

**Drone journalism: The empirical arguments for its utilization in
investigative journalism in Nigeria**

Desmond Onyemechi Okocha

Department of Mass Communication
Bingham University,
Karu, Nasarawa State, Nigeria

Agaku Terhile

Department of Mass Communication
Bingham University, Karu,
Nasarawa State, Nigeria

Roxie Ojoma Ola-Akuma

Department of Mass Communication
Bingham University, Karu,
Nasarawa State, Nigeria

Abstract

This study was conducted to establish the empirical arguments for the utilization of drones in investigative journalism in Nigeria. The study is situated on the tenets of technology acceptance model while the survey research design was adopted with questionnaire as instrument for data collection on a sample size of 100 respondents. Findings from the study indicate that the roles of drone journalism in investigative journalism range from timelines, aerial photography to in-depth coverage of issues. Further findings indicate that drone journalism enhances the practice of investigative journalism to a very large extent while the challenges of drone journalism in investigative journalism range from invasion of privacy, safety issues to operational issues. The study recommends that drones should be fully adopted in the practice of investigative journalism to enhance timely completion of an issue under investigation, and journalists should be adequately trained to understand how to operate drones as this would go a long way to enhance their work particularly when handling investigative stories. When using drones for investigative stories, journalists should ensure they focus on the issue to avoid invading the privacy of others, drones should be applied in investigative journalism to enable journalists covering such stories report with pictorial evidence, drones should be utilized for investigative journalism to help journalists uncover events in restive and hazardous environments and drones should be fully deployed by media organizations in Nigeria as a tool to uncover the activities of terrorists and bandits in the North Eastern part of the country with a view to help the security agencies arrest the security concerns in Nigeria. The study concludes that drone journalism plays a significant role in the practice of investigative journalism as the use of drones minimizes the cost involved in investigative journalism, in-depth coverage of issues, timeliness as well as aerial photography respectively.



Keywords: Drone Journalism, Investigative Journalism, Mass Media, Emerging Media, Nigeria

Introduction

Drones as emerging technology in the news media industry are fast changing the narrative of journalism practice in the 21st century particularly the newsgathering process in restive or hazardous environments via the use of drones or unmanned aerial vehicles (UAVs).

Drones have opened up new opportunities across different fields of human endeavor and journalism is not different. Singh, observed that the use of aerial videography in journalism is nothing as a Los Angeles-based local TV station, KTLA, modified a Bell 47, the iconic single rotor, single-engine light helicopter and outfitted it with broadcast equipment in 1958.¹

Whittaker states that the Federal Aviation Administration in the U.S allowed drones to be flown in designated areas and that too was only by a licensed pilot for a manned aircraft.² This came after the University of Nebraska-Lincoln (UNL) flew a drone over a dry riverbed to cover drought in local areas in 2012. Whittaker further explained that CNN was one of the first news agencies to utilize a drone for news reporting and was involved in the initial efforts (along with the FAA) to determine what role UAVs could play in journalism, while BBC news used its first drone in 2013.³

In mid-2016, CNN started its own aerial unit. Among others, is one of CNN's drones that helped find earthquake-affected villages in Nepal, enabling local authorities to provide humanitarian relief to the affected people.⁴ Drone journalism explores the increased use of unmanned aerial vehicles, or drones, by the global media for researching and newsgathering purposes. The Federal Aviation Administration in the year 2016, finalized the procedures on the commercial use of UAS, which gave journalists clear direction on the use of drones for newsgathering and media use purposes across the United States.⁵

The technology has since become a mainstream tool in journalism with vast potential applications by media organizations in the developed countries. Drones are said to be unique in the sense that they can offer distinct visual perspectives. Drones can be utilized to explore new reporting frontiers beyond the visuals, through data collection and integration with emerging technologies.

Drones are beneficial to journalism practice based on the portability and rapid deployment facilitated by the light-weight nature and less complex nature.⁶ Henceforth, media organizations could exploit these drone enthusiasts through

¹Singh, What is drone journalism?

²Whittaker, Drones in Journalism.

³Whittaker, Drones in Journalism.

⁴Ibid.

⁵Ibid.

⁶Ntalakas, Dimolas, Kallilis and Veglis, Drone Journalism.

the paradigm of citizen's journalism The uses of drones in journalism to date have been to obtain images when the circumstances advise against dispatching reporters, such as armed conflicts, other dangerous situations, and areas that are hard to reach as the possibility of safely capturing images and video footage of wars, natural disasters, and demonstrations is now possible.

The use of drones for sourcing information in the practice of journalism industry enables journalists to take footage of news events such as volcanic eruptions, war-torn villages, and natural disasters. Since this technological innovation is operated remotely, journalists see it as safer and cost-efficient means of video recording, especially in highly vulnerable coverage. Picard, Goldberg and Corcoran, opined that drone journalism has a great potential to obtain footage without journalists being observed or in places to which it is unadvisable to send reporters because of the risks involved.⁷Hence, their utility for investigative journalism.

The implication is that reporters could obtain images with certain guarantees for their own safety, since they would not have to run the risk of being caught in unpredictable situations like the lingering insecurity problems in Nigeria and the Lekki Tollgate killings during the #ENDSARS protest in 2020.The insecurity challenge in Nigeria today occasioned by Boko Haram, banditry, herdsmen/farmers clashes and the Lekki toll gate shooting in Lagos during the #End SARS protest. On the night of 20th of October 2020, members of the Nigerian Army opened fire on peaceful #EndSARS protesters at the Lekki toll gate in Lagos State, Nigeria. Amnesty International reported that at least 12 protesters were killed during the shooting while the number is said to be higher.

The Nigerian Army who were the principal actors in the shooting initially denied that the shooting ever happened, and that none of its personnel were present at the toll gate. It is against this backdrop that the study is designed to establish the empirical arguments for the utilization of drones in investigative journalism in Nigeria.

Objectives of the Study

The broad objective of this study is to establish the empirical arguments for the utilization of drones in investigative journalism in Nigeria. The study specifically seeks:

1. to establish the role of drones in investigative journalism,
2. to find out the extent to which the use of drones has enhanced investigative journalism;
3. to identify the challenges of drones in investigative journalism.

⁷Picard, Goldberg and Corcoran, Remotely Piloted Aircraft Systems

Conceptual Clarifications

Drone Journalism

Drone Journalism refers to the deployment of drones as a newsgathering tool. Ntalakas, et al., states that simpler and stricter definition has been provided by Matt Waite who explained that drone journalism refers to "using a small unmanned aircraft to gather photo, video, and data for journalism".⁸ Drone technology allows journalists to take footage of news events such as volcanic eruptions, war-torn villages, and natural disasters. This is because drones are operated remotely and journalists see it as safer and cost-efficient means of video recording, especially in highly vulnerable coverage.⁹

Drones or unmanned aerial vehicles as it is sometimes called, can be employed to collect additional data offered by the embedded sensors (i.e. invisible infrared light cameras, atmospheric pollution measures, smoke detection, location and geographical information, and others). This is to say that drones can be utilized in data journalism and associated news story validation processes. It is in this line of thought that Singh, posits that drone photos and videos lend a unique aerial perspective to everyday news coverage as these reporters and journalists use the leverage to make reports more insightful and innovative for public consumption.¹⁰ From the scholarly definitions, it can be deduced that drone journalism is concerned with the use of drones or unmanned aerial vehicles as tool for efficient journalistic purposes.

Investigative Journalism

Investigative journalism is a form of journalism in which reporters deeply investigate a single topic of interest such as serious crimes, political corruption, or corporate wrongdoing. An investigative journalist may spend days, weeks, months or years researching and preparing a report. Practitioners sometimes use the terms "watchdog reporting" or "accountability reporting". Houston argued that the definition of investigative journalism is multifaceted. It is also known as exposed journalism, adversarial journalism, in-depth journalism, muckraking journalism, advocacy journalism, public service journalism, watchdog journalism and journalism of outrage.¹¹

Hunter and Hanson also argued that investigative journalism has to do with investigation to expose issues of public importance concealed deliberately by someone in a position of authority or accidentally behind a chaotic mass of facts and circumstances of obscure understanding. Investigative journalism requires the use of both secret and open sources and documents. Investigative journalism requires proper documentation to support or deny declaration by sources.¹²

⁸Ntalakas, Dimolas, Kallilis and Veglis, *Drone Journalism*.

⁹Corcoran, *Drone Journalism: Newsgathering applications*

¹⁰Singh, *What is drone journalism?*

¹¹Houston, *The future of Investigative Journalism*.

¹²Hunter, et.al., *Story-Based Inquiry*

In investigative journalism, journalists in most instances are required to thoroughly investigate to unravel issues of public importance. The difficulty also stems from the fact that, sometimes an investigative journalist or reporter may spend, days, weeks, months or years researching and preparing a report depending on the nature of the report. The unique nature of investigative journalism is based on the fact that, information on the issue under investigation cannot be published before coherence and completeness is assured. This view is supported by Hunter, et al. who submit that, investigative journalism is not reporting as usual.¹³ Experts have stressed that in other parts of the world, the term investigative journalism is associated with leaks.¹⁴ According to a case consortium by the Columbia Center for New Media Teaching and Learning,

“Public officials, police and intelligence agents or politicians selectively “leak” or release secret information or investigative files in order to promote their own interests. Journalists report on the leaked information, often without checking or looking for additional facts on their own.”¹⁵

This implies that investigative journalism involves unveiling of matters that are concealed either deliberately by someone in a position of power, or accidentally, behind a chaotic mass of facts and circumstances and the analysis and exposure of all relevant facts to the public. In other words, investigative journalism is an aspect of journalism where journalists or reporters go in-depth to unravel, unveil as well as expose issues concealed by individuals, groups and those in authority respective or leadership positions respectively. It involves the role of journalists in uncovering social, economic or cultural developments too recent to have been identified by experts, hidden by received wisdom and masked by media sensationalism.

Theoretical Framework

Davis Technology Acceptance Model

Technology Acceptance Model (TAM) was propounded by Davis in (1989). Technology acceptance model is one of the most influential models of technology acceptance. This model assumed that two primary factors influence an individual's intention to use a new technology: perceived ease of use and perceived usefulness. According to Mulugeta, Kalayou & Binyam, technology acceptance model is concerned with factors that determine behavioral intention of an individual to use new technologies from the end user's perspective.¹⁶ Technology acceptance model comprises of core variables of user motivation such as, perceived ease of use, perceived usefulness, and attitudes towards a new technology.¹⁷

¹³Hunter, et.al., Story-Based Inquiry

¹⁴Defining Investigative Reporting

¹⁵Ibid.

¹⁶Kalayou, The Applicability of the Modified Technology

¹⁷Ibid

The perceived usefulness (PU) and perceived ease of use (PEU) are considered as a principal determinant that directly or indirectly explains the behavioral intention to use (“acceptance”) a new technology.¹⁸ The perceived usefulness (PU) refers to the extent to which an individual believes that applying certain technology will advance job performance. Perceived Ease of Use (PEU) on the other hand refers to the extent to which an individual believe that a particular technology will be effortless and easy to use. The perceived ease of use helps to predict user’s acceptance or rejection of new technologies. ¹⁹ The relevance of technology acceptance model to this study is premised on the assumption that the perceived benefits of drone journalism in investigative journalism would influence the adoption of drones for investigative journalism.

Review of General Literature

Historical Development of Drones

Fox and Cosgrove noted that imagined aerial images were created in stone carvings and paintings around the world as early as the Neolithic period.²⁰ Thousands of years later, powered flight and photography were pioneered and popularized—nearly simultaneously in the first half of the nineteenth century.²¹ By mid-nineteenth century, photographers were employing balloons and kites to obtain aerial photographs. One early use of aerial photography was military surveillance. It is believed that the Union army used aerial photography in the Civil War to identify Confederate troop positions, but the South quickly discovered that “they could simply shoot down the balloons, and no photographs have ever surfaced to confirm actual deployment of a camera.

In 1906, George Lawrence used kites to shoot a series of aerial shots of the San Francisco earthquake.²² According to Cosgrove and Fox, he assembled the photos into a panorama of the destruction, and sold them for \$15,000, which was almost 6 certainly a record for a single photograph at that time, and inaugurated the use of aerial photography as a medium for covering such large-scale news events.²³ In 1957, the Los Angeles police department began using helicopters. “Within a year, this stimulated local television stations to send up their first news choppers over the vast urban region so they could keep up with the action” (Cosgrove & Fox, 2009).²⁴In a study titled, “Journalism and drones: Challenges and opportunities of the use of drones in news production” Barrero, reports that the history of drones in journalism during the first decade of the twenty-first century, may have been novel but then it had already been employed for military purposes for a longtime.²⁵Nevertheless, the drone concept can be traced back to the mid-nineteenth century, when Austria launched an attack against Venice using hot air balloons loaded with explosives.²⁶ By the end of the century, the inventor Tesla had already predicted

¹⁸Ibid

¹⁹Ibid

²⁰Fox and Cosgrove, *Photography and Flight*

²¹Ibid

²²Waxman, *Aerial Photography’s Surprising*

²³Fox and Cosgrove, *Photography and Flight*

²⁴Ibid

²⁵Barrero, *Journalism and Drones*.

²⁶Miller, *Strategic Significance of Drone Operations for Warfare*

the advent of remote-controlled military vehicles and the broad range of possibilities opened up by radio control technology, as can be glimpsed in the patent that he took out in 1898 'Method of and apparatus for controlling mechanism of moving vessels or vehicles'. Barrero adds that, Tesla was the true visionary in this regard and, during World War I, the warring parties began to test formulas with a view to fulfilling his prophesies.²⁷

However, the term 'drone' dates back to at least 1935. Barrero, describes how after watching a demonstration of the DH 82B Queen Bee, a new remote-controlled aircraft that the British Royal Navy used for target practice, US Admiral William H. Standley commissioned Commander Delmer Fahrney to develop something similar for the US Navy. And it was Fahrney who adopted the term 'drone' to refer to this unmanned aircraft which could be controlled by an operator on land or by a 'mother' aircraft.²⁸

Elements of Investigative Journalism

Investigative journalism has salient elements that make it distinct from other news stories. The elements of investigative journalism include the following:

1. Investigative journalism involves thorough investigation into an issue or topic: In investigative journalism, journalist or reporters usually carryout in-depth investigation to expose or unravel issues of public importance.
2. The issue or topic of investigative journalism has to be of public interest: investigative journalists or reporters must investigate issues that are beneficial to majority of the general public.
3. Investigative journalism is a process, not an event: it is unique with thorough investigations with accepted standards of accuracy and evidence.
4. Investigative journalism must be original and proactive: Investigative stories have to be based on the work of the journalist and (where resources permit) his or her team. Although an investigative story can start with a tip, simply reporting the tip, or printing the secret document that is anonymously faxed through you, is not what investigative journalism entails .
5. It should produce new information or put together previously available information in a new way to reveal its significance.
6. Investigative journalism is multi-sourced: this implies that a single source can provide fascinating revelations and depending on the credibility of the source. Access to insights and information that would otherwise be hidden.
7. Investigative journalism requires greater resources, team work and time compared to a routine news report: Most of the case studies presented of investigative reportage are the results of team investigations.²⁹

²⁷Barrero, Journalism and Drones

²⁸Ibid

²⁹National open University of Nigeria, Investigative and Interpretative reporting

General Categories of Drones

Corcoran, in a scholarly research "Drone Journalism: Newsgathering Applications of Unmanned Aerial Vehicles (UAVs) in Covering Conflict, Civil Unrest and Disaster", identified four broad categories of drones to include:

- 1) Small helicopter-like 'multi-rotors' weighing less than 2kg, on-board Wi-Fi-controlled by smart phone or tablet device. Easy to operate with a range of a few hundred metres. "Go Pro" standard camera quality. This type of drone is suitable as a 'back-pack' option where immediacy takes precedence over picture quality.
- 2) Larger multi-rotor 2-7kg, capable of lifting heavier, broadcast quality HD live streaming cameras. It is typically an operating radius of about 2,000m, with 'line of sight', maximum operating height of 2,000m, maximum speed 70 km per hour. Endurance 12-20 minutes. Requires skilled UAV pilot, usually supported by a camera/systems operator.
- 3) Small-fixed wing craft which resembles large model aircraft. It is hand-launched with various types and have 45-90 minutes endurance with a range of 10-45kilometres. It can be operated beyond visual 'line of sight' of the operator. This category of drones requires a set -up of antenna for ground control station. Suitable for longer range regional or coastal assignments.
- 4) Long-range fixed-wing craft of 18-25kg. It is operated by the military as 'tactical' craft, current civil applications including mining survey and fisheries patrol. This category of drones are highly complex and requires a skilled crew of 3-4 to operate.³⁰

National Information Technology Development Agency (NITDA)

National Information Technology Development is a public service institution established by NITDA Act 2007 as the ICT policy implementing arm of the Federal Ministry of Communication of the Federal Republic of Nigeria. The agency has the sole responsibility of developing programs that caters for the running of ICT related activities in the country. NITDA is also mandated with the implementation of policies guideline for driving ICT in Nigeria. The agency plays advisory role in copyright law by verification and revision of applicable laws in tandem with the application of software and technology acquisition. Majority of these activities are achieved through organization of workshops which cater for training needs of her staff, government functionaries and education sectors.

NITDA was commissioned by the administration of President Olusegun Obasanjo through the perfection of a bill designed to provide for the establishment of National Information Technology Development in 2007 (NITDA Act). In a study by Gamatie in 2015 titled, "Computing in Research and Development in Africa: Benefits, Trends" report has it that the operations of NITDA started in 2001, six years before the bill was passed into law.³¹ The

³⁰Corcoran, Drone Journalism: Newsgathering applications

³¹Gamatie, Computing in Research and Development

agency's main objective is to provide ICT as a tool in tertiary institution to drive the mechanism of education sector in the country.

Relevance of Drones in Investigative Journalism

Barrero, in a study titled "Journalism and drones: Challenges and opportunities of the use of drones in news production" states that the relevance of drones in investigative journalism include: Drones are relevant in covering protests, demonstrations, and rallies inasmuch as they make it possible to show their true size and calculate the number of people taking part, thus contributing a visual value to the news context.³²

Drones are equally useful in investigative journalism as the technology can automatically be utilized in covering sports events. With drones it is possible to offer detailed coverage of athletes participating in long-distance sports. Postema already envisages that, in a not-too-distant future, activities such as sports coverage could be more complete, without viewers having to miss crucial moments of action because of the lack of a camera covering the angle in question.³³ This is backed up by several studies which have demonstrated that a point-of-view shot has a significant effect on the viewer's visual experience of sports broadcasts.³⁴ Drones are also relevant in investigative journalism because the technology has the capacity to ensure immediate coverage and live, real-time broadcasting. The technology can equally enhance the coverage of unforeseen or unscheduled events because of their high mobility and rapid deployment.

The technology is relevant in investigative journalism particularly for filming illegal activities, to which must be added the value of whistleblowing. Drone is also relevant in investigative journalism especially in monitoring and scrutinizing government activities, as a counter argument. Drone journalism also offer great advantages when obtaining photos and video footage as an information source (for news stories, reports, documentaries, etc.). The technology can be used for obtaining photos or footage of places that are difficult to reach, either because of the lie of the land (caves, forests, oceans, deserts, etc.) or because of the consequences of natural (hurricanes, earthquakes, tidal waves, floods, etc.) or man-made (forest fires, spills or dumping, etc.) disasters.

The technology can be used for obtaining photos or footage in dangerous situations, such as: armed conflicts, without putting the lives of reporters and their teams at risk and disguises their presence in the area. Drone technology is also relevant in investigative journalism, hence, by removing the presence of the reporter it offers a host of possibilities for investigative and reporter journalism and for obtaining information on illegal activities, although drones are rarely used for this purpose at the moment. Drone technology provides content with a high documentary value, which has a direct impact on news credibility. The

³²Barrero, Journalism and Drones

³³Postema, *News Drones*.

³⁴Ibid

technology is suitable for covering breaking news. Due to their sizes, drones can be transported and operational in a short time, which is very poor positive for immediacy. In fact, renting a helicopter is much more time-consuming. But the permits required by law to fly drones clash with the technical agility characterizing these devices, versus other aerial filming systems. The technology is ideal for obtaining panoramic views and tracking, thus providing viewers with striking visual information (demonstration, protests, etc.). These images can be captured from different perspectives, angles, and altitudes by using more than one drone, which could also be useful for sports broadcasting. The implication is that drones are relevant in investigative journalism as can be seen from the review.

Challenges of using Drones in Investigative Journalism

Despite the uses of drones in the practice of journalism, there are concerns and challenges surrounding the use of the technology in diverse fields including the newsroom routines. Some of challenges of drones in investigative journalism include:

Lack of Operational Know-How

As an emerging technological innovation in the media industry, most media practitioners are not familiar with the operation of the technology. This is quite challenging because lack of operational know-how is a major hindrance for the use of this technology by some media organizations.

Safety Concerns

The downside of using drones in populated areas is that they can crash down on the very citizens they were sent up to look down on. Susini in a "Technocritical Review of Drones Crash Risk Probabilistic Consequences and its Societal Acceptance" revealed that in countries where non-military drones are increasingly being used and where military drones have been deployed, cases of the aerial devices crashing into people in open spaces, homes, farms, runways, highways, water ways and the Air Force C-130 Hercules, an American four-engine turboprop military transport aircraft has been recorded.³⁵

Despite the absence of drones crashing down on people or colliding with aircraft in Nigeria, there are other safety concerns like the use of aerial device that can pose danger to the Nigerian society especially with the activities of terrorists, banditry and other security issues on the rise; drones could be utilized by these groups of people for the purpose of surveillance on military operations.

Privacy Concerns

The right to privacy has been diminishing due to the growth of mass media and technological innovations that make it possible to see and hear what would have been possible. Lyon a Canadian sociologist opined that people's privacy

³⁵Susini, A Technocritical Review.

are shrinking due to digital data mining and a proliferation of video cameras.³⁶ It is important to note that while drones offer limitless possibilities for the news media industry, their intrusive part infringes on the privacy of individuals.

Ethical Concerns

Ethics are said to be the soul of journalism and a poor ethical decision can greatly undermine the integrity of this noble profession. The use of technological innovations as supplementary tools in newsroom routines such as drones is further bringing to the fore the importance of journalistic ethics while the use of drone technology in the media landscape presents new perspectives and concerns.

- 5) Various types of
- 6) Unmanned Aerial Vehicles (UAV) have started to be utilized by both professional media
- 7) organizations and freelancers, including UGC-producers. New potentials appear, offering
- 8) timely and geographically-boundless coverage (i.e. catching breaking news without
- 9) location restrictions), new shooting capabilities (i.e. aerial view), remote-operation
- 10) services (i.e. in hazardous environments), immersive storytelling and others
- 11) (Chamberlain 2017; Chapa 2013; Cooke et al. 2017; Corcoran 2012, 2015; Culver 2014;
- 12) Goldberg et al. 2013; Gynnild 2014; Tremayne & Clark 2014).

organizations and freelancers, including UGC-producers. New potentials appear, offering timely and geographically-boundless coverage (i.e. catching breaking news without location restrictions), new shooting capabilities (i.e. aerial view), remote-operation services (i.e. in hazardous environments), immersive storytelling and others (Chamberlain 2017; Chapa 2013; Cooke et al. 2017; Corcoran 2012, 2015; Culver 2014; Goldberg et al. 2013; Gynnild 2014; Tremayne & Clark 2014). Various types of Unmanned Aerial Vehicles (UAV) have started to be utilized by both professional media organizations and freelancers, including UGC-producers. New potentials appear, offering timely and geographically-boundless coverage (i.e. catching breaking news without location restrictions), new shooting capabilities (i.e. aerial view), remote-operation services (i.e. in hazardous environments), immersive storytelling and others (Chamberlain 2017; Chapa 2013; Cooke et al. 2017; Corcoran 2012, 2015; Culver 2014; Goldberg et al. 2013; Gynnild 2014; Tremayne & Clark 2014

Research Methodology

The survey research design was adopted for this study with questionnaire as instrument for data collation on a sample size of 100 respondents. The researcher administered (100) copies of the instrument on practicing journalists in Abuja metropolis. However, only (92) copies were completed and

³⁶Lyon, *Surveillance Society*.

returned useable. The remaining (8) copies formed the mortality rate of the total number of copies of the instrument administered.

Data Presentation and Analysis

Table 1: Gender of Respondents

Responses	Frequency	Percentage
Male	65	70.6
Female	27	29.3
Total	92	100

Source: Field Survey, 2021

Data in table 1 indicate that 65 respondents representing (70.6%) are male while 27 respondents representing (29.3%) were female. This implies that most of the respondents were male journalists as affirmed by 65 respondents representing (70.6%) of the entire respondents.

Table 2: Respondents Media Category

Responses	Frequency	Percentage
Print	48	52.1
Broadcast	29	31.5
New Media	15	16.3
Total	92	100

Source: Field Survey, 2021

Data in table 2 indicate that 48 respondents representing (52.1%) are print journalists, 29 respondents representing (31.5%) are broadcast journalists while 15 respondents representing (16.3%) are News media journalists. This implies that the respondents cut across different media categories.

Table 3: Role of Drones in Investigative Journalism

Responses	Frequency	Percentage
Cost Effective	7	7.6
In-depth Coverage	15	16.3
Timeliness	39	42.3
Aerial Photography	31	33.6
Total	92	100

Source: Field Survey, 2020

Data in table 3 indicate that 7 respondents representing (7.6%) affirmed that drones are cost effective in investigative journalism, 15 respondents representing (16.3%) affirmed in-depth coverage of issues, 39 respondents representing (42.3%) affirmed Timeliness while 31 respondents representing (33.6%) affirmed aerial photography. This implies that the roles of drone journalism in investigative journalism range from timelines, aerial photography to in-depth coverage of issues

Table 4: Extent to which Drones Enhances Investigative Journalism

Responses	Frequency	Percentage
To Some Extent	26	28.2
To a Large Extent	29	31.5

To a Very Large Extent	37	40.2
Total	92	100

Source: Field Survey, 2021

Data in table 4 shows the extent to which drone journalism enhances investigative journalism. 26 respondents representing (28.2%) affirmed to some extent, 29 respondents representing (31.5%) affirmed to a large extent while 37 respondents representing (40.2%) affirmed that drone journalism enhances investigative journalism to a very large extent. This implies that drone journalism enhances the practice of investigative journalism to a very large extent as affirmed by 37 respondents representing (40.2%) of the entire respondents.

Table 5: Challenges of Drones in Investigative Journalism

Responses	Frequency	Percentage
Invasion of Privacy	30	32.6
Safety Issues	29	31.5
Operational Issues	33	35.8
Total	92	100

Source: Field Survey, 2021

Data in table 5 shows the challenges of drone journalism in investigative journalism. Available data indicate that 30 respondents representing (32.6%) affirmed invasion of privacy, 29 respondents representing (31.5%) affirmed safety issues while 33 respondents representing (35.8%) affirmed operational issues. This implies that the challenges of drone journalism in investigative journalism range from invasion of privacy, safety issues to operational issues as affirmed by the entire respondents.

Discussion of Findings

This study was conducted to empirically validate the utilization of drone journalism in investigative journalism in Nigeria. Empirical data indicate that most the respondents were male journalists as affirmed by 65 respondents representing (70.6%) of the entire respondents. Empirical data also indicate that journalists sampled cut across different media categories as affirmed by 48 respondents representing (52.1%) print journalists, 29 respondents representing (31.5%) broadcast journalists while 15 respondents representing (16.3%) News media journalists.

Further findings indicate that the roles of drone journalism in investigative journalism range from timelines, aerial photography to in-depth coverage of issues. This was affirmed by 7 respondents representing (7.6%) affirmed that drones are cost effective in investigative journalism, 15 respondents representing (16.3%) affirmed in-depth coverage of issues, 39 respondents representing (42.3%) affirmed Timeliness while 31 respondents representing (33.6%) affirmed aerial photography. This finding agrees with Singh (2021) submission that drone photos and videos lend a unique aerial perspective to everyday news coverage which enable journalists to make their reports more insightful and innovative for public consumption.

The study also found that drone journalism enhances the practice of investigative journalism to a very large extent as affirmed by 37 respondents representing (40.2%) of the entire respondents.

Finally, the study that the challenges of drone journalism in investigative journalism range from invasion of privacy, safety issues to operational issues as affirmed by the entire respondents. This finding is in tandem with Carrol (2015) argument that the challenges surrounding the use of drones include safety, privacy, ethical and legal challenges.

Recommendations

1. Drone journalism should be fully adopted into the practice of investigative journalism to enhance timely completion of an issue under investigation.
2. Journalists should be adequately trained to understand how to operate drones as this would go a long way to enhance their work particularly when handling investigative stories.
3. When using drones for investigative stories, journalists should ensure they focus on the issue to avoid invading the privacy of others.
4. Drones should be applied in investigative journalism to enable journalists covering such stories report with pictorial evidence.
5. Drones should be utilized for investigative journalism to help journalists uncover events in restive and hazardous environments.
6. Drones should be fully deployed by media organizations in Nigeria as a tool to uncover the activities of terrorists and bandits in the North Eastern part of the country with a view to help the security agencies arrest the security concerns in Nigeria.

Conclusion

This study concludes that drone journalism plays a significant role in the practice of investigative journalism by a way of minimizing cost, in-depth coverage of issues, timeliness and aerial photography respectively. The use of unmanned aerial vehicles is a welcome development in the practice of journalism particularly investigative journalism based on the capabilities of the technology.

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