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Broadcasting in the Era of Digital Technologies: A Perceptual Assessment of Imo State Based Journalists

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ABSTRACT

This study examines how digital technologies influence broadcasting practices among journalists in Imo State, Nigeria. Using a census-based survey (N=200), findings show that digital technologies significantly enhance news gathering, production speed, and dissemination efficiency (Mean=3.5). However, inadequate ICT training and poor infrastructure remain constraints. The study concludes that digital convergence has reshaped broadcast workflows, requiring sustained capacity building and policy support. The key contribution of this study was that it gave insights on how journalists perceive Digital Technologies in modern day broadcasting as well as how it is has influence the practice of broadcasting in the era of digital technologies especially in Imo State.

1. Introduction

Digital technology is fundamentally reshaping broadcasting around the world (Pavlik, 2015). Emwinromwankhoe (2020) argues that the broadcasting sphere in Nigeria and indeed the world over, has never been static. It has continued to evolve, and much more with the stupendous advancement that keeps pervading the global technological sector (Vukanovic, 2016). When Marshall McLuhan, the renowned media scholar, conceived the idea of a "global village" decades ago, little did he know that his prediction would materialize sooner than he had thought. Today, there is no facet of human life that has not been affected by digital technologies, comprising the Internet and other paraphernalia of information and communication technologies (Adigwe, 2012; Ja'afaru, 2018; Turow, 2019). ICTs such as the Internet, mobile phones, satellite technology, cable technology, computers, to name just a few, have reduced the barriers to information dissemination whilst simultaneously facilitating the communication process (Adigwe, 2012; Eludu et al., 2016; Jamal et al., 2024; Shalender et al., 2023). Owe et al. (2023) aver that "digital technologies application in journalism practice has influenced journalism by improving the professional process of news gathering, production and dissemination."

According to Ali et al. (2021), technological advancements have affected every facet of human existence. There are no exceptions when it comes to news gathering or journalistic procedures. Through various advancements in digital, audio, and visual media, technology has been supporting media. Lasorsa et al. (2012) concur, arguing that these changes have completely changed how journalists think and act. In a similar vein, the advent of sophisticated media technology has made it possible to produce, alter, and distribute media content using comparatively low-tech methods. As a result, the entire journalism profession has undergone a well-thought-out transformation (Gambarato & Alzamora, 2018). Emwinromwankhoe & Ekhareafo (2021) aver that, in the field of broadcasting, digital technologies have tremendously affected the whole gamut of activities. The influence of ICTs cuts across the sourcing of broadcast information to the dissemination of such information (Adigwe, 2012; Eludu et al., 2016; Ja'afaru, 2018). Aside from the areas of immediacy and timeliness of newsgathering, ICTs have enhanced information dissemination as there are more platforms via which broadcast stations now relay their messages to diverse and heterogeneous audiences (Agboola, 2014). Moreover, there has been an enormous improvement in the quality of news and other programmes relayed by broadcast stations across the globe (Adigwe, 2012; Loveth et al., 2022).

Also, digital technologies have shortened, to a very great and considerable extent, the time and distance between the broadcast reporter and the news source, as well as the time and distance between the news source and the broadcast reporter (Adigwe, 2012; Ja'afaru, 2018; Turow, 2019). According to Emwinromwankhoe & Ekhareafo (2021), in recent times, broadcast reporters with mobile phones can easily put calls across in order to get information from news sources, confirm received information, or get clarification about certain grey areas. More intriguingly, a more advanced kind of media has emerged as a result of the digitalization and growth of technology. It has transformed the processes of information generation and consumption and strengthened journalism. The speed at which an incident occurs and is communicated to the public has significantly decreased in the digitalized form of journalistic processes (Raza & Parvez, 2019).

Broadcast messages were distributed to the public, which at the time was large, dispersed, and diverse, exclusively via radio and television in Nigeria decades ago (Emwinromwankhoe, 2020). However, given the gains of technological convergence, the audience of broadcast messages have certainly not been left out of the chain of transformations that digital technologies have triggered in the broadcast sector (Kalamar, 2016; Olowofela & Peter, 2018). Corollary to their access to and use of ICTs, broadcast audiences have moved from the world of passivity to that of activity, and from the world of massification to that of fragmentation (Kalamar, 2016; Kipkirui, 2016). Besides, ICTs have gone a long way in strengthening the interactivity between the audience and broadcast messages. As well as enhanced their ability to send instant feedbacks to broadcast stations (Emwinromwankhoe & Ekhareafo, 2021) .

The broadcast audience has also been greatly impacted by convergence since it has made it possible for them to receive audio and video messages without physically being near the box (a radio or television set) (Olowofela & Peter, 2018). They can obtain broadcast contents through a variety of channels, which explains this. They can either watch the show live online or through the radio app on their devices. They can either view it on YouTube or go to the broadcast station's website and download it as a podcast. The viewers might even choose to save the broadcast material for subsequent viewing or listening. In summary, convergence has enabled the broadcast audience to concurrently create and consume broadcast content (Chukwuma, 2024; Ritonga et al., 2024). Buttressing further, Emwinromwankhoe (2020) opines that, not only are broadcast audiences now kings in the broadcasting business, they have become degasified and fragmented.

In the words of Anorue & Onyike (2021), The days of broadcasting exclusively using analogue equipment are long gone. Due to technological advancements, there is a growing need for high-quality broadcasting. Audiences today are loyal to broadcast stations that value aesthetics and technology in order to produce exceptional work. ICT is used by broadcast media professionals in their reporting responsibilities to accomplish this.

Owing to the tremendous developments that ICTs have continuously triggered in the field of broadcasting, the attention of media scholars and practitioners have invariably been drawn to the influence of ICTs on broadcast operations (Emwinromwankhoe, 2020; Park et al., 2023). However, despite extensive studies on digital broadcasting in Nigeria, few have examined how journalists in Imo State perceive and engage with digital technologies within newsroom workflows. This study addresses this gap. Also, Jamil (2020) identified a lack of economic resources to create digital news rooms, a lack of journalists' education and training to practice digital journalism, news organizations' ignorance to invest in the digital news rooms, poor ICT infrastructure and a lack of digital-savvy journalists as the key challenges that impinge on the journalists' use of digital technology. This is the gamut against which this study is being carried out to assess the perception of Imo State based journalists on broadcasting in the era of digital technologies.

The main objective of the study is a perceptual assessment of Imo State based journalists on broadcasting in the era of digital technologies. Other objectives are to: Determine the extent of ICT usage during news gathering and production among journalists in Imo State. Find out the perception of Imo State journalists towards broadcasting in the era of digital technologies. Ascertain the influence of digital technologies on news production among journalists in Imo State. Identify the challenges encountered by the broadcast journalists in Imo State in the era of digital technologies.

2. Theoretical Framework

This investigation was underpinned on the psychological theory of perception and technological determinism theory. Paul Lazarsfeld developed the psychological theory of perception. This theory initially while working for the Columbia School's Bureau of Applied Social Research (Thompson, 2017). According to Nelson and Quick (1997) in Unumeri (2009), perception or what other academics call social perception is "the process of interpreting information about another person." According to this concept, one's perspective on people is influenced by the quantity of information that is available and the degree to which that information may be accurately decoded. In the context of this study, even if journalists have the same information as others about a given circumstance, individual, or group, they (journalists) may still reach different conclusions because of individual variances in how well one interprets the information (Kim & Kim, 2022; Lewis, 2021).

According to Folarin (2002), "a complex of variables, including a psychological disposition, past experiences, cultural expectations, and social relationships, determine perception." This theory is apt for this study in that, its emphasis in on how journalists view or perceive broadcasting in the era of technological convergence following individual differences and technological competencies.

On the other hand,Thorstein Veblen (1857–1929), an American sociologist and economist, is credited with coining the phrase "technological determinism." The idea behind technological determinism is that a society's technology determines both its culture and its nature (Crothers, 2024; Emwinromwankhoe, 2020; Jumbo et al., 2023; Swedberg, 2020). According to Nwankpa (2021) and Ja'afaru (2018), the fundamental tenet of technological determinism theory is that technology forms, decides, and influences how members of a society think, believe, and act. In the

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context of this study, it means technology has a great role to play in the functions of journalists in respect to his job. In an attempt to clarify the theory, Ja'afaru (2018) states that: The theory posits that technology influences how journalists relate to, communicate, and engage with one another in a society in the course of doing their job. According to the argument, the media not only changes their surroundings but also the message they spread. How news is gathered is determined by technology. The communication's content is determined by the medium (Emwinromwankhoe, 2020).

Applying to this study, in a digital technological era the work of a journalist in society is shaped by technologies. The way messages are created, package, distribute, and use is greatly influenced by technology (Uğurlu, 2022). The theory is relevant to this paper because it would shed light on the changes brought about by convergence in Imo State's broadcast sector. Additionally, it would assist in navigating the problems, difficulties, and opportunities for convergence in Nigerian broadcasting practices.

An Overview of Digitization of Broadcasting

Since the development of colour television in the 1950s, the transition from digital to analogue broadcasting is notable because it represents the first major new science in the growth of broadcast technology, particularly in television broadcasting (Galvez et al., 2018). Because it will enhance broadcast signal transmission, the transition to a technologically driven mode of transmission is appropriate. The invention of digital technology in broadcasting is an effort to turn off all forms of conventional analogue broadcast transmission and replace them with a more sophisticated communication model (Youssef & El-Sayed, 2018). Digitisation is the process of converting any type of analogue information, texts, images, audio, etc. to digital form using appropriate electronic tools, like specialised computer chips or a scanner, so that the data can be processed, stored, and sent via digital circuits, devices, and networks. According to Rodman's description, the method of analogue broadcast transmission will be transformed by digital broadcast, together with digital complaint devices.

"A technological process through which data, graphics, sounds, and images are converted into a digital binary language (zeroes and ones) for computer use" is another definition of digitisation given by (Eze et al., 2017), who cite (Schultz, 2016). For the same reason, Youssef & El-Sayed (2018) believed that "digital terrestrial transmission, also known as digital television transition, is the cutting-edge technology that enables the broadcast industry to do away with the obsolete method of transmission such that broadcast transmission becomes digital compliant. "when a result, it is timely to urge the removal of outdated analogue equipment because it will become obsolete when broadcast firms connect to digitisation globally.

Broadcasting Practices Before and During the Era of Convergence

Broadcasting methods in Nigeria were marked by high standards, professionalism, expertise, and simultaneity decades ago (Emwinromwankhoe, 2020). While most broadcast practitioners required to be on the location of the event to compose and give lapidary reports, there were few sources from which they could obtain news and other items for transmission. To make sure that broadcast programming adhered to the standards and professional practices specified in the National Broadcasting Code, broadcast practitioners also had to work around the clock (Emwinromwankhoe, 2020).

At the time, broadcast professionals were highly qualified and had specialised fields. Just as broadcast reporters were distinct from broadcast presenters, so too were radio practitioners from

television practitioners. This is not to mention that broadcast messages were typically distributed to the audience at the same time. Oyero (2007) provides an impressive explanation of this point: The "one-to-many" communication model is used by the traditional mainstream media. To put it another way, a single source addresses a large number of individuals who make up a homogeneous mass audience. These media's messages are intended to appeal to and reach a large audience. The same advertising will be heard by all listeners of a certain radio station. In general, the public is not addressed as an individual by the (conventional) mass media, but rather as a mass audience (Oyero, 2007).

According to Obalanlege (2015), feedback was always delayed because broadcasting was unidirectional and one-way. Additionally, the analogue broadcasting method was utilised to distribute the content, and the technology required to capture, process, package, and distribute it was limited. Bulky cameras, microphones, VHS tapes, and other analogue equipment were used by many broadcast professionals. Broadcasting methods are changing dramatically and quickly as a result of convergence. Broadcast professionals can now obtain news from a wide variety of infinite sources, including the Internet, weblogs, citizen journalists, social networking sites, and even going to the event site. The fact that broadcast professionals now create reports for both traditional and new broadcast media means they no longer have areas of speciality. For example, a broadcast reporter for ITV/Radio would have to produce reports for the station's website, social media accounts, cable TV, and radio and television at the same time. Some academics Erdal (2007) call these broadcast journalists deskilled or multi-skilled (Akpeh & Ukwella, 2017).

Additionally, broadcast professionals can now record, process, package, and distribute broadcast information using a wide range of devices. They can choose to use heavy cameras and microphones or portable technology like tablets, smartphones, iPhones, and personal digital video recorders, to mention a few. Additionally, broadcast content can be edited and disseminated using these technical instruments. Additionally, a lot of stations worldwide, and in Nigeria specifically, use digital terrestrial broadcasting to spread information, therefore broadcasting has now gone digital. Since audio can be combined with text, pictures, video, and data, and vice versa, broadcast contents are also in multimedia formats (Emwinromwankhoe, 2020).

ICTs Influence on Broadcasting

Global media researchers have consistently maintained that ICTs are impacting broadcasting practices worldwide. For example, after carefully examining the Federal Radio Corporation of Nigeria's (FRCN) broadcasting environment, Showole et al. (2015) noted that "ICTs have brought significant improvement to the FRCN service delivery which is an important factor for growth and development in the society." In a similar vein, several academics Adigwe, 2012; Owe et al., 2023 have underlined how ICTs are presently influencing, changing, and reinventing the broadcasting industry in Nigeria.

In particular, the way that broadcast reporters obtain information has been impacted by ICTs in many aspects of broadcasting practice. (Eludu et al., 2016), (Showole et al., 2015), and (Ja'afaru, 2018) have observed that ICTs have accelerated the rate at which broadcast journalists get information for their work. The researchers point out that a broadcast journalist can quickly contact a news source to obtain or confirm information using ICT tools like smartphones and cell phones. Similarly, when broadcast journalists are miles away from their broadcast stations, these gadgets make it easy for them to record audio and video of breaking news events (Emwinromwankhoe, 2020; Pavlik, 2015). The likelihood that the station will be the first to report such information is increased by the aforementioned. Additionally, ICTs like smartphones, iPads, tablets, and email

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make it easier for reporters and editors to communicate in the newsroom and for mother stations and subsidiary stations to communicate with one another (Obalanlege, 2015). Additionally, digital cameras can be connected to robotic, remotely operated processes using ICTs, according to (Pavlik, 2015).

As a result, this eliminates the need for human camera operators, saving money, time, and improving operational effectiveness. Program production is another area where ICTs have affected broadcasting. According to (Pavlik, 2015), (Adigwe, 2012), and (Gapsiso & Wilson, 2014), ICTs have significantly changed the broadcast production and post-production processes. These days, news and other broadcast programs are produced using quicker, less expensive, and more efficient procedures. Since many of them have strong editing capabilities, smartphones, iPhones, iPads, and tablets, for example, can be utilised to speed up the editing process. Additionally, broadcast professionals may now create shows with more engaging visuals and crystal-clear audio thanks to digital video cameras and tiny microphones (Emwinromwankhoe, 2020).

ICTs have also had a significant impact on how broadcast programming is distributed. More distribution channels for broadcast stations worldwide have been made possible by ICTs (Chukwuma, 2024; Eludu et al., 2016; Gapsiso & Wilson, 2014). Broadcast content can now be distributed more cheaply and across an infinite number of channels. Broadcast stations not only use digital terrestrial transmission to disseminate content, but many also use cable TV, satellite TV, and live streaming over the Internet. ICTs have also had an impact on how broadcast programs are presented and shown.

Prior to the era of ICTs, there were distinct distinctions between the content that was disseminated by each traditional broadcast media (Emwinromwankhoe, 2020). The radio was primarily known for disseminating audio messages, while the television was known for disseminating audio-visual messages. However, in addition to transmitting a mix of audio and video through their websites, broadcast stations now also include images, charts, and write-ups content that was previously exclusively available in print media.

Lastly, the storage of broadcast programs has been affected by ICTs. Broadcast stations no longer save their shows on analogue media like VHS tapes, which are known to deteriorate over time. Instead, they store these programs on digital devices like personal digital video recorders, flash drives, and DVDs. Programs can also be saved online on platforms like Mega, Google Play Music, PCloud, and UC Web Storage, to mention a few (Emwinromwankhoe & Ekhareafo, 2021). As Pavlik (2015) correctly points out, compared to the days of analogue broadcasting, the storage of broadcast programs is now more affordable, quicker, improved, and dependable thanks to ICTs.

A recent study "Moving with the trend: The impact of digital technologies on journalism practice in Imo State, Nigeria" was conducted by (Owe et al., 2023). The findings demonstrated that the majority of respondents 66%, have access to and frequently use digital technologies in the performance of their jobs. With an average mean score of 3.6, the respondents have a favourable opinion of the use of digital technologies in journalism practice and consider them to be a boon to the field. At an average mean of 3.7, the results also showed that the respondents' challenges when using digital technologies to perform their reporting duties include digital/computer illiteracy, a lack of the necessary knowledge to operate digital technology gadgets, the high cost of acquiring digital technology gadgets by the media organisation, etc. The results also showed that the use of digital technology in journalistic practice has improved the professional process of news generation, dissemination, and gathering (average mean of 3.6).

As a supporting finding, Emwinromwankhoe & Ekhareafo (2021) study, "Influence of ICTs on the broadcast operations of three select broadcast stations in Edo State, Nigeria," found that ICTs

have had a significant impact on the stations' broadcast operations, particularly in the areas of information gathering, program production and editing, relay, display, and storage. The results also demonstrated that ICTs have a positive impact on broadcasting in the stations, and that some of the issues faced by the broadcast practitioners of the stations include a lack of thorough training, unstable power supplies, high ICT costs, inadequate supply, and poor Internet facilities.

In a research titled "Convergence and Broadcasting Practice in Nigeria: Issues, Challenges, and Prospects," Emwinromwankhoe (2020) looked at the problems, difficulties, and opportunities that convergence has brought to Nigerian broadcasting practices. In addition to highlighting that, despite the many problems and obstacles, convergence has a lot more in store, the article demonstrated that convergence has led to notable changes in broadcasting practices across. It came to the conclusion that convergence has arrived to stay and is changing Nigerian broadcasting practices.

Additionally, in a different study titled "Media convergence and broadcasting practice in Nigeria: Three broadcast stations in focus," Emwinromwankhoe (2020) found that convergence has had a considerable impact on broadcasting practice, with more positive than negative effects. The results also demonstrated that as more broadcast content distribution channels appear, media convergence generates new and improved options.

41% of broadcast media practitioners in Imo State had a moderate level of understanding regarding ICT tools used in broadcasting, according to Anorue & Onyike (2021) investigation into the "Effective use of ICTs by media practitioners in modern day broadcasting." Additionally, it was shown that 64% of broadcast media professionals use ICT in their broadcast responsibilities to a moderate degree. According to additional research, 55% of broadcast media professionals believed that ICT had been successful. The results also showed that inadequate funding, inadequate training of broadcast staff, and a lack of supply are some of the issues that ICT is confronting in contemporary broadcasting.

The study "The use of ICTs in gathering, producing, and airing of news among journalists in government owned broadcast stations in Southeast, Nigeria" was conducted by Anorue and Onyike in 2021. The study, which used an explanatory mixed method research methodology, found that although journalists utilise ICTs, their use is limited since most of them are not familiar with the advanced ICT gear and software required to run a digital newsroom.

According to a related study by Obayi et al. (2020), "Journalists' Perception of the Influence of ICTs in Enhancing Journalism Practise in Owerri, Imo State," 90% of journalists in Owerri had access to ICTs, and 82% of journalists reported that ICTs had significantly aided them in gathering and reporting news. Furthermore, the study discovered that 90% of journalists in Owerri strongly agreed that ICTs had impacted their ability to do their professions, while 58% of journalists were having difficulty with the high expenses of incorporating new technology in media outlets.

A study by Obajuluwa & Talabi (2019) sought to determine journalists' operational use issues and their level of understanding regarding new media application technologies. According to the survey, the majority of participants 64 percent are able to use Google digital tools and podcasts, suggesting a slightly greater level of competency than the general public. However, with just 38% and 29% usage, respectively, of platforms like Wiki, Dejero, and Bambuser, among others, there was a limited display of knowledge. The Nigerian journalism industry is facing a number of difficulties, such as inadequate training for staff, a telecommunications network that is prone to epileptic disruptions, and a problem with the internet server.

Similarly, in their study "Impact of technology on traditional journalism in Pakistan," Ali et al. (2021) found that the use of technology has completely changed how news is produced and

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disseminated. Journalistic techniques have benefited greatly from its assistance. According to the report, technology has changed Pakistani journalism's general environment. In support of this finding, Jamil (2020) found that digital technology, particularly the internet and mobile phones, has significantly changed the news production and distribution process in Pakistan's mainstream news media through (i) multitasking, (ii) mobile journalism, (iii) the creation of online news websites, (iv) mobile news applications, and (v) increased news shareability.

The study was titled "Ethnic news media in the digital age: The impact of technological convergence in reshaping journalists' practices in Pakistan. "According to the respondents, there are now more multiskilled and multimedia employment in Pakistan's mainstream media newsrooms as a result of the convergence of digitalisation and new technologies in the workplace. This has consequently had a favourable effect on the news production and distribution process. The quality of news visuals and information on at least Pakistan's major television news stations has significantly improved because to the use of technology.

The results also demonstrated that technology does have some beneficial effects. News content has been improved in terms of both audio and visual quality. It went on to say that the main obstacles affecting journalists' use of digital technology in both ethnic and mainstream news media are a lack of funding to establish digital news rooms, a lack of training and education for journalists to practise digital journalism, news organisations' reluctance to invest in digital news rooms, Pakistan's inadequate ICT infrastructure, and a lack of audience members who are tech-savvy.

3. Method

The researcher employed the survey research design for the study which according to Question Pro (2024), is a quantitative method of collecting information from a pool of respondents through questions. The population of the study was 200 according to National Union of Journalist's fact sheet (NUJ, 2023). However, (Damico, 2016) observes that when a population is small and well defined, the whole population can be studied. Since the population of registered journalists in Imo State is 200, the researcher decided to study the entire population with the adoption of the census principle. The researcher used questionnaire as the instrument for data collection. However, the questionnaire items were framed to gather nominal data using a four-point Likert scale of "strongly Agree" (SA) (4 points), "Agree" (A) (3 points), "Disagree" (D) (2 points) and "Strongly Disagree" (SD) (1 point). The face validity technique was used to validate the instrument. This was done by two experts in the field of media studies. Their observation was integrated in the instrument in order to make the instrument valid. The instrument reliability was tested using Cronbach's Alpha ($\alpha \geq 0.70$ as an acceptable threshold). The data gotten from the field through the questionnaire as an instrument for data collection was analyzed in simple percentages and mean analysis.

4. Result and Discussion

The researcher distributed 200 copies of the questionnaire to the respondents comprising journalists in Imo State. The data collected from the field through questionnaire was presented in tables using numbers and mean analysis. All the 200 (100%) copies distributed were retrieved and found valid. This accounts for 100% return rate.

Research Question One: What is the extent of ICT usage during news gathering and production among journalists in Imo State?

In answering this research question, Table 1, Table 2 and Table 3, were used to provide answers to the question:

Table 1. Respondent's responses on their level of ICT literacy

Items	Frequency	Percent
Very high	56	28
High	61	31
Moderate	68	34
Low	15	7
Total	200	100

Table 1 above indicated that 34% of the respondents' level of ICT literacy is moderate. This means that the level of ICT literacy of a majority of the respondents is moderate.

Table 2. Respondents' response on whether they use ICT tools in news gathering and production

Items	Frequency	Percent
Yes	200	100
No	0	0
Can't say	0	0
Total	200	100

Result of the analysis on Table 2 above revealed that 100% of the respondents use ICT tools in news gathering and production. This implies that all the respondents use ICT tools in the process of news gathering and production.

Table 3. The respondents' extent of ICT usage during news gathering and production

Items	Frequency	Percentage
Large extent	120	60
High	54	27
Moderate	21	11
Low	5	2
Total	200	100

This Table 3, revealed that the majority of the respondents use ICTs during news gathering and production to a large extent at 66%. This means that the respondents use ICTs during news gathering and production to a large extent.

As seen in Table 4, commenting on the perception of the respondents towards broadcasting in the era of digital technologies, result revealed that at an average mean of 3.4 (N=200), the respondents see digital technologies as a great deal of blessing in broadcasting that aids in swift, efficient, effective and an increased speed in news gathering, production process and dissemination.

As seen in Table 4, analysis of mean showed that, at an average mean of 3.3 (N=200), lack of ICT training, poor ICT infrastructure, lack of economic resources for ICT maintenance, high cost of ICT gadgets and government tariff, and ignorance of broadcast stations to invest in ICTs are some of the challenges encountered by the broadcast journalists in Imo State in the era of digital technologies.

Result of the findings on the extent of ICT usage during news gathering and production among journalists in Imo State revealed that, 34% of the respondents' level of ICT literacy is moderate. This means that the level of ICT literacy of a majority of the respondents is moderate. About 100% of the respondents use ICT tools in news gathering and production, which implies that all the respondents use ICT tools in the process of news gathering and production.

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Research Question Two: What is the perception of Imo State journalists towards broadcasting in the era of digital technologies?

The cluster table format was used to provide answers to the question.

Table 4. Respondent's responses on their perception towards broadcasting in the era of digital technologies

Option	SA	A	D	SD	Total	Mean	Decision
I think ICTs make news gathering swift	88	112	0	0	200	3.4	Accepted
I think ICTs make news production faster	107	91	0	2	200	3.5	Accepted
I think ICTs aid in faster dissemination of news	93	106	1	0	200	3.5	Accepted
Digital technologies enable the journalist get information from the news source without physical contact	100	90	7	3	200	3.4	Accepted
I think ICTs facilitate the news production process	95	103	1	1	200	3.4	Accepted
I think ICTs have brought significant improvement in the broadcast industry	117	79	3	1	200	3.6	Accepted
I think ICTs have made the broadcast industry more efficient and effective in-service delivery	99	101	0	0	200	3.5	Accepted
I think ICTs increases speed with which journalists source information	111	84	3	2	200	3.0	Accepted
Average Mean						3.4	Accepted

Decision Rule: *If the calculated mean is equal or greater than the criterion means (2.5), then the decision is accepted but if the calculated mean is lower than the criterion mean (2.5), the decision is rejected.*

The majority of the respondents use ICTs during news gathering and production to a large extent at 66%. This could be as result of the stiff competition going on among media houses-cum journalists with the aim of getting more audience with sophisticated digital equipment that will promote efficient delivery. This result is in line with recent research by Owe et al. (2023), which revealed that 66% of respondents have access to and frequently use digital technologies in the performance of their jobs. A study by Anorue & Onyike (2021) found that 41% of Imo State broadcast media practitioners at a moderate level know about the ICT tools used in broadcasting. About 64% of broadcast media practitioners were found to use ICT in their broadcast tasks to a moderate degree. Also, 90% of Owerri's journalists have access to ICTs, according to Emwinromwankhoe & Ekhareafo (2021), which lends more credence to this finding. 64% of the respondents, according to Ugochukwu et al. (2021), are able to use Google digital technologies and podcasts, suggesting a slightly greater degree of competency than the general public.

Research Question Three: What is the influence of digital technologies on news production among journalists in Imo State?

The cluster table format was used to provide answers to the question.

Table 5. Respondent's responses on the influence of digital technologies on news production

Option	SA	A	D	SD	Total	Mean	Decision
Digital technologies have enhanced the quality of videos/visuals/pictures in news production	121	79	0	0	200	3.6	Accepted
Digital technologies have enhanced the audio quality of broadcast stations	118	82	0		200	3.6	Accepted
News contents now travel faster and farer through the social media handles of broadcast stations	100	98	2	0	200	3.5	Accepted
ICTs have cut the barrier of time and space in news production and dissemination	95	103	1	1	200	3.4	Accepted
ICTs have enabled audience participation and feedback	115	85	0	0	200	3.6	Accepted
Journalists now get information from news sources faster due to ICTs	101	95	2	2	200	3.5	Accepted
Digital technologies have made news production more convenient and more professional	97	100	1	2	200	3.5	Accepted
Average Mean						3.5	Accepted

As seen in Table 5, result of the analysis on theinfluence of digital technologies on news production revealed that, at an average mean of 3.5 (N=200), digital technologies have positively impacted news production, making broadcasting more convenient and professional. Nonetheless, Anorue & Onyike (2021) found that although journalists utilise ICTs, their use is limited since the majority of them are not familiar with the advanced ICT equipment and software required to run a digital newsroom.

Commenting on the perception of the respondents towards broadcasting in the era of digital technologies, result revealed that at a grand mean of 3.4 (N=200), the respondents see it that, ICTs make news gathering swift; ICTs make news production faster; ICTs aid in faster dissemination of news; digital technologies enable the journalist get information from the news source without physical contact; ICTs facilitate the news production process; ICTs have brought significant improvement in the broadcast industry; ICTs have made the broadcast industry more efficient and effective in service delivery; and ICTs increases speed with which journalists source information. Therefore, the respondents see digital technologies as a great deal of blessing in broadcasting that aids in swift, efficient, effective and with an increased speed in news gathering, production process and dissemination.

As seen in Table 6, this finding is consistent with research by Owe et al. (2023), which showed that respondents, with a grand mean score of 3.6, had a favourable opinion of the use of digital technology in journalism practice and thought it was a plus to the field. Additionally, according to Anorue et al.'s data from 2021, 55% of broadcast media practitioners believed that ICT had been successful. According to Jamil (2020), the respondents believed that more multi-skilled and multimedia employment were available in Pakistan's mainstream media newsrooms as a result of

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the convergence of digitalisation and new technologies in the workplace. Consequently, this has had a favourable effect on the news production and delivery process.

Theoretically, this finding is hinged on the psychological theory of perception given that the respondents perceive digital technologies as a great deal of blessing in broadcasting that aids in swift, efficient, effective and with an increased speed in news gathering, production process and dissemination.

Research Question Four: What are the challenges encountered by the broadcast journalists in Imo State in the era of digital technologies?

The cluster table format was used to provide answers to the question.

Table 6. Respondent's responses on the challenges encountered in the era of digital technologies

Option	SA	A	D	SD	Total	Mean	Decision
I think lack of ICT training among journalists is a challenge confronting broadcast journalists in the era of digital technologies	77	113	7	3	200	3.3	Accepted
Poor ICT infrastructure by the broadcast media organisation	108	82	8	2	200	3.5	Accepted
Lack of digital-savvy journalists	100	85	10	5	200	3.4	Accepted
Lack of economic resources for maintenance of ICTs by the station	88	99	11	3	200	2.9	Accepted
High cost of ICT gadgets alongside high tariff placed on them by the government	105	85	3	7	200	3.4	Accepted
Ignorance of broadcast stations to invest in ICTs	115	75	5	5	200	3.5	Accepted
Average Mean						3.3	Accepted

As seen in Table 6, finding on the influence of digital technologies on news production revealed that, at an average mean of 3.5 (N=200), digital technologies have enhanced the quality of videos/visuals/pictures in news production; digital technologies have enhanced the audio quality of broadcast stations; news contents now travel faster and farer through the social media handles of broadcast stations; ICTs have cut the barrier of time and space in news production and dissemination; ICTs have enabled audience participation and feedback; Journalists now get information from news sources faster due to ICTs; and digital technologies have made news production more convenient and more professional. This implies that digital technologies have positively influenced news production process, making broadcasting more convenient and more standardised.

A corroborating finding by (Owe et al., 2023) also showed that the use of digital technology in journalistic practice has improved the professional process of news generation, dissemination, and collection, with a grand mean score of 3.6. Similar findings were made by Emwinromwankhoe & Ekhareafo (2021), who found that ICTs have had a significant impact on broadcast operations in

the stations, particularly in the areas of information collecting, programme production and editing, relay, display, and storage.

The results also demonstrated that ICTs improve station broadcasts. In another supporting finding, demonstrated that convergence has led to notable shifts in broadcasting practices throughout the nation. In a separate study, Emwinromwankhoe (2020) found that convergence has had a considerable impact on broadcasting practices, with more positive than negative effects. The results also demonstrated that, as more broadcast content distribution channels appear, media convergence generates new and improved options. According to the findings of Bedoya (2021), 82% of journalists reported that ICTs have significantly aided them in their news reporting and collecting. It also revealed that 90% of journalists in Owerri firmly felt that ICTs have impacted their ability to do their jobs.

Technology has completely changed how news is produced and disseminated, according to Khansir et al. (2021), which lends more credence to this conclusion. It has significantly improved journalistic procedures. In line with this finding, Jamil (2020) found that digital technology particularly the internet and mobile phones has significantly changed how news is produced and disseminated in Pakistan's mainstream media. The quality of news material and images on at least Pakistan's major television news stations has significantly improved because to the use of technology. The outcome also shown that technology does have some beneficial effects. News content's visual and aural quality has been enhanced.

This finding is based on the theoretical underpinnings of Thorstein Veblen's (1857–1929) technological determinism theory, which is predicated on the fundamental tenet that technology forms, decides, and influences how members of a society think, believe, and act. Since machines may augment and boost human productivity, the theory's strength lies in its ability to enable people to develop inventions or technologies that can meet their demands. When Nigeria transitions from analogue to digital broadcasting, the theory of technological determinism is used to explain how the new media technology of digital switchover would affect the thoughts, emotions, and behaviours of broadcast journalists.

Result of the mean on the challenges encountered by the broadcast journalists in Imo State in the era of digital technologies showed that, at a grand mean of 3.3 (N=200), lack of ICT training, poor ICT infrastructure, lack of economic resources for ICT maintenance, high cost of ICT gadgets and government tariff, and ignorance of broadcast stations to invest in ICTs are some of the challenges encountered by the broadcast journalists in Imo State in the era of digital technologies. This result is consistent with the findings of Owe et al. (2023), who found that respondents' challenges when using digital technologies to perform their reporting duties were, on average, 3.7. These challenges included digital/computer illiteracy, a lack of the necessary knowledge to operate digital technology gadgets, the high cost of acquiring digital technology gadgets by the media organisation, etc. In a separate study, Emwinromwankhoe & Ekhareafo (2021) discovered that among the difficulties faced by the stations' broadcast practitioners are a lack of comprehensive training, unstable power supplies, expensive ICTs, limited Internet facilities, unreliable news sources, and insufficient supply.

Anorue & Onyike (2021) provided additional support for this finding by revealing that the issues with ICT in contemporary broadcasting include inadequate budget, inadequate training for broadcast staff, and inadequate supply. The high expenses of integrating new technology in media outlets are a problem for 58% of journalists (Owe et al., 2023). Further supporting this, Ugochukwu et al. (2021) found that the Nigerian journalism industry faces several difficulties, including inadequate staff training, an unstable telecommunications network that is prone to epileptic

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disturbances, and a problem with the internet server. Additionally, Jamil (2020) went further in his research to identify the main obstacles that affect journalists' use of digital technology in both ethnic and mainstream news media: a lack of funding to establish digital news rooms; a lack of training and education for journalists to practise digital journalism; a lack of knowledge on the part of news organisations to invest in digital news rooms; Pakistan's inadequate ICT infrastructure; and a lack of audience members who are tech-savvy.

5. Conclusion

The study comes to the conclusion that technology convergence has improved broadcasting practices in many areas, particularly in the fields of news reporting, news content creation, and news distribution through broadcast stations' social media presence. The study has practical, theoretical and policy implications. The practical implication of this study can be seen from the lenses of how journalists perceive digital technologies and how they are used in the practice of journalism such as news gathering, production and distribution in a technological environment. The theoretical implication is that through the psychological perception theory and the technological determinism theory one can understand vividly why journalists act in a particular way especially in a technological driven society. This information will be handy to future researchers who would want to apply the psychological perception and technological determinism theories in studying professionals in another field. The findings of this study will help policymakers in making policies that can create good room for the extensive use of digital technologies in a fast-growing technological space where work will be more efficient with some high level of accuracy and speed. Given the findings of the study, the followings recommendations were put forward:

There is need for a wide embrace of digital switchover by broadcast stations and its practices among the journalists given that technological convergence aids a great deal in news gathering, production and dissemination. There is need for journalists to be digital literate in order to be technologically savvy to be able to use ICT tools without hitches. The government should provide an enabling environment for an efficient and effective digital switchover by the broadcast stations by removing all tariffs on the procurement of digital gadgets. There should always be a mandatory workshop and training of journalists on digital technologies as one of the prerequisite for journalists organised by the Nigerian Union of Journalists (NUJ), Imo State chapter.

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