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Exploring Audience Engagement Strategies of Data Journalism Practices in Nigerian Online News Media
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EXPLORING AUDIENCE ENGAGEMENT STRATEGIES OF DATA JOURNALISM PRACTICES IN NIGERIAN ONLINE NEWS MEDIA

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ABSTRACT

Despite the growing momentum of data analysis in Africa, scholarly attention has largely overlooked the promotion of data-driven content for enhanced audience engagement. Grounded in the sociology of news paradigm, this study examines engagement practices of online news platforms in Nigeria and explores the potential influence of audience engagement metrics on editorial decision-making. The in-depth interview research method was adopted for the study. Heads of data journalism units in four purposively selected online news media platforms in Nigeria with established data journalism practices were sampled as respondents for the study. The study identifies six innovative strategies being adopted by online news media in Nigeria to enhance audience engagement. Findings also confirm the centrality of audience engagement metrics to news-making decisions, but with the understanding to also consider the potential societal impact of stories in determining issues to produce data-driven content on. The implication for data journalism practice in Nigeria and its positioning for greater societal impact is discussed.

Keywords: data journalism ▪ audience engagement ▪ engagement strategies ▪ online news media ▪ artificial intelligence ▪ Nigeria

1. INTRODUCTION

Journalism entails information gathering and reporting on the activities of society, providing necessary information and knowledge for the citizenry to make informed decisions, stimulate public discourse, and drive policy formation (UNESCO, 2022). As the bedrock of democratic societies, journalists serve as societal watchdog, acting in the overall public interest by holding public officials to account while granting media access to audiences to express their views (Oso, 2012). The audience is an important component of information flow in journalism practice, often the prime target of journalism content. The digital revolution further enhanced audiences' relevance in the news production and dissemination process, with news media organizations

increasingly gauging their continuing relevance and sustenance based on audience acceptability (Meijer & Kormelink, 2019). The extent to which they access and engage journalism content tend to enhance journalism potential in achieving public good.

Data journalism lends credence to journalism practice by building public trust in media reports. It reduces perceived subjectivity in general reporting based on assumptions, allowing authentication of claims with verifiable facts in public data. Lewis (2021, p. 86) explores various aspects of data journalism, defining it as "the primary reliance on numerical evidence as a journalistic tool in detecting patterns, or the visual representation of numerical evidence to enable audiences to discern patterns". Lewis's definition emphasizes the need for data journalism output to be centered on providing information to the audience through a clear presentation of patterns in data. Bradshaw (2024), however, cautions against limiting the contextualization of 'data' in 'data journalism' only to numerical data noting it can be applied to varied forms of structured information on the public and in very diverse areas of human endeavors. Regardless of the data information being reported, huge effort is exerted into producing data-driven journalism content to ensure that available data is appropriately collated, cleaned, analyzed and presented in the most appropriate format for easy public understanding (Martin et al., 2022). With the rigor in producing data-driven journalism content, it is expected that such content reach wide, attracting high public engagement among relevant stakeholders. Journalists and other newsroom personnel who have invested enormous resources in producing data-driven reports would expect such content to attain maximum audience reach and stimulate public engagement for desired societal impact.

However, reaching the audience can be complicated in an age of information overdose where various contents compete for the audience's attention online. Promoting data-driven journalism content is particularly important due to the technicalities involved in story presentation which may not be so palatable to the general audience. Data journalism is essential for promoting accountability in governance and across all sectors of public relevance. Over the years, the wide adoption of data journalism in many developing countries has been hampered by a lack of relevant and up-to-date data (Kenya, 2019). Efforts are ongoing to strengthen the penetration of data journalism in developing countries of the world through capacity building of newsroom personnel, collaborations among journalists, and increasing availability of public records for public scrutiny (Internews, 2018; Martin et al., 2022).

The situation is not any different in Nigeria, where journalists often identify a lack of relevant data as a major inhibiting factor to producing data-driven stories (e.g., Ugbede, 2024). Efforts are also ongoing in the country to address the data challenge. Nigeria's National Bureau of Statistics (NBS) has improved its capacity to provide insightful data on the country's diverse socio-economic indices, offering regular updates on public data on its website as soon they become available. Some organizations, and coalitions of journalists and civil society groups such as BudgIT, Code for Africa, *Dataphyte*, etc. are also rising to the challenge to meet journalists' demand

for public data through the digitisation of public records by gathering, processing, and publishing previously unavailable data wherever possible, while also supporting government in the open governance drive increasingly being promoted for public accountability (Abdullah, 2021; Owolabi & Adeniran, 2023). Nigerian journalists are being provided with requisite data journalism skills to enhance their data journalism practice through training from local and international media organizations, with collaborations from digital and technology companies, and relevant government agencies (Akinfemisoye-Adejare, 2019; Okocha & Odeba, 2022). The trainings are often done with donor funding (Otoibhi, 2023), with support from local and international government agencies (Okocha & Odeba, 2022).

These efforts appear to be yielding results as more data journalism platforms and units are established within existing newsrooms in Nigeria (Ugbede, 2024). Few media organizations are increasingly publishing well researched data driven stories to tell the Nigerian story (Okafor, 2019). The reach of this data-driven content remains unclear as media organizations in the country often shield such information from the public. However, it is most likely they are not achieving maximum reach, barely generating just a few thousand clicks. In Nigeria's fast-paced, competitive, and turbulent media environment, many online news media platforms have emerged in recent times, but most often resort to poor quality journalism and sharp practices to attract audience attention (Idris, 2020). Hence, quality journalistic content, such as data-driven stories, compete for limited audience attention in an online news media environment where gossip and entertainment stories hold sway (Knepple, 2022).

These factors tend to limit the potential of data-driven stories to drive public agenda, promote accountability, make an impact, and stimulate necessary changes within society. Despite challenges hindering the penetration of data journalism practice in Nigeria, few online news platforms are championing data journalism practices, producing high-impact, data-driven stories. Although some traditional broadcast and print media organizations sometimes produce data-driven content around specific national and socio-economic issues (e.g., politics, health, economy), data-driven journalism is more entrenched in a few trail-blazing online news platforms committed to quality and accountability journalism in the country.

There is no doubt that efforts in entrenching data journalism practice in Africa deserve scholarly attention to better understand its dynamics across the continent. Unfortunately, published studies on data journalism practices in the region have been minimal (Sackey et al., 2022). Previous studies have focused on journalists' data skills, and perception of their data journalism capabilities (Gondwe & White, 2022; Okocha & Odeba, 2022; Ugbede, 2024); adoption, prospect and challenges in data journalism practices (Martin et al., 2022; Okafor, 2019; Ugbede, 2024); and analysis of data-driven content (Akinfemisoye-Adejare, 2019; Munoriyarwa, 2020). None examine the data-journalism audience nor their influence on data journalism practices. Sackey et al.'s (2022) review of related studies on data journalism also failed to acknowledge the exclusion of the audience in studies on data journalism practices,

but noted a seeming preference for print media in data journalism scholarship in Africa.

This study extends the frontiers by focusing on online media and their efforts in increasing audience engagement with their published data-driven content, while examining how such drive for greater audience engagement subsequently influences their data journalism practices. To achieve this aim, heads of selected online news platforms, with significant data journalism practice were interviewed using the semi-structured in-depth method. The following section provides a brief review of literature exploring the significance of audience engagement and tracked metrics to contemporary media practice, specifically in data journalism. It explores the sociology of news paradigm as a supporting framework to investigate the potential influence of audience engagement metrics on the editorial decision-making process in data journalism practice, leading to the formation of two research questions that guided the study.

2.   LITERATURE REVIEW

Media practitioners are increasingly interested in understanding their audiences and how they engage with media content. Such information have implications for content creation and editorial decision-making, advertisers and other stakeholders, (Idris, 2020; Nelson 2018). Over the years, print and broadcast media practitioners have relied on gathered information on their audiences to promote their platforms to advertisers and also influence content output to suit their respective audience demographics (Broersma, 2019). The digital media environment offers new opportunities to track and measure audience characteristics in real-time, not by audiences' claims on how they consume media content but by tracking their digital interactions on published content. Almost all media organizations now have an online presence facilitating the assessment of user engagement for every individual accessing media content online through generated "online behavior metrics" subsequently utilized in editorial decision-making (Broersma, 2019, p. 2).

Audience engagement has been described as an "aspirational buzzword" with contested meanings but is increasingly touted as a key criterion for measuring the success or failure of journalism (Nelson, 2018, p. 528). Generally, it suggests the extent of users' interaction with media content. Broersma (2019, p. 1) describes audience engagement as "the cognitive, emotional, or affective experiences that users have with media content or brands", noting it "denotes an active and intentional orientation toward what users read, view, or hear. Audience engagement is conceptualized in this study to describe varied ways by which media audience experience and interact with published news content in varied formats and across varied platforms possible. This spans beyond content disseminated via the news media platform or websites, including newsletters delivered via emails and varied content shared on social media platforms, and all avenues created for audience interaction with published content.

Scholars have explored audience engagement from varied perspectives, with significant attention paid to the potential of audience metrics in sustaining journalism (Nelson, 2018). For instance, Nelson (2018) conducted an ethnography on an audience engagement firm, *Hearken*, which services news media organizations. His findings noted prevailing ambiguities in the definition and measurement of audience engagement within the news media industry, making it impossible to sufficiently quantify inherent gains. This, he noted prompted *Hearken* to focus on appealing to clients' intuition, who then hope for some benefits from the firms' interpretation of their audience engagement metrics. Olmstead et al. (2011) explored the dynamics of audience engagement to examine how people get linked to news pages they visit, and their exit. Möller et al. (2020) examined the navigation routine of online news consumers, exploring the navigation sequence of users in interacting with news content.

In contemporary news media practice, media practitioners often base the success or failure of journalistic content on audience metrics rather than real-time societal impact (Knepple, 2022). Audience metrics can, however, generate unexpected outcomes. Notably, increased content posting may not necessarily translate into greater engagement, as audiences appear to engage more with content that resonates with them (Ferrer-Conill et al., 2023). Data journalism is one aspect of journalism that focuses on using data to tell stories. Data-driven journalism content tends to produce content with greater societal impact and audience engagement even in societies where the practice is not yet widespread (Internews, 2018). Data journalism is a rigorous endeavor requiring requisite but scarce skills. Hence, data-driven content, when eventually produced, should attract greater audience attention, evoke appropriate reactions to drive public discourse and achieve greater societal impact (Green-Barber, 2021).

Data journalism tends to be audience-centered, presenting journalism content to the audience with a higher level of credibility, and allowing them to interact with published data using varied visualization techniques (Bradshaw, 2024). Audience engagement is thus at the earth of data journalism practice with content often designed to be interactive for users. Therefore, understanding audience engagement with data journalism content enables practitioners to "maximize its (data journalism) positive impact and demonstrate its value to audiences" (Green-Barber, 2021, p. 247).

Few studies have explored the relationship between audience engagement and data journalism, particularly how audience engagement can transcend tracking metrics to enable collaboration in creating data-driven "stories with social impact and a global reputation" (Palomo et al., 2019, p. 13). Michalski (2016) examines the degree of audience engagement and integration in two related data-driven projects by *The Guardian* and *The Washington Post* on police killings in the United States. His detailed case study provides an empirically driven description of the extent and nature of audience engagement with these projects. A more recent study by Martin et al. (2024) explores journalists' motivations for audience engagement and their

strategies for integrating audiences into journalistic practices. These studies suggest an increasing expectation and facilitation of audience engagement with data-driven media content among media practitioners.

Generally, the relationship between audience engagement and data journalism has received little attention in studies on data journalism, which mostly focus on the practices and capabilities of practitioners, leaving a significant gap in audience reception studies (Sackey et al., 2022). This study examines the dynamics of audience engagement metrics related to data journalism practices in Nigerian online news media. Premised on the sociology of news paradigm, it investigates the efforts of selected online news media platforms with established data journalism practices to promote published content and enhance engagement, and how extracted metrics on audience engagement impact editorial decision-making.

The sociology of news paradigm proposes examining the "social process by which journalists decide what is news and the social forces that influence or limit how journalists gather and assemble news from raw materials into a journalistic product" (Berkowitz, 1997, p. xii). It explores issues around journalists' selection of information to report as news, and the intervening variables influencing what is eventually presented as news content to the general public. In relation to this study, data-driven content tends to engage readers by presenting otherwise complex information in ways that are more relatable. Therefore, data journalists need to balance audience information needs with other news determinants in their editorial decision-making on what issues to focus on and publish data-driven content about. The sociology of news paradigm thus guides our examination of how online news media organizations in Nigeria seek audience engagement for their data-driven content and how generated feedback influences future production and dissemination of such content.

Hence, this study explores the audience factor in the data journalism editorial decision-making and seeks to understand the extent to which audience engagement data and practices determine issues data journalists in Nigerian online news media focus on. What efforts do online news platforms in Nigeria put into the dissemination of data-driven content, and how do audience interactions on published content influence content creation and dissemination. This becomes pertinent as studies on data journalism in Sub-Saharan Africa (Akinfemisoye-Adejare, 2019; Gondwe & White, 2022; Martin et al., 2022; Munoriyarwa, 2020; Okocha & Odeba, 2022; Sackey et al., 2022; Ugbede, 2024) have overlooked evaluating audience role in producing data-driven content. This study thus sought to answer the following questions:

RQ1: How do Nigerian online news media build readers' interest in data-driven content?

RQ2: To what extent do audience engagement metrics influence data journalism editorial decision-making among Nigerian online news platforms?

3.   METHOD

This study is designed as a descriptive and exploratory study due to limited literature on the topic within the study area (Swann, 2023). It adopts the in-depth interview method to examine audience engagement practices on data-driven content by Nigerian online news media. Four online news media platforms reputed for producing quality and original data-driven reports are purposively selected and sampled for the study. They include *Premium Times*, *The Cable*, and International Centre for Investigative Reporting (*ICIR*) and *Dataphyte*. The first three listed platforms are general news platforms with fledgling data journalism desks/teams producing regular data-driven reports. These organizations are reputable online news platforms that have earned accolades for fearless and independent reporting in a saturated online media space proliferated with news aggregators mostly feeding on content produced by established news organizations (Adepetun, 2017). *Dataphyte* is a more recent addition established in 2020 as a wholly data-driven news media platform committed to exploring issues with data-driven insights.

   The heads of the data journalism team from the sampled organization were interviewed for this study to provide insights on online media audience engagement practices for data-driven content. When the editor was not available, a representative from the data journalism team was interviewed instead. The team lead or any data journalist closely involved in the team's operations was considered a suitable respondent, as the focus was on the platform's operations rather than individual perceptions or activities. Interviewing multiple team members was unlikely to yield additional insights, as respondents were clear about the information they could share. However, two respondents were interviewed from Premium Times due to identified gaps in the responses of the initial respondent. The lead editor was later interviewed to provide further insights into the organization's practices, thus filling those gaps.

   In total, five respondents were interviewed; three team leads and two senior data journalists, consisting of four males and one female. The interviews took place between February and March 2023, coinciding with Nigeria's general elections period, influencing respondents' references to data-driven election coverage in the interview excerpts. Each session lasted between 15 and 30 minutes. Respondents were anonymized, but their organizations were not, to highlight their unique characteristics. Interview excerpts were attributed to respondents based on their organizational affiliations where necessary

4.   FINDINGS

Findings from the in-depth interviews are thematically analyzed and presented in themes in this section. The themes explore organizational commitment to data

journalism practice, audience engagement practices, and influence of audience metrics on editorial decision-making.

4.1. Commitment to Data Journalism Practice

Findings from the study suggest that data journalism practices are deeply ingrained across the sampled organizations. Respondents confirmed that their organizations have dedicated data journalism teams, which regularly publish data-driven content inspired by contemporary issues and available data to highlight, validate, debunk, or substantiate the current state. Respondents affirmed their organizations' commitment to data journalism practices. For instance, the respondent from *Dataphyte* describes his organization as,

> … the leading data-driven media organization in Nigeria and Africa. We go deep into analyzing data and contextualizing it. We also use data to expose corruption, demand accountability, indicate key issues that need the attention to policymakers, and offer explanations in-terms of explainers about what demand accountability, indicate key issues that need attention from policymakers and offer explanations in terms of explainers about what data may be saying.
>
> Respondent @ *Dataphyte*

According to respondents, in considering topics to produce data-driven content on, they focus on contemporary and "topical issues, bothering on the economy, climate change, governance, health, security" etc., "that tend to invoke the most reactions from Nigerians… (with) serious policy implications". They all expressed commitment to providing data-driven content audiences can readily understand and relate with for a better understanding of pressing public issues while "using data to amplify the voices of the underserved."

4.2. Audience Engagement Strategies

Respondents reported adopting different strategies to widen the reach and engagements on published data-driven stories.

Compelling Storytelling Techniques
Respondents noted a dearth of data journalists producing data-driven content, alongside audience apathy in consuming data-driven content. This necessitates data journalists to present their content in very compelling and simplified manner to ease audience understanding and sustain their interest.

Data is regarded as being boring by most people, so we try to humanize the data... we try to make the story as relatable as possible. From the lead of the story, we are drawing you with something catchy... engaging before you even start to see the data embedded in the story. If we are using the infographics approach, we ensure that we use very captivating graphics ... design it in such a way that it will bring the attention of the readers on first notice.

<div align="right">Respondent @ The Cable</div>

We are intentional in putting our readers in mind...We understand that this is data journalism, and having this in mind guides how we write the story, how we make it easier and fun to read, how we make the visualization, and how we don't disturb people with data. I mean, we are in Nigeria, and life is hard already. Don't make it harder with data when people are reading the story. Also, we understand that people no longer have a large attention span, too... So we put all these in mind to ensure that we have more engagement on data stories.

<div align="right">Respondent @ Dataphyte</div>

Humanizing Story

Respondents agreed that data stories anchored in personal experiences tend to resonate with audiences and capture their attention. They stressed the importance of situating data stories within everyday contexts, thereby humanizing the narrative. To achieve this, they often focus on linking data to individuals' lived experiences, making reported stories relatable to the average reader. According to one respondents,

Sometimes you have data, you analyze the data, you finish sorting and everything, but then you find out there's no story because you cannot link it to a human angle to be able to tell their story, then there's no story... If it's something people are interested in...data people want to know. If you link it to people, if you find the human aspect to it, people automatically become interested.

<div align="right">Respondent 1 @ Premium Times</div>

Visualization is a Key

Respondents noted the importance of visualizations in driving audience engagement of data-driven content, enabling easy sharing and facilitating constructive dialogue among the audience. They disclosed that effective data visualizations on contemporary issues tend to capture audience attention and stimulate engagement on topics that might otherwise be overlooked.

> People tend to get bored with numbers, and statistics. So, to sustain interest, you have to do visualization... charts, Infographics, interactive maps, etc... So when data is visualized, it aids understanding, it enhances comprehensibility, so people tend to appreciate that, and that sustains their interests... It drives more people to view, to read.
>
> <div align="right">Respondent 2 @ Premium Times</div>

Data visualization is increasingly being used in the media to report on germane societal issues to drive public discourse, as evidenced in the coverage of elections and the COVID-19 pandemic. According to respondents, Media coverage of Nigeria's 2023 general elections was closely monitored by Nigerians and the global audience as media organizations published various visualizations on election-related data, which were regularly updated and presented to engage the audience and update them on relevant pre/post-election data. Respondents noted that the high audience engagement on the data-driven coverage of Nigeria's 2023 general elections portends a good omen for data journalism content in the country.

> There are circumstances that you have huge audience engagement for data-driven content. Like this season of election...People wanted to know the number of registered voters in the country, which state had the largest number of registered voters, which had the least, which states had the record of voting in millions which had the record of low voters' turn out... So imagine if what we are doing is just to write stories to say this candidate has won this state with 700 or 950 thousand votes. This is how people voted. So if you are writing a story and giving out these numbers of 18 candidates, what scores did they get in this state? ... How many people will have the time to read such? They won't. But through data visualizations, you can have your data (at a glance), the stories are there, you are just telling it in a data format, and you've gotten your audience engaged, and it has gone far than you can imagine.
>
> <div align="right">Respondent 1 @ Premium Times</div>

Online Content Promotion

To drive readership and build audience engagement, respondents noted promoting data-driven stories and accompanying visualizations on various platforms as appropriate. The content is usually disseminated through their respective websites, SM handles, newsletters, etc. Twitter appeared to be the most favored platform across sampled organizations, even though respondents noted the uniqueness of each platform in promoting specific kinds of content. This was aptly rationalized by respondent from *The Cable* thus,

> I say Twitter because, Twitter has an audience that is more interested in conversations, more interested in engaging content that you put out, as opposed to other platforms. Yes, more Nigerians are active on Facebook, but they are less likely to engage data infographics on Facebook than on Twitter. Facebook is more of a familiar setting where people want to talk about things that they are up to...It is similar to Instagram... So yes, Twitter is the platform because of the nature, and the habits and preferences of the audience there.
>
> Respondent @ *The Cable*

The selected organizations boast a substantial online presence, with a large following across various social media platforms, enabling them to extend their reach beyond their news websites. All sampled platforms leveraged Twitter, Facebook, WhatsApp, and email to promote their content. Additionally, they are exploring other platforms like Instagram, LinkedIn, TikTok, and YouTube to expand their audience reach and tap into the potential of these platforms to engage diverse audiences with data-driven content.

> We are very active on Twitter, Instagram, Facebook, and LinkedIn. We are coming up with more activity on social media, even TikTok...We understand that the generation we have now youths mainly youth and many youths are on social media. We also have older people on social media, so it is an ample way for us to reach them and sell the kind of journalism we do.
>
> Respondent @ *Dataphyte*

> We do heavy promotion on social media; we use Facebook, Instagram, Telegram, and YouTube... Recently, we started making videos from our infographics. We had done an explainer infographics about the manifestos of the presidential candidates. It was published as Infographics, but we realized we could get more eyes on other platforms, so we decided to make it into a video format using the same infographics, just putting audio and some music background. So, we keep thinking of new platforms to use; we've started TikTok, too, to amplify some of the things that we do. So majorly, we understand that social media is where the new generation is, even the old generation, they are all moving to social media, so, we meet them there...Another platform we use is Whatsapp, people underestimate the importance of WhatsApp. It is probably the most populous platform for sharing fake news and that says a lot about how much time people spend on the platform.
>
> Respondent @ *The Cable*

Strategic Content Release
Respondents reported adopting strategic dissemination of published data-driven

stories. Such stories are reportedly presented in appropriate formats suitable for the planned disseminating platform. Among adopted strategies include summarizing key points of published stories into "snackable bits" for easy dissemination on various social media platforms. To achieve this, core facts are summarized and visualized in aptly designed infographics, charts, maps, etc., and published as *data cards*. Respondents also noted producing short promotional videos, threads, etc., often accompanied by a link to the full story on their respective websites for seamless sharing across social media platforms.

> We have an amplification strategy across all platforms and the different social media we use. For all the ones we use, there's always a strategy. So, when we have a story, we focus that story to fit on the platform. What works well for Instagram will likely not work well for Twitter. For instance, if you do a thread, you should know that a thread will only work based on Twitter. So, if you want to send that same content on Instagram, you should know the best thing you should be thinking of to drive it is individuals...So, what we do is understand each platform and know the best way to reach it.
>
> Respondent @ *ICIR*

The organizations have also developed innovative strategies to promote their data-driven content. For example, *The Cable* has a dedicated Twitter handle, *The Cable Index* (@thecableindex), solely for sharing data visualizations from its reports. *Dataphyte*, on the other hand, produces a weekly electronic newsletter called *Data Dives*, which provides in-depth analysis and insights on key socio-economic issues and events in the country. The newsletter is sent to subscribers and aggregated email addresses. Additionally, *Dataphyte* has a dedicated webpage (https://www.Dataphyte.com/visualisation/) for publishing visualized data elements on various socio-economic issues, utilizing hashtags like *#DailyDataCard* and providing concise captions for each visualization.

Respondents noted the importance of publishing data-driven content that resonates with the public's current interests and concerns. They highlighted the need for strategic timing in releasing data-driven content, aligning it with pertinent issues and trends in society, to maximize its impact and relevance.

> If you are pushing out data-driven content during the election, know that it is what a lot of people are interested in. If you decide to push out data stories around health or COVID during election season, it is definitely not going to get traffic. Because that's not what people are interested in. So...you have to plan the stories and see to the right time to push them. So, I will say if you are mindful of timeliness, (and) your amplification strategies, you will generally do well.
>
> Respondent @ *ICIR*

Journalists as Content Promoters

Statutorily the digital team at the sampled organizations manages content promotion. Journalists are, however, encouraged (but not obligated) to promote published content on their respective social media handles for wider reach. Respondents noted that journalists consider promoting their content a norm having invested enormous resources into producing such. Respondents, however, acknowledged content promotion as an additional responsibility, but one journalist voluntarily took up its inherent benefits. They noted that the amount of rigor that goes into producing good data-driven content makes it imperative to share them widely to have more informed citizenry. They agreed that journalists are also able to build their professional profile by promoting their content. According to respondents,

Statutorily the digital teams at the sampled organizations are responsible for content promotion. However, journalists are encouraged, though not mandated, to share published content on their personal social media platforms to expand their reach. Respondents indicated that journalists consider content promotion a standard practice, given the significant resources invested in producing high-quality data-driven content. While respondents acknowledged content promotion as an additional responsibility, one journalist voluntarily embraced its inherent benefits. The respondent emphasized that the rigor and effort invested in producing exceptional data-driven content necessitate its widespread dissemination to foster a more informed citizenry. Moreover, respondents agreed that promoting their content enhances journalists' professional profiles and reputations.

> Yes... But I will not call it a burden because I don't think any newspaper imposes a rule on their journalists to share their content online. As far as I know, no newspaper does that. But like I said, people have an investment in stories, being a reporter, being the editor, or just like it. You just want to promote knowledge. You just want to aid public understanding of that issue. So, you also share it. Data journalism is an aspect of enterprise journalism. So, if you are a journalist, who has done enterprise reporting, not just turn in press releases here and there, you will want to promote it... It just feels like duty-bound to promote it. It is self-fulfilling...It's something you sat on...used some tools...it requires skills to produce. So, you want to showcase it.
>
> Respondent 2 @ *Premium Times*

> It's not something that is so serious that a journalist has to be conscious about, it's just normal routine. I mean, a journalist works, you have to just put your work out there...; putting out data-driven insights can be very much intriguing for the reader because you're bringing them new perspectives and a lot of new realities...People are on Twitter following journalists, on LinkedIn or Facebook... they have a right to also benefit from that kind of

information. So…. It's just something that should happen subconsciously. If a journalist is proud of his/her work, they would want to put their content out there.

Respondent @ *Dataphyte*

4.2.   Audience Engagement Metrics' Influence on Editorial Decision-making

Findings from the study reveal that each sampled organization has a dedicated digital team responsible for monitoring audience engagement metrics on published content. There, however, appears to be some observed secrecy in the operations of the digital tracking team, with limited disclosure on the nature and usage of garnered audience metrics. Efforts to get the digital team leader or any other member in any of the sampled organizations to serve as respondents for this study were abortive. Responses discussed here are thus limited to how generated audience data influence editorial decision-making in the sampled organizations, which respondents were willing to share.

Respondents confirmed that audience engagement metrics significantly influence editorial decisions regarding the publication of data-driven content. They emphasized the importance of focusing on topical issues that garner widespread public interest. To inform their decisions, respondents rely heavily on Google Analytics and other social media analytical tools to track audience engagement metrics for published content across their website, social media platforms, email newsletters, and other channels.

We use (mostly) Google Analytics to track audience engagement…every month, we get reports on what people are reading, what they are talking about, where they are reading from, demography, kind of the search engines that they are getting our sites from, the keywords that they are looking for, so yes, we rely on Google analytics primarily.

Respondent @ *The Cable*

Practically all social media platforms have their analytics, so we track it… (But) one that is universally used is Google Analytics. Google is technically one of the best search engines there's been in the business of gathering analytics for quite a while.

Respondent @ *ICIR*

The analysis of tracked audience metrics provides valuable insights into the topics and subjects that resonate with the audience, enabling the platforms to identify opportunities to create relevant data-driven content that caters to their interests. Additionally, this analysis offers a chance for the media platforms to investigate the

factors contributing to low engagement with certain content and utilize this knowledge to refine their approach and improve future content performance.

> Audience metrics are major drivers...What we do is, when we see that this is what people are searching for, this is what is trending or more topical at this point in time, we then brainstorm to come up with content...story ideas we can execute and feed them with. So, it is basically a sort of relationship where what they want is what we are delivering... because if you don't pay attention to the metrics, then you're actually working blindly...So sometimes, with more (audience metrics) data, we know the time we can prioritize certain places more, especially if the significance of that thing that issue, or that incident is of national importance.
>
> Respondent @ *The Cable*

Although audience metrics are integral to their operations, respondents expressed caution against overreliance on these metrics. In the online environment, numerous content pieces vie for the dwindling attention span of audiences, creating pressure on news platforms to produce content with broad appeal to capture a significant share of audience engagement (Adepetu, 2017). Respondents emphasized the need to deemphasize audience metrics as a dominant determining factor in driving data-driven content production, as engagement patterns may not necessarily reflect content quality or societal impact (Ferrer-Conill et al., 2023). Instead, they stressed the importance of targeting relevant stakeholders who can take meaningful action on the issues reported, rather than solely prioritizing audience engagement.

> We know that in this industry... sensational stories with click-bait headlines tend to move a lot more. But we understand the importance of what we do... we know that everything does not start and end with metrics or data analytics. At the end of the day, we still have responsibilities as journalists to report what is happening, to educate and to inform...We understand that you can actually spend months on some stories and will not get more than five thousand views. But there are stories that you may write just sitting by your desk within thirty minutes, and within two hours of publishing, you are already getting fifty thousand clicks or more. So...I always encourage journalists to forget about the number of views that your important stories get, what you pay attention to is the quality of the eyes viewing it. Do you have stakeholders paying attention to your stories? Do you have policymakers paying attention? Do you have relevant persons who can provide some impact for the stories?
>
> Respondent @ *The Cable*

"We won't stop writing a particular story or publish an investigation because the last investigation published didn't get enough engagement. If a story is important, if a story would make a change, if a story is very keen on policy formation for the underserved, if the story is going to expose ills, of course, we'll write it regardless of what analytics comes out of it.

<div align="right">Respondent @ Dataphyte</div>

Respondents thus noted prioritizing stories' impact over reach, while being strategic in increasing audience engagement on published content. For instance, respondent at Dataphyte noted his organization prefers to focus on the impact of their stories in achieving desired goals. According to him, Dataphyte's reports on governments' failed or non-performing contracts were soon completed after publishing data-driven reports on them due to the level of public engagement such published stories attracted the citizenry and policymakers.

Respondents thus noted prioritizing the impact of stories over their reach, while adopting strategic approaches to enhance audience engagement with published content. For example, the respondent from Dataphyte highlighted that his organization focuses on the tangible impact of their stories in achieving desired goals within the society. He noted that Dataphyte's data-driven reports on governments' failed or non-performing contracts led to their swift completion after publication, thanks to the high level of public engagement and attention from policymakers and citizens. The respondent from ICIR concurred, noting that,

At ICIR we are more or less focused on impact...Of course, we want people to read us, but we are more interested in our stories making impact... If we report that there's corruption somewhere, we prefer to have that corruption fixed or have whoever is responsible arrested than having a million people read it. I am not saying that we do not want a million people to read it, but...the impact is what we actually focus on...because what we want is good governance.

Respondents dismissed the idea that audience metrics influence the evaluation or ranking of journalists within their organizations. Instead, they viewed audience metrics as a tool for shared learning and professional development among colleagues in the newsroom, fostering a collaborative environment where journalists can learn from each other's strengths and weaknesses.

As an online newspaper, we understand that we need more views constantly and continuously, so we always work towards that, but we do not judge reporters by the number of views their stories get. We only look at quality because...we understand that the most viewable reports do not exactly get the most views or readership, so we just focus on the quality.

<div align="right">Respondent @ The Cable</div>

The story that every journalist writes at Dataphyte is important. So what the analytics does is to help us learn from one another. That's the core of our work, teamwork and bonding. So, if a story got more read than the other, we want to understand what this writer is doing to get more read and why. It may be a case of at that point, that issue is trending, and everyone wants to read. So, how can we leverage this to promote other stories? So, it doesn't make a journalist bigger than other journalists in the newsroom. We just use that process to learn, not to arrogate power to ourselves.

Respondent @ *Dataphyte*

5. DISCUSSION

5.1. RQ1: Building Readers' Interest in Data-Driven Content

This study highlights how Nigerian online news media build the interest of readers in data-driven content within the context of the sociology of news perspective. Findings indicate online media platforms in Nigeria use innovative storytelling techniques, multi-platform dissemination of content, data highlights through appropriate visualizations and key point summaries to build audience engagements on published content. The selected platforms recognize the importance of being strategic in engaging their audiences and are continuously innovating ways to expand their reach. They seem to understand the implication of the huge competition for audience attention in the online space (Idris, 2020) and the nature of data-driven content, which attracts less audience attention (Meijer & Kormelink, 2019), which the organizations then use appropriately for data news-making decisions.

Reported efforts in the study on content simplification for audience understanding is fundamental to data journalism (Bradshaw, 2024), with the potential to promote awareness and public accountability, build citizens' consciousness, and strengthen governance in the country. Findings from this study support previous studies on increasing adaptation of digital media tools for effective dissemination of data-driven news content in Nigerian media space, despite observed challenges (Okafor, 2019; Ugbede, 2024). It extends the frontiers by identifying specific strategies being adopted by data journalism-inclined online news platforms in Nigeria to ensure a wider reach for data-driven content and informed news-making decisions.

The use of social media for distribution and tracking audience engagements on data-driven content enhances data journalism's potential for greater societal impact. Social media has been noted for driving audience news consumption (Möller et al., 2020). This is particularly so with Nigeria having a high internet and social media penetration rate, with an increasing proportion of the population relying on digital devices and social media platforms for their news consumption (Adeyemo & Roper, 2022). The regular use of appropriate social media platforms such as Twitter and Facebook, and experimentation with others (e.g., Whatsapp, Instagram, Tiktok) is

a welcome development capable of further entrenching data-driven content among the populace. Nonetheless, Twitter, the most favored among respondents in disseminating data-driven content, is the fifth most-used social media platform in the country (Adeyemo & Roper, 2022; Sasu, 2023). This may have necessitated the versatility of the sampled organizations in adapting their produced data journalism content to more popular, but less conventional platforms for news dissemination and audience engagement. Disseminating data-driven content on diverse platforms invariably extends its reach, a necessary condition that must be met before further engagement can be achieved and tracked.

Adopting multiple audience engagement strategies, evidenced in this study, is a welcome development toward widening the penetration of data-driven content among the citizenry. Newsrooms need to prepare for the AI disruptive future where AI will likely limit featured links in search engine queries (Rinehart, 2023). This, according to Rinehart, will require newsrooms to depend more on building audience engagement on their own platforms and "a variety of specialized e-mail newsletters, podcasts, and Whatsapp or SMS groups" to direct the audience to their news content (Rinehart, 2023, 3.00 minute). As AI-optimized search engines may render news content more elusive, this proactive approach will become increasingly vital.

5.2. RQ2: Influence of Audience Engagement Metrics on Data Journalism Editorial Decision-Making

This study also examines the extent to which audience engagement metrics influence data journalism editorial decision-making among online news platforms in Nigeria. Findings suggest that audience engagement metrics significantly influence editorial decision-making, prompting the kind of issues to produce data-driven content on, nature of presentation and dissemination, location, etc. These support existing literature on online news platforms (e.g. Knepple, 2022; Meijer & Kormelink, 2019), establishing the centrality of the audience in deciding what news to cover (Stringer, 2020). Today's media audiences assume a participatory role and are increasingly integrated into content development, news information processing, and dissemination (Palomo et al., 2019). This is particularly true for data journalism, where data-driven content is contextually produced and disseminated to meet the diverse needs of audience members (Bradshaw, 2024).

Beyond promoting data-driven content that resonates with their audiences but may have little or no impact on society (Ferrer-Conill et al., 2023), the news platforms examined in this study appear committed to their social responsibility role within society. Respondents stressed the need to prioritize the potential impact of data journalism content over audience metrics in deciding what to publish (Knepple, 2022). Such understanding remains pertinent to the normative environment of the media population under study. Nigeria is a developing nation with varied developmental challenges. It is imperative for news media organizations in such environments to

cautiously promote developmental goals and good governance through their journalism practices.

The sampled organizations' emphasis on the societal impact of their published data-driven stories may be attributed to their non-profit orientation, as they rely on donor funding to support specific journalism initiatives, including data journalism practice examined in this study. Hence, they are more likely to commit to promoting accountability through data-driven content as expected by their funders. Therefore, editorial considerations for audience metrics can be less focused on the revenue-generation and more centered on fulfilling their public obligation, as noted by Knepple (2022). The findings suggest a deliberate shift away from prioritizing audience metrics solely to drive traffic to published content, as observed by Nelson (2018). Despite the challenging media landscape in Nigeria, the sampled organizations demonstrate a commitment to upholding core journalistic values, prioritizing public interest and good governance over audience engagement metrics. While the desire for greater audience engagement is evident, the ultimate goal remains the promotion of public accountability and sustainable journalism practices. Therefore, audience engagement metrics are just one of several considerations in data journalism editorial decision-making, rather than the sole driving factor.

6.   CONCLUSION

This study examines the production of data-driven content and how audience engagement metrics on published content tend to influence editorial decision-making. Findings indicate the production of data-driven content within a social process supported by the capabilities of data journalists to creatively engage the audience for a better understanding of published data-driven content. Audiences' preferences, in turn, exert a significant level of influence on issues on data-driven content is eventually published. Newsrooms, however, need to ensure their audience engagement practices are optimized for expected AI disruptions in the near future, if not now.

In relation to the study's supporting framework, the sociology of news paradigm, this study concludes that the sociology of data journalism news-making in Nigerian "reputable" online news media is dependent on meeting and sustaining the information needs of media audiences, while remaining mindful of the need to create significant societal impact through publication of relevant data-driven stories irrespective of the level of engagement such stories could attract. The emphasis here is on "reputable" indicating this conclusion only resonates with platforms acclaimed for good journalistic practices over the years (Adepetun, 2017). This is particularly important as the Nigerian online media space is saturated with supposed news media platforms primarily interested in attracting audience traffic to their websites, thereby resorting to poor-quality journalism and sharp practices to achieve their aim (Idris, 2020).

This study is thus limited to online platforms committed to good quality journalism. Its findings may not be generalizable to the larger Nigerian news media

landscape despite almost all media platforms having an online presence. This is largely due to the peculiarities of online news platforms, which significantly differ from other media genres. The findings in this study support an increasing centrality of news media audiences in the production of data-driven news content. Further studies are, however, encouraged to examine audience perception and engagement with such content.

Access to data on audience metrics is a key factor in understanding audience engagement with news media content, but such data is often jealously guarded by news media organizations in Nigeria. The inability to get personnel on the digital tracking team of the sampled organizations to participate in this study is a major limitation to its findings, preventing real-time evaluation of how audience data influences content creation, production, and dissemination of data journalism content. Media practitioners are often at the forefront of campaigns for open data. It will be a welcome development for them to make their audience data available for research purposes, thus aiding our understanding of data journalism and audience engagement of data-driven content in Nigeria and similar media environments.

Irrespective of the noted limitations, this study explores a less researched area of data journalism scholarship in a developing country where the practice is less entrenched. It provides a clear description of how entrenched audience-centered data journalism practice is being adopted and contextualized within the Nigerian media landscape. With Nigerians increasingly relying on online news media for their news consumption, it is pertinent to understand what this portends for news media practices in the country. With the increasing datafication of society enabling more sources for data-driven content, more audience-centered studies are encouraged for better understanding and development of data journalism practice in the country.

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