Impact of Digital Transformation on Newspaper Management in North Central Nigeria

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Abstract

This study examines the Impact of Digital Transformation on Newspaper Management in North Central Nigeria, focusing on how digital technologies are reshaping operational structures, content production and audience engagement. Grounded in Technology Acceptance Model (TAM) propounded by Fred Davis in 1986, the research investigates the extent of digital adoption and identifies key challenges confronting newspaper organizations in the digital age. Using a descriptive survey design, data was collected from 342 staff working in four (4) selected newspaper organizations in North Central Nigeria, namely: *The Voice* (Benue), *Nigeria Standard* (Plateau), *Nasarawa Newsday* (Nasarawa) and *The Graphics* (Kogi) states respectively. Census method was adopted to select 342 media professionals as a sample size for the study. Findings reveal that digital transformation positively impacts newspaper management in North Central Nigeria by enhancing operations and enforcing adaptability. However, its full potential is hindered by financial constraint, inadequate ICT infrastructure and insufficient digital skills. The study recommends that newspaper organizations should institutionalise continuous training and digital capacity-building programmes for both managerial and editorial staff, formulate comprehensive digital transformation roadmaps that outline short, medium and long-term objectives and that governments, media stakeholders and private sector partners should invest in improving ICT infrastructure, especially in underserved areas among several others.

Keywords: Digital Transformation, Newspaper Management, Media Innovation, Digital journalism, Organisational change.

Introduction

The global media landscape over the last two decades has been reshaped by rapid digital innovations. Newspapers, once dominant in information dissemination, have been disrupted by the internet, mobile technologies and social media platforms (Duarte, 2019; Mdlongwa, 2019). This shift has altered how news is produced, delivered and consumed, while also transforming the structure and management of newspaper organizations. Traditional print-focused models are giving way to digital strategies that emphasise online content, analytics, multimedia journalism and real-time audience engagement.

Digital transformation refers to adopting digital technologies to fundamentally change organizational operations and value delivery (Westerman, Bonnet & McAfee, 2014). In newspaper management, this has redefined how news is gathered, produced and distributed. The print-centric model is increasingly replaced by digital-first strategies built on real-time publishing, data-driven journalism and interactive audience engagement (Newman, Fletcher, Robertson, Eddy & Nielsen, 2023). In Nigeria, this global trend is evident. The rise of internet use, mobile access and social media have disrupted traditional media operations (Uche, 2021). Nigerian newspapers are integrating digital workflows and launching online editions to stay competitive, though they face challenges in infrastructure, human capital and revenue generation (Ogunyemi & Okon, 2022).

North Central Nigeria—comprising Benue, Kogi, Kwara, Nasarawa, Niger, Plateau and the Federal Capital Territory (FCT)—provides a unique context for examining digital transformation in newspapers. The region's urban-rural mix, socio-political diversity and varying digital infrastructure shape how newspapers adopt digital strategies (Edewor & Alabi, 2020). Digital disruption influences key management areas such as editorial decision-making, marketing, monetization and workforce dynamics. As Adesina (2023) notes, many Nigerian media houses struggle to balance digital demands with print-based practices. Declining circulation, falling advertising revenue and the growth of citizen journalism have exposed weaknesses in traditional models, demanding new skills and business agility.

In developing regions like North Central Nigeria, digital transition highlights infrastructural and training gaps. Akinfeleye (2022) observes that despite growing digital media use, many journalists and managers lack the skills to fully exploit new technologies. This mismatch limits innovation and can undermine both quality journalism and audience trust. Small newspapers, constrained by limited budgets, often struggle to run robust online platforms or adopt multimedia tools.

Digital transformation has also altered newspaper–audience relationships. Modern readers expect interactive content, personalized feeds and opportunities to engage via comments or social media. As the Reuters Institute notes (Newman et al., 2023), local newspapers without adequate infrastructure or skilled staff find it difficult to meet these expectations. Anderson (2013) warns that such outlets risk irrelevance in participatory media environments.

The shift from print-based revenue models to digital ones—subscriptions, paywalls and targeted advertising—poses further challenges. While national papers transition more easily, smaller regional outlets often lack the scale and expertise to do so effectively. Ad-blockers, algorithmic visibility issues and reluctance to pay for news worsen financial uncertainty (Oso & Olatunji, 2021). Management teams must therefore rethink sustainable business models. The demand for multi-skilled journalists, social media editors, data analysts and multimedia creators has forced newsroom managers to retrain staff or recruit new talent. These changes can cause job losses, role redefinitions and tensions between digitally skilled workers and older, print-trained staff (Idemili & Okigbo, 2022).

Socio-economic and political factors in the region further complicate matters. Low internet penetration in rural areas, unreliable electricity, digital illiteracy and declining public trust in media hinder full adoption of digital transformation (Abubakar, 2021). Managers often face the dilemma of sustaining legacy systems while racing to innovate. This raises critical questions: What strategies are newspapers using to adapt to digital disruption? How are they managing internal change? Are current practices enough to ensure survival and competitiveness?

Despite the hurdles, digital transformation offers significant opportunities. Through data journalism, mobile publishing and audience analytics, newspapers can tell more impactful stories and strengthen reader engagement. This study, therefore, investigates the impact of digital transformation on newspaper management in North Central Nigeria, focusing on the successes, challenges and strategies for building sustainable operations in the digital era.

Research Objectives

The objectives of this study are to:

1. Examine the extent to which newspaper organizations in North Central Nigeria have adopted digital technologies in their managerial and operational processes.
2. Assess the impact of digital technologies on newspaper management in North Central Nigeria.

Research Questions

The following research questions were set to guide the study:

1. To what extent have newspaper organizations in North Central Nigeria adopted digital technologies in their managerial and operational processes?

2. What is the impact of digital transformation on newspaper management in North Central Nigeria?

Conceptual Clarification

Digital transformation

Digital transformation refers to the comprehensive integration of digital technologies into all aspects of an organization's operations, leading to fundamental changes in how value is delivered, processes are executed and how customer relationships are managed. In the media industry, digital transformation encompasses the shift from traditional analog practices to digitally enabled workflows that leverage technologies such as social media, mobile platforms, artificial intelligence, data analytics and cloud computing. Westerman, Bonnet and McAfee (2014) define digital transformation as the use of digital technologies to radically improve an organization's performance or reach, a view echoed by Küng (2015), who highlights the necessity of leadership and strategic innovation in navigating digital transitions. Newman et al. (2023) have observed that digital transformation in the media sector has reshaped news production and dissemination, compelling newsrooms to adapt to the mobile-first preferences of modern audiences and algorithmic content delivery mechanisms. Adesina (2023) further asserts that the adoption of digital tools not only enhances operational efficiency and content reach but also necessitates new managerial competencies and innovation in revenue models. Therefore, digital transformation is both a technological and organizational evolution that requires deliberate strategic planning, cultural adaptation and sustained investment to thrive in today's fast-paced digital environment.

The shift from analog to digital has significantly influenced operational workflows in newspaper organizations. As Ojebuyi and Salawu (2020) observe, newsroom routines have transitioned from linear, print-based production cycles to real-time, multimedia-rich digital platforms. This transition has necessitated the integration of digital content management systems (CMS), audience analytics tools and online publishing workflows. According to Adesina (2023), digital tools have enhanced efficiency and broadened content reach, but they also introduce operational complexities, such as increased demands for continuous updates, search engine optimization to make articles more visible and the management of diverse publication channels. Ogunyemi and Okon (2022) argue that Nigerian media managers often lack adequate training for this multifaceted role, which now requires both journalistic judgment and technological proficiency.

Edewor and Alabi (2020) note that while there is a growing embrace of digital media platforms, many local newspapers lack the funding, technical expertise and ICT infrastructure necessary for full-scale digital integration. In North Central Nigeria specifically, the disparity in digital literacy and access between urban and rural areas affects both content dissemination and audience reach. This regional digital divide has implications for managerial planning, particularly content delivery formats and technology investments. Print advertisement and circulation revenues have declined sharply across the globe, forcing media houses to explore alternative revenue streams such as programmatic advertising, sponsored content, subscriptions and crowdfunding (Oso & Olatunji, 2021). However, in the Nigerian media setting, monetization of digital platforms remains a challenge due to low consumer willingness to pay, weak online advertising markets and over-reliance on social media for content distribution without commensurate returns (Idemili & Okigbo, 2022).

Another area of concern is the changing nature of journalistic roles and workforce management. The digital newsroom requires multi-skilled personnel journalists who can write, edit video, manage social media and interpret analytics (Akinfeleye, 2022). This demand for a versatile workforce often leads to tensions, particularly in legacy media houses where older staff struggle with the digital shift.

Also, audience behaviour has changed dramatically in response to digital innovation. Contemporary news consumers are mobile-first, prefer short-form content and are increasingly reliant on social media platforms for news (Newman et al*.,* 2023). As such, newspapers are required to create content that is not only informative but also engaging, shareable and optimized for multiple devices. This necessitates editorial adjustments including the incorporation of visual storytelling, interactive elements and user-generated content. Managers must now consider metrics such as click-through rates, page views and bounce rates in editorial planning.

In response to these challenges and opportunities, many newspaper organizations are adopting strategic innovations. These include partnerships with tech companies, the use of AI for content curation, audience segmentation for personalized content and the establishment of in-house digital labs (Adesina, 2023). However, such strategies are more commonly found in larger national newspapers. In contrast, regional outlets in North Central Nigeria often operate with limited resources, making them more vulnerable to the risks of digital

disruption. The adoption of innovation in these contexts tends to be piecemeal and reactive rather than strategic and proactive (Ogunyemi & Okon, 2022).

Globally, digital transformation has been studied extensively in relation to newsroom innovation, audience engagement and revenue diversification (Kleis Nielsen, 2016). However, in Nigeria, the literature remains fragmented and largely descriptive. Many studies highlight the migration of print to online platforms but fail to critically address the structural barriers that hinder full-scale transformation, such as inadequate broadband penetration, poor funding and the absence of sustainable digital business models (Okoro & Diri, 2021). Research often stops at documenting the existence of digital platforms without interrogating how ownership patterns, government influence, or weak regulatory frameworks affect the depth and sustainability of digital transformation in newsrooms. Thus, there is a gap in Nigeria-specific scholarship that examines not just adoption, but the management and long-term viability of digital strategies within the newspaper industry.

Newspaper Management

Newspaper management refers to the coordinated processes, practices and decision-making activities involved in the planning, production, distribution, human resource coordination, financial administration and strategic direction of newspaper organizations. It is the strategic, administrative and operational processes involved in the planning, production, distribution and monetization of newspaper content. This is so with the aim of ensuring organizational sustainability, editorial integrity and audience engagement in a rapidly evolving media landscape. Traditionally centered on print production, newspaper management has expanded to encompass a hybrid environment where digital integration, audience analytics, content diversification and platform management are core functions. According to Akinfeleye (2022), effective newspaper management now requires a multifaceted skill set that blends journalistic oversight with technological fluency, data interpretation and financial innovation. Ogunyemi and Okon (2022) emphasise that the managerial role in contemporary newspaper organizations includes overseeing digital product development, managing hybrid newsrooms and ensuring timely, relevant and platform-optimized content delivery. Similarly, Adesina (2023) notes that newspaper management today involves navigating the complexities of audience fragmentation, online monetization and technological disruptions while maintaining ethical journalism standards. The need for adaptive leadership and clear digital strategies in newspaper management is also underscored by Uche (2021), who argues that the absence of structured transformation frameworks

undermines the capacity of media houses to respond effectively to technological change. Therefore, newspaper management in the digital age is not merely about content control but also about organizational agility, technological investment, staff capacity building and sustained innovation to meet changing consumer behaviours and market demands.

Effective management determines a newspaper's ability to adapt to technological changes. As Ekeanyanwu (2022) observes, successful newspaper management now hinges on an organization's ability to integrate cross-platform content strategies that leverage social media, mobile apps and web-based delivery systems to capture and retain audience attention. This necessitates investment not only in digital infrastructure but also in human capital capable of navigating the digital terrain. Furthermore, managers must balance editorial independence with commercial pressures, ensuring that journalistic standards are upheld even amid efforts to generate revenue through sponsored content, paywalls and targeted advertising. The emergence of algorithm-driven news consumption also means that newspaper managers must harness data analytics to track audience behaviour, personalize content delivery and optimize user engagement. As highlighted by Okigbo and Okonkwo (2023), without strategic alignment between editorial goals and digital innovations, newspapers risk obsolescence in an era defined by immediacy, interactivity and audience empowerment.

However, studies on newspaper management in Nigeria remain limited, often focusing on traditional print operations such as circulation, advertising and editorial control (Udomisor, 2013). Very few interrogate how management practices have evolved or failed to evolve within the context of digital transformation. The Nigerian literature rarely explores how newspaper managers deal with issues such as digital revenue streams, audience data utilization, content monetization, or training for digital-first journalism (Nwafor & Okon, 2020). Instead, the discourse tends to emphasize declining print readership without offering evidence-based strategies for managing the transition. This creates a significant research gap in understanding the managerial dimensions of digital transformation in Nigerian newspapers.

Theoretical Framework

This study adopts the Technology Acceptance Model (TAM) proposed by Fred Davis in 1986 and later published in 1989. It is a theoretical framework designed to explain and predict user behaviour in the adoption of new technologies. TAM posits that two primary factors, Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) determine an individual's intention to use a technology, which in

turn influences actual usage behaviour. According to Davis, perceived usefulness refers to the degree to which a person believes that using a particular technology will enhance their job performance, while perceived ease of use refers to the degree to which the user believes that using the technology will be free from effort. In the context of the impact of digital transformation on newspaper management in North Central Nigeria, TAM offers understanding to examine how media professionals, managers and journalists accept and utilize digital technologies in their daily operations. The model helps to identify the psychological and functional factors that influence whether these stakeholders perceive digital tools as beneficial and manageable within their existing workflows. The decision to adopt or resist such tools can significantly influence the success or failure of digital transformation efforts in the newspaper industry.

Perceived usefulness is particularly relevant in this study, as the sustainability and competitiveness of newspapers in North Central Nigeria hinge on their ability to leverage digital technologies to reach wider audiences, improve content delivery and enhance operational efficiency. If media practitioners believe that these technologies can significantly improve how they gather, produce and disseminate news, they are more likely to support their implementation and integration. For instance, real-time publishing and audience analytics may be seen as useful tools that offer immediate feedback and guide editorial decisions more effectively than traditional print processes. Likewise, perceived ease of use plays a critical role in determining the pace at which digital transformation occurs in these newspaper organizations. If digital platforms are viewed as overly complex, expensive to maintain, or incompatible with existing infrastructure, resistance to adoption may occur despite their potential benefits. Therefore, training, user-friendly interfaces and support systems are essential to ensure that staff can comfortably transition from analog to digital operations. TAM provides a theoretical foundation for understanding the human and organizational factors influencing digital adoption in newspaper management.

Empirical Studies

Studies have increasingly stressed how digital transformation is reshaping newspaper management practices across Nigeria. According to Akinyemi and Adegbola (2021), many traditional newspaper houses such as *The Guardian*, *ThisDay* and *Punch* have had to restructure their business models due to the proliferation of digital technologies. Their study, which involved interviews with senior editors and content managers, found that print circulation had declined by over 40% between 2015 and 2020, prompting a shift toward digital-first strategies.

These strategies include online subscriptions, e-paper (electronic papers) formats and the integration of multimedia content to engage readers more effectively.

Okoye and Eze (2022) examined the operational challenges and opportunities presented by digital technologies in Nigerian newsrooms. Using a mixed-methods approach involving surveys and case studies of five leading newspapers, their findings indicated that digital transformation led to increased efficiency in content production and dissemination. However, it also introduced challenges such as cyber threats, digital skill gaps among staff and the financial burden of acquiring and maintaining digital infrastructure. Despite these challenges, the study noted an improvement in real-time news reporting and the ability to reach a broader audience through social media and web platforms.

Another important dimension explored in recent studies is the impact on revenue generation. A study by Musa and Ibrahim (2023) surveyed 150 media professionals across Lagos and Abuja, finding that digital transformation has led to a significant decline in revenue from traditional advertisements. However, the study also noted an increase in programmatic and social media advertising, though this has not entirely compensated for losses in print ad revenue. The authors recommend the adoption of data analytics and targeted digital marketing strategies to improve monetization efforts across digital platforms.

In terms of human resource management, research by Nwachukwu et al. (2023) reveals that digital transformation has changed the competency requirements for journalists and editors in Nigeria. The study, based on qualitative interviews across ten newspaper companies, found a growing demand for journalists skilled in digital storytelling, data journalism and content management systems. Consequently, newspaper organizations have begun to invest in training and capacity-building programmes to bridge the digital skill gap. However, staff layoffs due to automation and restructuring remain a concern, raising questions about job security in the evolving media landscape.

Bello and Yusuf (2024) show that audience engagement and feedback mechanisms have improved dramatically due to digital platforms. Their longitudinal study on online user interaction with major Nigerian newspaper websites from 2020 to 2023 indicates a 65% increase in user engagement through comment sections, social media shares and live reporting tools. These changes have allowed newspaper management to adapt editorial content based on audience interests and real-time analytics, marking a shift towards more data-driven

decision-making. Overall, the impact of digital transformation on newspaper management in Nigeria is multifaceted, presenting both significant challenges and opportunities for innovation and growth.

Methodology

This study employed a mixed-methods research design, integrating both quantitative and qualitative approaches to gain a holistic understanding of the effects of digital transformation on newspaper management in North Central Nigeria. The integration of survey and in-depth interview is well-suited to this investigation, as it enables both breadth and depth in data collection and analysis (Creswell & Hirose, 2021). The quantitative component, through structured questionnaire, captures measurable data on the extent of digital adoption, operational changes and the challenges encountered by newspaper organizations, ensuring that findings are generalizable across the region (Bryman, 2016). The qualitative component involves in-depth interviews with four (4) managerial staff, offering deeper insights into strategic decisions and contextual experiences of digital transformation (Patton, 2015).

The four newspapers were selected due to their active and visibility of operations. They include *The Voice* (Benue State), *The Nigerian Standard* (Plateau State), *Nasarawa Newsday* (Nasarawa) and *Kogi Graphics* (Kogi State). The total population of the four newspaper organizations is 342 staff (*The Voice*: 102; *The Standard*: 99; *Nasarawa Newsday*: 72; and *Kogi Graphics*: 65 staff.). Given the manageable size, census method was used involving all staff across the selected organizations to ensure inclusivity in data gathering (Bhat, 2022). Data collection instruments included questionnaires for the broader staff and IDI guide for the semi-structured interviews conducted with each organization's Managing Director or Editor-in-Chief. Quantitative data were analyzed using descriptive statistics mainly frequencies and percentages to identify trends and distribution patterns, while qualitative data were analyzed to uncover managerial perspectives.

Analysis and Discussions

This section delves into the analysis of the study which anchors the impact of digital transformation on newspaper management in North Central Nigeria, examining how the adoption of digital technologies has redefined operational strategies, content dissemination, audience engagement, revenue models and organizational structures within the media setting of the North Central Nigeria.

Table 1: The Extent of Adoption of Digital Technologies by Newspaper Organizations in North Central Nigeria.

Option	Frequency	Percentage (%)
High Extent	103	30.4
Very High Extent	95	28.1
Neutral	10	2.9
Low Extent	64	18.9
Very Low Extent	66	19.5
Total	**338**	**100.0**

To what extent have managers and staff been trained to use digital platforms for news production and distribution?

High Extent	101	29.8
Very High Extent	99	29.2
Neutral	9	2.6
Low Extent	65	19.2
Very Low Extent	64	18.9
Total	**338**	**100.0**

To what extent are digital technologies used to manage workflow and staff communication effectively in your organization?

High Extent	100	29.5
Very High Extent	96	28.4
Neutral	12	3.5
Low Extent	67	19.8
Very Low Extent	63	18.6
Total	**338**	**100.0**

To what extent has the adoption of digital tools improved your organization's operational efficiency?

High Extent	104	30.7
Very High Extent	100	29.5
Neutral	8	2.3
Low Extent	64	18.9
Very Low Extent	62	18.3
Total	**338**	**100.0**

Option	Frequency	Percentage (%)
To what extent does your newspaper organization have a clear digital transformation strategy guiding managerial decisions?		
High Extent	99	29.2
Very High Extent	97	28.7
Neutral	12	3.5
Low Extent	66	19.5
Very Low Extent	64	18.9
Total	**338**	**100.0**

Source: *Fieldwork, 2025*

Table 1 reveals the extent to which newspaper organizations in North Central Nigeria have adopted digital technologies in their managerial and operational processes. A significant proportion of respondents agreed that their newspaper organizations have integrated digital tools into daily editorial operations (58.5%), indicating a shift towards digital workflows. Similarly, a combined 59.1% affirmed that managers and staff have received training on using digital platforms for news production and distribution, highlighting a commitment to capacity building for digital competence. Also, 57.9% of respondents acknowledged the use of digital technologies to manage workflow reflecting the growing reliance on digital tools for internal coordination. The perceived impact of digital tools on operational efficiency is notably positive, with 60.3% agreeing that digital adoption has enhanced efficiency. However, while 57.9% indicated the presence of a clear digital transformation strategy guiding managerial decisions, the relatively high percentage of disagreement or neutrality across the indices suggests that digital transformation is not yet uniformly implemented across all newspaper organizations. This mixed response points to varying levels of digital maturity, with some newspaper organizations fully embracing digital integration while others remain in transitional or early adoption phases.

In the interviews conducted with managers of *The Voice* (Samuel Atachin), *The Standard* (Chris Gyang), *Nasarawa Newsday* (Dan Musa Mohammed) and *The Graphics* (Yusuf Jimoh Itokpa), a shared narrative emerged regarding the adoption of digital technologies and the challenges each organization faces. General Manager of *The Voice* highlighted that while the newspaper has embraced online publishing, social media engagement and digital archiving, financial constraints and limited staff training remain major setbacks. Similarly, the Managing Director of *The Nigeria Standard* noted that although the paper now uses content management systems and engages readers through digital

platforms, poor internet infrastructure and resistance to change among some veteran staff impede progress. Editor-in-chief at Nasarawa *Newsday* newspaper acknowledged the organization's efforts in transitioning to digital formats, including e-papers and multimedia reporting, but lamented inadequate technical expertise and lack of consistent government funding as key challenges. Meanwhile, Managing Director of *The Graphics* stated that while the paper has made commendable efforts in utilizing social media and maintaining a website, digital transformation is slowed by outdated equipment, cybersecurity concerns and the difficulty in generating revenue through online platforms. These managers emphasized that although digital adoption is in progress across these newspapers, recurring issues such as limited funding, insufficient digital literacy, poor internet access, outdated technology such as manual typesetting, analog printing presses, floppy disk drives etc. and underdeveloped monetization strategies continue to hinder the effective management and full digital transition of their organizations.

Table 2: Impact of Digital Technologies on Newspaper Management in North Central Nigeria.

Option	**Frequency**	**Percentage (%)**
Agree	103	30.4
Strongly Agree	99	29.3
Neutral	9	2.6
Disagree	63	18.6
Strongly Disagree	64	18.9
Total	**338**	**100.0**
The adoption of digital tools has enhanced the quality and timeliness of news reporting.		
Agree	104	30.7
Strongly Agree	100	29.5
Neutral	8	2.3
Disagree	64	18.9
Strongly Disagree	62	18.3
Total	**338**	**100.0**
Digital platforms (websites, apps, social media) have become essential for newspaper reach.		
Agree	101	29.8
Strongly Agree	97	28.7
Neutral	13	3.8

Option	Frequency	Percentage (%)
Disagree	65	19.2
Strongly Disagree	62	18.3
Total	**338**	**100.0**

Digital transformation has reduced the cost of newspaper production and distribution.		
Agree	108	31.9
Strongly Agree	102	30.1
Neutral	7	2.0
Disagree	62	18.3
Strongly Disagree	59	17.4
Total	**338**	**100.0**

Digital transformation has improved our newspaper's ability to generate revenue through online platforms.		
Agree	102	30.1
Strongly Agree	100	29.5
Neutral	10	2.9
Disagree	63	18.6
Strongly Disagree	63	18.6
Total	**338**	**100.0**

Source: *Fieldwork, 2025*

Table 2 provides a comprehensive review of perceived impact of digital technologies on newspaper management in North Central Nigeria. A majority of respondents acknowledged that digital technologies have significantly improved operational efficiency, with 30.4% agreed and 29.3% strongly agreed, together accounted for 59.7% of the total respondents. Similarly, 60.3% (30.7% agreed, 29.5% strongly agreed) affirmed that the adoption of digital tools has enhanced both the quality and timeliness of news reporting. Furthermore, digital platforms such as websites, mobile applications and social media were recognized as essential tools for expanding newspaper reach by a combined 58.5% of participants. Notably, 62.1% (31.9% agreed, 30.1% strongly agreed) of the respondents believed that digital transformation has played a key role in reducing the cost of newspaper production and distribution, highlighting its economic benefit. However, while the use of digital tools appears widespread and effective, there is a slightly more mixed perception when it comes to staff readiness where 59.7% felt staff were adequately trained (30.1% agreed, 29.5% strongly agreed).

These findings suggest that digital transformation has had a largely positive impact on newspaper management in the region, enhancing efficiency, quality, reach and cost-effectiveness, albeit with some challenges in workforce adaptation.

In another session of interviews with managers of these newspapers, each manager shared their perspectives on the impact of digital technologies in their newspaper organizations highlighting unique challenges. General Manager of *The Voice*, Samuel Atachin emphasized that digital platforms have expanded their reach and improved news delivery speed, but noted that inconsistent internet connectivity and insufficient funding for digital infrastructure remain major obstacles. Managing Director of *The Standard*, Chris Gyang praised digital tools for enhancing content quality and audience engagement but expressed concern over the limited digital skills among journalists in the organization, which slows down full adoption. Manager/Editor-in-Chief of *Nasarawa Newsday*, Dan Musa Mohammed acknowledged that digital transformation has reduced production costs and streamlined distribution, yet raised the issue of declining print revenues that are not fully compensated by digital monetization efforts, creating financial worry. In his views, the Managing Director of *Kogi Graphics* newspaper, Yusuf Jimoh Itokpa pointed out that while digital platforms have opened new avenues for advertising and readership growth, challenges with staff training and resistance to change among some employees continue to hinder smooth digital integration. These managers agreed that digital technologies have positively transformed newspaper operations but emphasized that infrastructural deficiencies, skill gaps, financial pressures and organizational resistance remain critical hurdles to effective management in the digital era.

Discussion of Findings

Findings of this study reveal a positive impact of digital transformation on newspaper management in North Central Nigeria, aligning with much of the empirical literature. The alignment between the literature and findings is evident across several dimensions, ranging from operational efficiency to managerial adaptation, infrastructure and workforce readiness. The study found that a significant proportion of newspaper organizations in North Central Nigeria have adopted digital tools such as Google Docs, Word Press, Yoast and Canva for editorial operations. This confirms Westerman, Bonnet and McAfee's (2014) view that digital transformation is essential for improving organizational performance and reach. Furthermore, this shift supports Ojebuyi and Salawu's (2020) observation that newsroom routines have transitioned to multimedia-driven workflows, reflecting the incorporation of digital platforms into the core of

editorial processes. Another significant proportion of respondents indicated that staff and management had received digital training in multimedia production, social media storytelling and data journalism skills, affirming the literature's emphasis on capacity building as a critical component of digital transformation. This aligns with Ogunyemi and Okon's (2022) argument that technological proficiency is a required managerial skill in hybrid newsrooms. However, the presence of a meagre opinion of respondents who disagreed suggests that training remains inconsistent and that a digital skills gap persists particularly among veteran journalists as also noted by Chris Gyang (2025) in the interviews. The study found that a significant number of respondents use digital technologies to manage workflow and it reflects the trend described by Adesina (2023), who notes that content management systems and analytics tools are increasingly used to streamline operations. This is further echoed in the interviews, where managers reported using e-papers, multimedia reporting and digital archiving to improve their production processes despite challenges related to infrastructure and training. The positive perception of digital transformation's impact on efficiency mirrors the broader scholarly consensus that digital technologies enhance organizational performance. For example, Akinfeleye (2022) highlights how multi-skilled journalism and digital tools increase content output and responsiveness. This operational enhancement, however, is tempered by structural barriers such as internet connectivity and financial limitations, as articulated by managers like Chris Gyang and Samuel Atachin. The study further found that 43.1% of respondents reported having a digital strategy which points to a growing, but not universal, strategic orientation toward digital transformation. Literature emphasizes the importance of strategy and leadership in effective transformation (Küng, 2015; Uche, 2021). Yet, the variability in responses underscores that strategic clarity is lacking in some organizations, a point reinforced by Ogunyemi and Okon (2022), who argue that transformation in regional media is often reactive rather than proactive.

The financial implications of digital transformation both positive and negative are substantiated in the study. While a significant number of respondents agreed that digital tools reduced production costs, interviewees expressed concern over declining print revenues and underdeveloped monetization models. This is consistent with Oso and Olatunji's (2021) finding that digital revenue streams in Nigeria are underperforming due to low consumer willingness to pay and fragile digital advertising markets. The study highlights that a significant percentage of respondents believed staff are adequately trained. However, the notable minority that disagrees reflects Abubakar's (2021) concern over the absence of structured

training programmes and resistance to digital change. The managers' interviews further support this, with frequent mentions of skill gaps and resistance, particularly among long-serving employees who struggle to adjust to new workflows and tools. Audience engagement and content reach were reported as being positively affected by digital platforms acknowledging their importance. This is in line with the findings of Newman et al. (2023), who argue that audiences are now mobile-first and expect engaging, shareable content. The editorial shift towards visual storytelling and analytics-driven content strategies, as suggested in the literature, is thus partially reflected in practice among the surveyed organizations. Strategic innovations such as digital labs, AI tools and audience segmentation were found to be more prevalent in larger national media organizations (Adesina, 2023). The current study corroborates this by highlighting that regional newspapers in North Central Nigeria face limitations that inhibit such advancements. Interview data suggest that innovation is often incremental and driven by necessity rather than long-term strategic planning, reinforcing the literature's portrayal of a reactive innovation culture in regional contexts. Leadership and policy frameworks remain central to successful digital transformation, as emphasized by Küng (2015) and Uche (2021). The empirical findings show a lack of uniform adoption of digital strategies and inconsistent investment in digital infrastructure. This leadership gap is echoed in the interviews, where managers call for stronger policy support and organizational commitment. Overall, while the findings validate much of the literature, they also reveal the complexities and regional disparities that complicate the digital transformation journey in North Central Nigeria's newspaper industry.

Conclusion

This study affirms that digital transformation has a largely positive yet uneven impact on newspaper management in North Central Nigeria. The integration of digital tools into editorial operations, adoption of digital workflows and investment in staff training signal a progressive shift toward modern journalism practices. These developments mirror broader empirical literature that highlights the benefits of digitalization in enhancing operational efficiency, workforce adaptability and audience engagement. The study also exposes several persistent challenges including infrastructural deficits, inconsistent training, financial uncertainties and limited strategic planning, particularly among regional newspaper organizations. While many media houses have begun formulating digital strategies and recognizing the potential of new media technologies, their efforts remain constrained by systemic issues such as inadequate policy frameworks, leadership gaps and a reactive approach to innovation. Interviews with managers further emphasize the need for institutional support and targeted

capacity building to bridge digital divides within and across organizations. Thus, while the findings validate key theoretical perspectives on the transformative potential of digital technologies, they also highlight contextual complexities that shape its implementation in local media environments. Addressing these challenges requires a more inclusive, policy-driven and future-focused approach to ensure that digital transformation translates into sustainable growth and competitiveness for newspaper organizations in North Central Nigeria.

Recommendations

Based on findings of the study, the following recommendations are proposed to enhance the effectiveness and sustainability of digital transformation in newspaper organizations in North Central Nigeria:

i. Newspaper organizations should institutionalize continuous training and digital capacity-building programmes for both managerial and editorial staff. This includes practical workshops on content management systems, social media engagement, multimedia reporting and data analytics, with special attention to upskilling veteran journalists to bridge the digital literacy gap.
ii. Media organizations should formulate comprehensive digital transformation roadmaps that outline short, medium and long-term objectives. These strategies must align with organizational goals, include measurable performance indicators and be integrated into day-to-day decision-making processes to guide sustainable digital integration.
iii. Governments, media stakeholders and private sector partners should invest in improving ICT infrastructure, especially in underserved areas. Reliable internet access, modern hardware and robust cybersecurity frameworks are essential to support efficient digital workflows and ensure content delivery across multiple platforms.
iv. Newspapers organizations should explore strategic partnerships with technology companies, journalism institutes and donor agencies. These collaborations can support the development of digital labs, facilitate experimentation and promote innovative content formats tailored to evolving audience preferences.
v. Media managers must prioritize the development of diverse monetization strategies beyond traditional advertising and print circulation. This includes adopting digital subscription models, sponsored content, data-driven advertising and crowdfunding initiatives, while also educating audiences on the value of paid digital content.
vi. Media organizations should cultivate leaders who can champion digital transformation and advocate for supportive policies at both institutional and governmental levels. Coordinated efforts should also focus on developing a

national or regional media policy framework to guide digital growth across the sector.

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