



Data Journalism: Placing Content and Practice among Nigerian Journalists

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Abstract

This study attempts to provide the basis for restructuring data-driven reporting among Nigerian journalists by examining its content and practice. Field Theory and Normalization Theory provide the theoretic framework, while focus group discussions by 30 respondents help generate the requisite data. Findings show that Nigerian journalists are not only knowledgeable about the concept of data-driven journalism, but they are also actively engaged as practitioners. Discussants attest to the factuality, verifiability, and reliability associated with data-driven journalism, the challenges notwithstanding. It turned out that its reshaping and sustainability would hinge on two factors. The first is to intensify data-driven journalism training and research. The second is for government to formulate policies or popularize the legislations that guarantee access to data and make data-driven journalism more professional.

Keywords: Data Journalism, Digital Journalism, News Content, Communication, Journalists

Introduction

Data-driven journalism is one of the latest and fastest-growing innovations that have gained

global momentum within the media landscape. Digital technology has been used to restructure journalism practice and

content to regain the confidence and trust of the public or audience. This development means that the facts generated through data journalism are reliable and help satisfy the consumers' curiosity about factual information. Data never sleeps, and with new devices, sensors, and emerging technology, the rate of data growth is rapid in our world today. However, using data to find a story and create visualizations is not new. A few examples from the past two centuries where big stories came from data (Kalatz, Bratsas & Veglis, 2018).

Data journalism is the skill of searching, interpreting, understanding, visualizing, and making data factual. For Marfo (2018), it is "the use of data and numbers in journalism to uncover, better, explain and/or provide context news story." Data journalism is an emerging form of storytelling where the traditional journalistic skills mix with data analysis, programming, and visualization techniques (Nygren, Appelgren & Huttenrauch, 2012; Appelgren & Nygren, 2014). Bounegru (2012) argues that there are currently two communities of people working with data journalism methods; those that call

themselves data journalists and those that belong to the older and more mature computer-assisted Reporting community (Baym, 2015).

Onwumere (2014) asserts that nowadays, complex headlines require supporting information. News media in countries like the United States of America and Britain had, since the mid-2000s, signed-up programmer-journalists to devise data-driven news projects within their newsrooms. Wright and Doyle (2018) cite sources (Rogers, Schwabish & Bowers, 2017; Mutsvairo, 2019), noting that there is a small but significant developing interest in studies that seek to investigate the growing expansion of data journalism in the Global South.

There is an increasing need to source the correct data and carry out the analysis to guide the consumers through the story in a simplistic style. Marfo (2018) asserts that information processing can be done at two levels: (1) analysis to bring sense and structure out of the never-ending flow of data, and (2) presentation to get what is essential to the consumer of the news story (Ferrucci & Vos, 2017).

Objectives of the Study

1. Identify the characteristics of data journalism practice in Nigeria.
2. Determine how data journalism is practiced in Nigeria, and
3. Ascertain the challenges of data journalism practice in Nigeria.

Research Questions

1. What are the characteristics of data journalism?
2. How is data journalism practiced in Nigeria?
3. What are the challenges of data journalism in Nigeria?

Significance of the Study

The study is significant in some respects to scholars and professional communicators. It helps bridge some gaps in literature while investors in digital technology systems can leverage the findings to develop related applications for use. Moreover, regulators get the opportune time with the findings to make policies or decisions that move the industry forward.

Theoretical Framework

The study adopts the Field Theory of Change (FTC). Field Theory of

Change helps one understand the nature of the investigation, which borders on the knowledge, application, and challenges associated with the concept and practice of data-driven journalism. The theory relates to the method adopted - Focus Group Discussion (FGD) – in that, in a group discussion, scholars and practitioners exchange ideas and experiences in their fields of specialization to facilitate learning which this paper is driving.

Furthermore, Perreault and Ferrucci (2021) attempted to answer the question of what digital Journalism is while defining the practice and role of the digital Journalist. Using the interview method (with interviewees selected non-probabilistically), the study sought and established the definitions and practices of digital journalism from scholars and practitioners interviewed. The study was guided by the Field Theory and normalization process, culminating in outcomes similar to this study. Hence, the adoption of the same in this study.

Kurt Lewin's Field Theory of Learning states that human behavior functions in an individual's psychological environment. Developed in the

1940s by a German-American, one of the first pioneers of social and organizational psychologists, Lewin (1947), argues that learning is a relative process in which the learner develops a new insight and changes his old view. Learning is all about the change in the cognitive structure of an individual. This development occurs when a person uses his insight to restructure his life space, including his profession and practice.

The main strength and assumption of the theory is that persistence despite resistance and barriers produces the desired result/goal. Learning to adopt or apply a new idea or innovation will be faced with resistance and challenges. There are two sides to the theory; "approach-approach" conflicts. For instance, as journalists continue with the traditional approach and the modern approach (data-driven approach) to getting factual information or access to relevant data, unwillingness on the side of the custodian of such data or record gets tougher.

However, "avoidance-avoidance" conflicts also present the issue of maintaining the status quo, which poses the danger of

lack of trust and loss of confidence in the news stories, which is even more destructive to the journalism profession as a whole. Hence, the need to continue with the "approach-approach" conflicts to get the desired result. The theory is relevant because the study is concerned with data-driven journalism and the adoption of the same to regain the trust and confidence of media content consumers.

Review of Related Literature

The Emergence of Data Journalism

Data has been used in journalism for hundreds of years and predates newspapers. In the early 1600s, there was a weekly account of deaths and births in London that sold for a few pennies (Rogers, Schwabish & Bowers, 2017). Ben Wattenberg coined the term *data journalism* in the mid-1960s. His work explains the use of narrative with statistics to support the theory that the United States has attained the Golden Age. In 1967, data analysis began as Philip Meyer, the Detroit Free Press journalist, used the mainframe computer and sociological method to analyze Detroit residents' survey and

report his findings. The survey was carried out to explain the riots that broke out in the city in the summer of the same year.

Over the past two decades, the amount of data available for research, communication, and analysis has increased at unprecedented rates. Technological innovation has not only made more sources of data available; it has also made it easier to access, analyze, and share data. Journalists are reshaping them for media organizations to take better advantage of these new sources of information to serve their mission of providing news for consumers with a richer, more accurate understanding of the world (Rogers, Schwabish & Bowers, 2017).

Data Journalism Practice in Nigeria

Steensen and Westlund (2021) state that data journalism is the next best option for news reportage as it will shift the world away from the era of traditional journalism. Although data journalism has not replaced traditional journalism, it recognizes the evolving trends in today's world and the need to utilize facts, figures, numbers, and

other sources of information to make sense of issues or matters arising in the news. In 2017, the United States of America trained 25 journalists in Nigeria in data journalism to aid their work and investigative abilities. The training focused on the tools for data journalism in a digital age. (Premiumtimesng.com, 2017; Wangui, 2018).

In 2019, the News Agency of Nigeria (NAN), in conjunction with the Nigerian Bureau of Statistics (NBS), hosted a workshop themed "Using Official statistics for storytelling in Nigeria." The training workshop was held to actualize the goal of "creating substantive newswire of data-driven news." The essence of the workshop was to explain the relevance of data journalism in Nigeria.

Arguments for Data Journalism
Gray, Bounegru & Chambers (2012) state that:

Journalism is under siege. In the past, we, as an industry, relied on being the only ones operating a technology to multiply and distribute what had

happened overnight. The printing press served as a gateway. If anybody wanted to reach the people of a city or region the next morning, they would turn to newspapers.

This era is over.

They further explained how pioneering journalists had used data journalism to show the occurrences in our environment and their effects on us. Today, when newsrooms downsize, most journalists hope to switch to public relations. Data journalists or data scientists are already a sought-after group of employees, not only in the media. Companies and institutions worldwide are searching for sense makers or professionals who know how to dig through data and transform it into something tangible.

According to Haddad (2019), data journalism is a form of journalism where the interview subject is data. This description implies that data journalism is often platform-independent. The output can take on the form of a map, chart, written article, and even social media posts. Data skills are specialized and require time to

develop; time pressure prevents aspiring data journalists from producing the stories they believe need reporting because there are few economic incentives for media houses to invest in data teams (Steensen & Westlund, 2020).

Ethical Issues in Data Journalism

Kuutti (2016) says, "It is difficult to separate the importance of data from the ethics in data journalism as a whole and compared with other journalistic activities in producing a data story. Ethical problems in a data story are difficult to discern, unlike misspelled interviewee quotes or obvious false information in a story. When credibility suffers, a news organization's ability to survive economically is adversely affected (Peters & Carlson, 2019; Semiu, Adejola & Folarin, 2012). Ethical code is a *sine qua non* in the journalism profession. Journalism today faces an increasing need for critical reporting, accuracy, fairness, and objectivity" (Uja, 2016; Ferrucci, Taylor & Alaimo, 2020).

In data journalism, it is not a simple task to get the fact and figures right when telling the final

story. Uja (2016) further explains, "The high turnover of data and amount of data in public domain requires journalists that can mine, process and present stories that not only have an impact but conform to the highest ethical standard."

Mcbride (2016) states that data journalism is a growing trend that offers journalists new and exciting ways to tell stories. Data journalism has grown alongside the burgeoning computational technology industry, but similar gains have not followed these massive gains in technology in data journalism scholarship and education. Sunne (2016) states that the ethics of journalism - do not break laws, do not lie, lessen harm - apply to data use.

Methodology

The qualitative research method is employed to anchor the study. Focus Group Discussion (FGD) is used to elicit the primary data. Five groups of six practicing journalists, comprising 30 discussants, participated in the discussion. The interaction with the discussants helped generate the demographic data such as the name, sex, age, state, and

occupation of each participant in the discussion. The purposive sampling technique was adopted to select the participants drawn from Nigeria's six geopolitical zones.

Focus group discussion was used for this study because the research focused on a specialized area (data-driven journalism) which requires the knowledge and experience of specialists to discuss the social issues involved. In other words, the perceptions, beliefs, attitudes, and the complex personal experience of the participants in the conversation are required to produce the appropriate result.

Data Analysis and Results

The subject matter of the study covers both the professional and the geopolitical zones to give a fair representation of the various parts of Nigeria, as the research is meant to cover the whole country.

The demographic details indicate their various states of origin and where the participants practice journalism or where they are residents and practice journalism. The first table below shows the participants' demographic details.

Table 1: Demographic Details of the Discussants

S/ N	Sex	Age Range	State of Origin	Occupation
1	Male	40 – 50	Lagos	Broadcast Journalist with TVC News
2	Female	30 – 35	Ogun	Journalist with Thisday Newspaper
3	Male	35 – 40	Abuja	Journalist with The Sun Newspaper
4	Male	30 – 40	Imo	Journalist, The Nation Newspaper
5	Male	45-50	Cross River	Journalist with Punch Newspaper.
6	Male	55 – 60	Akwa Ibom	Journalist with Punch Newspaper
7	Female	23 – 25	Benue	Freelancer with Nigeria Info (95.1) FM
8	Male	45 – 50	Bauchi/ Gombe	Broadcast with Radio Nigeria
9	Male	50 – 60	Kano	Journalist with Daily Trust Newspaper
10	Female	25 – 35	Maiduguri	Broadcaster with Viable TV
11	Male	50 – 60	Delta	Journalist with Channels Television
12	Female	35 – 40	Ondo	Journalist with Arise News Television
13	Female	35 – 40	Taraba	Broadcaster and Online Journalist
14	Male	50 – 60	Edo/Lagos/Ab uja	Journalist with Freedom Watch Newspaper
15	Male	24 – 30	Niger State	Journalist (self-employed).
16	Female	26 – 30	FCT, Abuja	Journalist with CBN
17	Male	35 – 40	Sokoto	Journalist with Guardian Newspaper
18	Female	36 – 40	Edo	Media Practitioner with CBN
19	Male	39 – 40	Abuja	Media Practitioner with CBN
20	Male	52- 60	Benue	Media Practitioner; Benue Television
21	Male	40 – 50	Kano	Broadcast Journalist with Arise News
22	Female	45 – 50	Oyo/Abuja	More than 10 years of experience; NTA
23	Male	27 – 40	Rivers State	More than 5 years of experience; AIT
24	Female	25 – 30	Anambra	Journalist with NTA
25	Female	35 – 40	Kwara	Broadcast Journalist with MAX FM Radio, Abuja
26	Male	40 – 50	Katsina	Broadcast journalist with Channels TV
27	Male	36 – 40	Oyo	Print journalist with the Punch Newspapers
28	Male	30 – 40	Bauchi	Nasarawa Broadcasting Service (NBS), Keffi.
29	Female	45 – 55	Imo	Journalist with Plateau TV, Jos
30	Male	35 – 40	Yobe	Journalist with NTA Yobe

The second table shows the statistical analysis of the demographic data of the discussants.

Table 2: Demographic Analysis of the Discussants

Characteristics		<i>f</i>	%
Sex	Male	19	63.3
	Female	11	36.7
	Total	30	100
Age of Discussants	18 – 30 years	9	25
	31 – 40 years	16	53.3
	41 – 50 years	2	6.7
	51 years and above	3	10
	Total	30	100
Occupation of Discussants	Employed	26	86.7
	Self-employed	4	13.3
	Total	30	100

Results

Q1: Nigerian Journalists' Awareness of Data-Driven Journalism

The discussants all affirmed that they are aware of data-driven journalism and practice data journalism. Discussant 5 in FG 4 states, "Yes, I am aware of data-driven journalism." This statement appears to be the standard answer among the discussants, as others responded by saying "yes." It is proof that the discussants were purposively selected for the study.

On "how it is being practiced," most participants have very similar responses addressing the study's second objective. FG 1 (focus group 1), D1 (discussant 1) states:

"During the conceptualization stage, I research the horizontal and the vertical comparison of the issue and represent them through infographics using outfight figures, graphs, charts or symbols."

Q2: The Origin of Data Journalism in Nigeria

The discussants had diverse views and opinions about the origin of data-driven journalism in Nigeria. Some participants said, "during the last decade" (FG 5, D4). In the view of this participant, data journalism became prominent during the last decade. Another participant who is very frank about her idea of the origin of data-driven journalism states:

Specifically, I can't say when DDJ started in Nigeria, but I recall that as of 2015, journalists in Nigeria were already beginning to report the dearth of data and information in many areas, and this advocacy led to the demand for Freedom of Information Act that was later passed into law. Prior to this time, journalists' access to information was more cumbersome.

This response explains why many of the participants and journalists in Nigeria cannot state the precise time it started. Instead, they became more conscious of the practice of data-driven journalism when the agitation for access to relevant data and or information became heated, and the advocacy ascended to the seat of

power, legislation, and justice in the society.

Q3: Meaning of Data Journalism

During the discussion, participants approached the question differently, although they seemed to say the same thing in diverse ways. D3 (Discussant three) in FG 2 (Focus Group two) states:

DDJ is factual journalism, evidence-based journalism backed up with reliable data, and not armchair journalism or hearsay or speculative journalism. It is solution-driven journalism, as it seeks to present the fact of the matter against the assumption of the populace or the audience.

Another exciting response from G5, D1, states that:

Data Journalism is a form of storytelling that uses data to analyze a trend or phenomenon. It could be sourced from open sources available to the public or from requests from the public records, which might need the deployment of FOI (Freedom of Information) or even leaked materials.

This response implies that information or data can be obtained

from sources that are not restricted. That is, such data or information is available on the internet/online, in documents, or any means through which data can be accessed.

Q 4: Nigerian Journalists' Practice of Data-Driven Journalism

All the participants confirmed that they practice data journalism in one way or the other. They proved this through the different ways they responded to the question. Some of the discussants in FG 1 (D1-D5); FG2 (D2 & D4); answered by saying "yes."

Q 5: Content of Data-Driven Journalism in Nigeria

From the discussion, the content of data-driven journalism should be the same everywhere it is practiced. Also, depending on the area in which the data is retrieved and analyzed, there should be a very high level of similarity in the content of the data journalism as captured by D3 (Discussant 3) in FG1 (Focus Group 1):

It is not limited to Nigeria. Anywhere it is practiced, data-driven journalism requires concentration and thorough analysis. The content is mostly filled with figures. On another front, data-driven journalism seems to be mainly for experts in the field of discussion. It is

not a general interest type of reporting. So, the content differs.

Unlike conventional reporting, data-driven reporting requires a deeper concentration and investigation of the issues involved, particularly the authenticity of the data employed. It requires digging deep into the issues in focus and setting the correct parameters for presentation. It requires thoroughness in both investigation and presentation.

Q6: Merits of Data-Driven Journalism

Although the participants approached this discussion section differently, the central idea is the same. The common idea is encapsulated in the responses of the FG 4 D6 and FG 3 D5:

It promotes the accuracy and keeps policymakers on their toes. It reduces sensationalism and improves objectivity in reporting. It also improves the credibility of the news story. Data Journalism reaches far and wide. The findings of data journalism are always reliable and factual. This is because the stories are not based on hearsay. If correctly done, it gives proper and measurable

perspectives to issues, particularly about the economy and the demographics - issues that drive growth and development. It helps in correctly appreciating the state of affairs and for proper planning, monitoring, and evaluation. It provides new storytelling approaches, helps journalists query or question data figures, and combines statistics and storytelling. There lies the future of journalism as it enables journalists to provide independent interpretation and analysis of official information.

It simplifies complex phenomena and helps broaden the story's perspective through research. When correctly done, it gives proper and measurable perspectives to issues, particularly about the economy and the demographics – issues that drive growth and development. It also helps in proper and adequate appreciation of the state of affairs and for proper planning, monitoring, and evaluation. Suitable for story presentation. Reporting business reduces words to

graphs for easy understanding and comparisons. It is uninfluenced primarily by sources since you do not need to interview anyone - the data comes ready-made.

Q7: The Challenges of Data Journalism in Nigeria

All the participants affirmed that they encountered challenges while practicing data-driven journalism. FG5, D3, D4; FG4, D1, D6 State:

The immediate challenges would be the source of credible information and proven data. The unreliable nature of otherwise relevant institutions is a significant challenge. A piece of information is as good as the source. In Nigeria, figures are thrown about by institutions that claim authority in specific fields; such information might not be reliable. For instance, figures about disease fatalities are often outrageous, and a collation of all the figures bandied about by the various agencies in respect of the several disease types may outstrip the entire population of the entity referred to.

Different sources have different figures because they might have conducted their research based on vested interests. These have severe implications in reporting and are a significant drawback to clinical and credible reporting.

The responses of the discussants showed that it is challenging to access some information which stems from a lack of cooperation from public officials. The other aspect of the challenges includes the lack of data, perhaps one of the biggest challenges Nigerian journalists face in the practice of data-driven journalism.

Q8: Enhancing the Practice of Data Journalism in Nigeria

Discussants highlighted some suggestions on how data-driven journalism could be practiced optimally and sustained in Nigeria.

Just like every other endeavor, diligence can take care of the challenges; but that would put the journalists on the track of both sourcing for and analyzing data for use in reporting. Except for those trained for such reporting, journalists might not have the competence, particularly in specialized areas. Data-driven

journalism helps in planning, monitoring, and evaluation. It is a veritable branch of journalism that helps in policy analysis and decision-making for the planning and execution of development tasks. It is a genre that should be encouraged, given its beneficial potential for growth and development. However, it hardly would be able to thrive in an environment where activities of specialized agencies are not trusted to give their due in respect of credible outputs.

One of the critical issues raised during the discussion was the need to include data-driven journalism in the curriculum of journalism training in the country.

Discussion of Findings

The study addresses three objectives centered on the Nigerian journalists' knowledge and the challenges of data-driven journalism. Objective one sought to investigate the characteristics of data journalism in Nigeria; the participants' responses from the different states of the geopolitical zones in Nigeria showed that although data journalism became prominent within the last decade, it is being practiced by all the participants in the discussion. Data journalism's characteristics include comparing

issues, infographics, figures, charts, symbols, and statistical information, among others. These agree with Felle et al. (2015) position that visualization, statistics, and infographics characterize data journalism. (Hamilton & Turner, 2009) also validate this assertion in their argument that data journalism is a kind of workflow characterized by analysis, visualization, and storytelling.

The study's second objective was to examine how data-driven journalism is practiced in Nigeria. The outcome of the discussion indicates that Nigerian journalists follow the data-driven journalism process of the inverted pyramid model. Their responses center on the conceptualization of the news idea, research, access to the relevant data for the news story, and filtering and analyzing the data to make sense of the issue being raised. This ramification does not leave out the final stage of communicating the result of the data analysis to the audience with a high level of accuracy. The other issue relating to the practice is the concern about the code of ethics; the participants also mentioned this when they discussed collaborations with others to make the story *pop*.

This development is in line with some authors' (Deuze & Witschge, 2020) affirmation that you cannot make your piece *pop* without

data-driven journalism in the 21st century. The affirmation shows that working alone in data-driven journalism is unacceptable; there is a need for "cross-border cooperation" among journalists, media organizations, and all the information dissemination stakeholders in the contemporary digital technology era. These also validate the two theories by Kurt Lewin (2007b) that anchor the study; Field Theory which centers on the "approach-approach" technique as well as the "avoidance-avoidance" method, the choice and commitment to these techniques make all the difference.

The third objective of the research was to identify the challenges Nigerian journalists encounter while practicing data-driven journalism. The result of the discussion indicates a plethora of challenges encountered in the practice of data-driven journalism. This outcome validates the assumptions of the Field Theory vis-à-vis the Normalization Theory by Kurt Lewin (2007b). Ethical issues form part of the challenges, as asserted by Kuutti (2016), "It is difficult to separate the importance of data from the ethics in data journalism as a whole and compared with other journalistic activities in producing a data story." The implication is that ethical problems in a data story are difficult to discern, unlike misspelled interviewee's quotes or some other

challenges of obviously false information in a story.

Conclusion

There is a significant relationship between conventional journalism and data-driven journalism. This relationship exists and should continue because while data-driven journalism is concerned with turning data into factual and verifiable news stories, the code of ethics of journalism practice and content should be upheld. Data journalism exists, and it is as old as journalism itself. It appears that the audience and journalists became conscious of it when advancement in digital technology became its primary driving force. Data is the driver of journalism. Every good story flies on the wings of data. Therefore, it is safe to state that there is no journalism without data.

However, it is what a journalist does with the data he has access to that matters. Furthermore, every data has a storyline embedded in it. Every data has a packaged story waiting to be identified, unpacked, and repacked by a nosy and undaunted news hunt.

Data-driven journalism is one of the latest innovations that are gaining momentum within the media landscape globally. Digital technology has been used to restructure journalism practice and content to regain the confidence and

trust of the public or audience. The facts generated through data journalism are reliable and verifiable, satisfying the consumers' curiosity about factual information that can be verified. Against this backdrop, this study is undertaken to investigate whether or not journalists in Nigeria practice data journalism and how data-driven journalism has reshaped journalism practice and content in Nigeria.

Recommendations

Based on the findings, the study recommends as follows:

- 1 Provide regular training and retraining of journalists in the field and journalism students in institutions of higher learning;
- 2 Media organizations and practitioners should encourage good ethical practice, especially fairness and objectivity;
- 3 Policymakers in Nigeria should improve on open access to data;
- 4 Communication and media scholars should advance advocacy for open access to data and freedom of information;
- 5 All Government Ministries, Departments, and Agencies (MDAs) should have up-to-date, functional, and accessible repositories and databases.

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