.

Challenges

1. Slow pace of adoption of digital broadcasting, resulting from suspicion of change and the fear of the unknown.
2. The high cost of digital equipment, installation and the conversion of the analogue ones to digital type.
3. Epileptic power supply and constant outages can cause damage to the equipment.
4. Lack of adequate publicity and sensitisation in respect to the migration and the potentials of the digital system of broadcasting.
5. Lack of trained journalists on digitisation and anticipated changes.

Table 6. Broadcast Journalists’ Perceived Responses to Challenges of Digital Broadcasting

Variable	Frequency	Percentage (%)
Yes	97	100
Government and stakeholders should hasten the pace of adoption to keep abreast of the global trend.		
Procure the relevant equipment for the migration to digital broadcasting.		
Government should tackle the problem of power supply with the urgency it deserves.		
Stakeholders should ensure that journalists are trained and retrained on how digitisation works and the anticipated changes.		
Total	97	100

Source: Field Work, 2023

Table 6, shows the responses of all interviewees (97) to the challenges of digital broadcasting. They are unanimous in agreeing that the challenges can be surmounted and a smooth transition possible.

Discussion of Findings

This study aimed to address four main goals: assessing journalists' awareness of digital broadcasting, figuring out whether they view digital broadcasting as a positive development for the broadcast industry, identifying the difficulties journalists encounter with digital broadcasting, and analyzing how journalists in Kaduna State perceive solutions to these difficulties. According to the results for objective one, 80.8% of journalists are aware of the recent shift from analog to digital broadcasting and believe that it would result in higher-definition and more lucid transmissions. As a result, they have a favorable attitude toward it. This indicates that digital broadcasting is known to the majority of responders. This is in line with Idachaba's (2018) assertion that

the country must adapt to meet the demands of the modern world and stay competitive due to the dynamic nature of technology and the possibility that the partially utilized analog system won't be able to support future advancements in the sector. However, for this change to occur, the broadcast journalists who are the direct participants in the process have to be aware of the trend in order to fit into the scheme of things.

Regarding objective two, the respondents state that they are completely satisfied with the new technology and see digital broadcasting as a positive development for the broadcast sector that will enhance Nigerian broadcast media. They claim that digital broadcasting speeds up work, improves picture and sound quality, permits online distribution, aids in creating online copies of their content, and transmits news and reports in real time. This supports the assertion made by Eze, Orekyeh, and Ezeanwu (2017) that the introduction of digital broadcasting to Nigeria and the African continent is a positive step for the broadcast sector and will enhance transmission clarity.

The results of objective two show that digital broadcasting has many advantages. Because of this, they support the introduction of digital broadcasting, as seen by the study, which shows that 97 respondents, or 100% of the sample, support the adoption. Umar (2019) confirms that as radio and television signals can be sent more easily and with higher quality using a digital spectrum, digital broadcasting presents more chances for the mass media.

Finding the issues with the broadcast industry's digitization was the third goal of the study. Respondents acknowledged that the new trend was admirable, but they also pointed out issues that would prevent its widespread acceptance. This is supported by the analysis, which reveals that every respondent—100% of them—says the new digital transmission method has problems. The main obstacles to the adoption of digital broadcasting in Kaduna state are the cost of the new equipment and the conversion of the old ones to digital type, the unstable power supply, the lack of sufficient publicity regarding the migration, and the sluggish pace of technological adaptation. Furthermore, the respondents contend that historically underdeveloped nations like Nigeria frequently lag behind in adopting new technology advancements, particularly when such advancements have a financial component. To support this argument, Ebimini (2018) used the media in Northern Nigeria as an example, which has shown a decline in its ability to adjust to new developments in media technology over time.

The fourth objective focused on how broadcast journalists assessed their reactions to the difficulties posed by digital broadcasting. The respondents concur that governments and media organizations must devise strategies to address the obstacles to successful migration because of the significant advantages of digitalization. Omale, Ekhaerafo, and Essien (2018) concur with this viewpoint, pointing out that the broadcast media were primarily propaganda organizations that lacked the manpower and technological resources to enhance the caliber of their programming. They were also unable to keep up with new production trends and technological advancements, which is why the relevant authorities had to take action.

CONCLUSIONS AND RECOMMENDATIONS

Because of its many advantages, this study has been able to investigate what awareness and perception are and how they have helped journalists in Kaduna State embrace the shift from analog to digital broadcasting. In contrast to other nations, the study was able to confirm that the transition process has, in fact, been gradual and only partially completed. More theoretically speaking, knowledge and perceived utility are essential for promoting adoption and accepting technology that is thought to be advantageous to its consumers.

The current situation, where some regions of the world are far ahead of others in terms of technology use, is blatantly detrimental to both societal advancement and global progress. In order to bring developing nations, and Kaduna state in particular, up to speed with the rest of the world, it is imperative that all hands be on deck to remove any obstacles that stand in the way of a seamless and complete transition to digital broadcasting.

FURTHER STUDY

Digital broadcasting is a global trend that has not only improved the quality of broadcasting but has also brought inhabitants of the world closely-linked together through wires and signals. However, since some countries are laggards in this adoption process, especially Nigeria and Kaduna state, it becomes necessary to infer that curative strategies are needed to curtail the constraints and maximise the potentials of migrating to digital broadcasting:

First, the Federal Government, government agencies, as well as investors should assist broadcast media stations by subsidising the costs of procuring digital equipment, such as multiplexers, digital encoders, transmitters, digital decoders, digital teleprompters and digital cameras. This will, to a large extent, motivate broadcast journalists and empower broadcast station owners for a swift and seamless transition to digital transmission.

Secondly, government and proprietors should organise practical/professional trainings at home and abroad, as well as sensitisation and reorientation programmes for broadcast journalists through advertisements, jingles, flyers, billboards etc. on handling digital technologies/equipment not only in Kaduna State but across Nigeria. The exposure of broadcasters to digital broadcasting will aid the mastery of the principles and applications of the technologies, as it is often said that practice makes perfect.

Thirdly, government needs to pass a legislation directing the education ministries to make digital broadcasting a core part of schools' curriculum. This will equip the incoming generations of broadcasters with adequate knowledge of the present trend in the industry and prepare them for the future challenges in the field. Obsolete parts of the analogue system of broadcasting should be expunged from schools' curriculum and replaced with the new digital ones.

Fourthly, journalists should always produce quality contents that will appeal to the audience as well as attract sponsors and adverts. Most importantly, the availability of contents is required to fill the multiple channels that digitisation offers.

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