

Journalism Transformation in the Digital Era: Data, Algorithms, and Audiences

Haikha

Universitas Gadjah Mada, Indonesia

haikha@mail.ugm.ac.id

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Abstract

Although digital journalism has received considerable scholarly attention, the relationships among data practices, audience metrics, algorithmic visibility, platform dependence, media power, and professional accountability remain insufficiently integrated. This study examines how these dimensions interact in the transformation of digital journalism and their implications for journalistic quality and public responsibility. Adopting a qualitative interpretive approach, the study draws on books, journal articles, and academic book chapters selected for their relevance, recency, and theoretical contribution. Thematic analysis involved identifying key ideas, organizing them into four analytical dimensions, and synthesizing their interrelationships. The findings indicate that digital technologies expand capacities for information gathering, analysis, and presentation, while audience metrics and algorithmic distribution shape news visibility and editorial priorities. These processes intersect with platform dependence, commercial pressures, and media ownership structures, creating challenges for editorial independence and professional accountability. By integrating these dimensions into a common analytical framework, the study advances an interconnected understanding of digital journalism. It concludes that journalistic quality depends on critical interpretation of evidence, independent editorial judgment, and clear responsibility for published content. The findings suggest that news organizations should use audience metrics as supporting information, critically evaluate data and AI-assisted outputs, and maintain transparent editorial practices. Further empirical research could examine how Indonesian newsrooms navigate these pressures across different organizational and ownership contexts.

Keywords: Digital Journalism; Data Journalism; Audience Metrics; Algorithmic Visibility; Platform Dependence

INTRODUCTION

Digital technology has reshaped the conditions under which journalism operates. News now circulates through websites, social media, search engines, and other digital platforms, changing how media organizations produce information and reach their audiences. Steensen & Westlund (2020) conceptualize digital journalism as an ecosystem shaped by the interaction of journalistic practices, technologies, media organizations, and society. This perspective helps explain why digital transformation extends beyond the adoption of new publishing tools. As Hase et al. (2023) discuss in relation to platformization, news organizations must adapt their content to the formats and distribution logics of digital platforms. Although these changes create new opportunities to reach audiences, they also place news circulation partly in the hands of external systems whose priorities may differ from those of journalism. Understanding this shift requires examining how technological developments affect editorial decisions, the visibility of news, and journalists' responsibility to the public.

The implications are particularly evident in data-driven reporting, where the availability of digital information expands the possibilities for investigating and presenting public issues. Lewis (2015) discusses the opportunities big data offers journalism, while Bounegru & Gray (2025) emphasize the importance of critically examining how data are produced, categorized, analyzed, and presented. The resulting reports depend on editorial and methodological choices that influence how audiences interpret evidence. Tirto.id (2020), for example, examined the risks of presenting COVID-19 statistics without adequate explanation, particularly when percentages and absolute figures can produce different interpretations. Abrar (2021), meanwhile, discusses collaboration between Tirto and Jubi in reporting human rights issues in Papua, illustrating how cooperation can support journalistic coverage. These cases highlight different dimensions of digital reporting: data and technology can strengthen investigation and collaboration, but their contribution to journalism depends on verification, contextual interpretation, and editorial judgment.

These editorial responsibilities become more complex as audience behavior increasingly informs news production and distribution. Anderson (2011) examines audience transparency and the growing capacity of media organizations to monitor audience activity. Metrics such as clicks, views, comments, and shares provide information about what attracts attention, yet popularity does not necessarily correspond to public value. Moreover, audiences increasingly encounter news through recommendation systems, search engines, and personalized feeds rather than solely through media organizations' own channels. Nielsen & Fletcher (2023) examine the role of digital platforms in news distribution and consumption, while Sehl & Eder (2023) address personalization and its implications for information exposure. Audience data and algorithmic selection are therefore connected: metrics help media organizations assess audience behavior, while platform systems influence which stories become visible. This relationship raises concerns about editorial autonomy and the diversity of information available to the public.

The influence of digital systems must also be considered alongside the political, economic, and professional structures within which journalism operates. Hanitzsch (2006) examines journalistic culture in relation to professional roles and institutional environments, while Lim (2012) discusses media ownership concentration and power in Indonesia. These perspectives place contemporary technological change within a broader context in which organizational interests and existing power relations continue to shape news production. The adoption of artificial intelligence (AI), particularly generative AI, adds further questions concerning accuracy, transparency, privacy, and responsibility for published material. Vesala (2022) addresses rights and responsibilities in AI development, while Shi & Sun (2024) examine changes in journalistic practice and ethical concerns associated with generative AI. Newman (2018) also considers technological developments in relation to changing news consumption. Taken together, these studies provide grounds for assessing digital innovation in terms of its implications for journalistic standards and institutional accountability, rather than technological efficiency alone.

Existing scholarship provides important insights into these developments, but the different dimensions of digital journalism need to be considered in relation to one another. Steensen & Westlund (2020) offer an ecosystem perspective, while Lewis (2015) and Bounegru & Gray (2025) address data-related practices. Anderson (2011), Nielsen & Fletcher (2023), Sehl & Eder (2023) examine aspects of audience behavior, platform distribution, and personalization. Hanitzsch (2006) and Lim (2012) provide perspectives on professional and

structural conditions, while Vesala (2022) and Shi & Sun (2024) address issues associated with AI and responsibility. Building on these contributions, this article focuses on the connections among data practices, audience metrics, algorithmic visibility, platform dependence, media power, and professional accountability. Its central argument is that digital journalism is undergoing an ecosystemic transformation in which control over news production and circulation is distributed among journalists, media organizations, platforms, algorithms, and audiences. Examining these relationships together offers a way to understand how technological and structural changes shape journalistic practice.

Drawing on the digital journalism ecosystem perspective developed by Steensen & Westlund (2020), this article develops a conceptual synthesis that places journalistic responsibility at the center of the analysis. It examines changes in news production and distribution, the use of data, the evolving role of audiences, the influence of algorithms and platforms, and the ethical challenges associated with digital technologies, including AI. The article aims to explain how these developments interact and what their interconnections mean for accuracy, verification, editorial independence, transparency, and the public interest. Its contribution lies in bringing these dimensions into a shared analytical discussion, rather than treating each technological development as an isolated change in journalistic practice.

METHODS

This study employs a qualitative approach within an interpretive paradigm, using a literature study methodology. It examines the transformation of digital journalism through the interpretation and synthesis of literature on journalistic practices, data, algorithms, audiences, and professional ethics. Uth et al. (2025) served as a methodological reference for examining, categorizing, and comparing distinct theoretical perspectives in journalism studies.

The research sources consist of high-quality secondary data, including books, peer-reviewed journal articles, and academic book chapters relevant to digital journalism. To ensure rigorous selection, sources were evaluated based on three strict criteria: topical relevance to the research focus, recency (prioritizing publications from the last five years), and theoretical contribution to digital media ecosystems. Earlier, seminal publications were selectively retained only when they provided foundational concepts that remained structurally relevant to the analysis. Additionally, a comprehensive systematic review by AR

(2024) was utilized as a benchmark reference to map the longitudinal developments and trends in data journalism research between 2010 and 2023.

Data collection was carried out through digital archiving and documentation guidelines across reputable academic databases (such as Scopus, Web of Science, and Google Scholar). Searches were restricted to literature published up to early 2026 and guided by specific keyword combinations, including: *"digital journalism"*, *"journalism studies"*, *"data journalism"*, *"journalistic culture"*, *"algorithmic audiences"*, *"audience engagement"*, *"artificial intelligence and journalism"*, and *"news media transformation"*. The selected literature was comprehensively reviewed, extracted, and documented according to its central concepts, core arguments, empirical findings, and direct relevance to the research questions. The study relied exclusively on these secondary sources and did not involve empirical interviews or direct field observations.

The extracted literature was analyzed thematically and interpretively through a systematic three-stage qualitative process: identifying key ideas, organizing the literature into analytical dimensions, and synthesizing relationships among the identified concepts. The analysis was structured into four interconnected, non-linear dimensions derived from the literature matrix: (1) transformation of journalistic production; (2) changing audience roles and news distribution; (3) platform dependency and structural constraints; and (4) emerging ethical and professional challenges. These dimensions provided a rigorous analytical framework for cross-examining arguments across different contexts and analyzing the structural interplay among technological practices, algorithmic distribution, organizational conditions, and professional accountability. The final synthesis focused on conceptualizing how these power dynamics shape the contemporary digital journalism ecosystem and their broader implications for accuracy, verification, editorial independence, transparency, and the public interest.

This study is inherently limited by its reliance on available published literature and does not directly observe real-time journalistic practices within specific newsrooms. Consequently, its findings constitute a high-level conceptual synthesis of digital journalism transformation rather than a localized empirical account of newsroom workflows.

RESULTS

The thematic analysis identified four interconnected dimensions of digital journalism transformation: changes in journalistic production, evolving audience roles and news distribution, platform dependence and structural constraints, and emerging ethical and professional challenges. These dimensions capture how digital technologies affect the production and presentation of news, how audiences encounter and engage with journalistic content, and how platforms and organizational conditions shape news circulation. The findings are presented in four sections, moving from changes in journalistic practices to the broader structural and professional challenges associated with digital transformation.

1. Transformation of Journalistic Production

Digital technologies have changed the process of journalistic production by reshaping how information is gathered, processed, verified, and presented. The use of social media, official websites, digital databases, and online documents has expanded the range of sources available to journalists. At the newsroom level, these resources also support collaboration and information exchange among reporters (Lestari et al., 2024). The significance of this change lies in the relationship between access to information and the work required to turn it into verified news. A wider range of sources can enrich reporting, but journalists must still assess their reliability and establish their relevance to the story.



Figure 1. Media coverage activity at the Wisma Atlet Emergency Hospital, Kemayoran, on November 9, 2020.

This relationship between digital access and journalistic work remains evident in the continued use of direct reporting. Figure 1 documents the author's reporting activities as an

iNews representative at the Wisma Atlet Emergency Hospital in Kemayoran, Jakarta, on November 9, 2020, during the COVID-19 pandemic. Although digital sources have become increasingly important, on-site reporting provides a means of obtaining firsthand information and observing circumstances directly. The example therefore places digital production within a broader process in which online information and direct observation can serve complementary roles.

Changes in information gathering have occurred alongside changes in how news is produced and presented. Digital journalism encompasses several forms, including data journalism, network journalism, automated journalism, and journalism using virtual and augmented reality (Das & Upadhyay, 2024). News reports can also combine written text with photographs, video, audio, graphics, and infographics, while online publication allows stories to be updated as new information emerges. These formats alter the relationship between reporting and publication. Journalists must organize information for different modes of presentation while responding to developments that may continue after a story first appears.

The capacity to publish frequent updates also changes the pace of newsroom work. When news can be circulated almost immediately, the time available for checking information may become compressed by competition among media outlets. Production consequently involves more than writing and editing. Journalists may need to interpret data, prepare visual material, coordinate multimedia elements, and adapt stories to different publishing formats. These demands help explain why digital transformation involves changes in professional skills and workflow, rather than simply a transition from print to online publication.

Data journalism makes this shift particularly clear because it changes the role of evidence in constructing a news report. Government records, research datasets, public documents, and other digital sources can be used to identify patterns and compare developments that may not be apparent from individual events. Yet, as Lewis (2015) explains, working with large volumes of data requires the capacity to process and interpret information. Contextual analysis is similarly important to quantitative reporting (Abrar et al., 2024), while Bounegru & Gray (2025) emphasize the processes through which data are categorized, analyzed, and presented. These perspectives place data interpretation at the center of journalistic work: numerical evidence becomes meaningful for readers through the questions journalists ask, the comparisons they make, and the context they provide. The collaborative dimension of this work may also require cooperation among journalists,

analysts, programmers, and designers, particularly when reporting depends on technical analysis and visualization (de-Lima-Santos, 2024).

The COVID-19 coverage published by Tirto.id illustrates how these decisions affect the interpretation of data. In *“Grafik COVID Indonesia Juli 2021: Jauh dari Target & Tak Terkendali,”* the report combined testing data, positivity rates, vaccination statistics, case numbers, and mortality figures with government targets and commentary from epidemiologists (Tirto.id, 2021). The report's use of several indicators placed individual figures within a wider account of the pandemic. A related article, *“Grafik Kasus COVID-19 Dianggap Jahat & Rawan Tanpa Penjelasan,”* addressed the risk of presenting percentages without accompanying absolute figures (Syambudi, 2020). The two reports illustrate different aspects of the same problem: selecting indicators affects what readers see, while omitting relevant numerical context can lead them to misinterpret the scale of a development. The value of data journalism therefore depends on the reasoning behind the presentation of evidence, not simply on the use of charts or statistical information.

Artificial intelligence (AI) extends the use of digital tools from accessing and interpreting information to assisting with particular production tasks. Applications such as information retrieval, data processing, and content drafting can alter how journalists organize their work. A systematic review of 127 studies by Sonni et al. (2024) examines the implications of AI integration for newsroom practices, journalistic roles, and news formats, while also identifying concerns about accuracy, transparency, privacy, and accountability. These concerns connect automation to the issues raised by data journalism: although technological tools can assist information processing, their outputs still require editorial assessment. The growing use of automated systems therefore brings questions about verification and professional responsibility into the production process itself.

2. Changing Audience Roles and News Distribution

Digital news circulation involves audiences in several activities beyond reading published reports. Readers comment on articles, share stories, submit information, and respond to coverage, extending the circulation of news beyond its original publication. These activities are also shaped by the ways audiences interpret messages through their social backgrounds and personal experiences (Pratama & Abrar, 2025). Audience participation therefore involves both the circulation of published content and the interpretations that accompany its reception.

The expansion of audience participation has coincided with the growing availability of data about news consumption. Page views, clicks, comments, social shares, and reading time provide measurable indicators of audience activity, giving news organizations additional information about how published stories are received (Anderson, 2011). However, these indicators describe patterns of engagement rather than necessarily explaining how audiences understand the information they encounter. The distinction between measuring engagement and communicating information clearly is important when examining the use of audience data in newsroom practice (Abrar, 2018).

Audience behavior also varies across demographic groups and media environments. A review of 232 research articles on young people and news identifies social media as an important channel for examining how younger audiences access and share news (Røsok-Dahl & Ihlebæk, 2024). Such differences complicate attempts to interpret aggregate audience metrics as a representation of public interest as a whole. Age, media habits, and information preferences need to be considered when describing patterns of news consumption.

The circulation of news also depends on how digital platforms organize access to published content. News websites remain important publication points, but search engines, social media platforms, aggregators, and recommendation systems influence which stories users encounter. This development forms part of the platformization of news media systems, in which relationships between news organizations and digital platforms shape the circulation of journalism (Nielsen & Fletcher, 2023). Publication by a newsroom consequently does not guarantee that a story will reach its intended audience.

Recommendation systems introduce an additional layer between publication and audience exposure. By selecting and organizing content according to factors such as users' previous activity, inferred interests, and story characteristics, these systems influence which reports become visible to particular users. News organizations can thereby reach audiences beyond direct visits to their websites, although the distribution of their content also depends on platform-based selection. News circulation thus involves an interaction between editorial publication, audience activity, and the systems that organize content visibility.

Personalization further shapes the information encountered by individual users. Tailoring news to personal preferences raises questions about the relationship between individualized recommendations and the range of information available to audiences (Sehl & Eder, 2023). The resulting exposure depends on recommendation-system design, the

parameters used to select content, and users' own search behavior. Personalization should therefore be examined in relation to both the selection of news by platforms and the choices audiences make when seeking information.

The relationship between recommendation systems and audience responses also extends to trust in news organizations. A study involving 5,079 respondents across five countries examines how perceptions of news recommendation systems relate to trust in news, identifying audience perceptions and algorithmic literacy as relevant factors (Blassnig et al., 2024). These findings place audience understanding of recommendation systems alongside the technical mechanisms that determine news visibility. Digital news distribution consequently involves both the organization of content by platforms and the ways audiences perceive the systems through which they encounter it.

3. Platform Dependency and Structural Constraints

The growing role of digital platforms in news distribution places news organizations in a relationship of dependence on infrastructures they do not directly operate. Search engines, social media platforms, aggregators, and recommendation systems provide routes through which publishers reach audiences, while the conditions governing those routes are partly determined by platform operators. This relationship is a central feature of platformization, which reshapes the organization of news media systems and the relationship between publishers and technology companies (Nielsen & Fletcher, 2023). News organizations retain responsibility for producing and publishing journalism, but they do not independently control every stage of its circulation.

This dependence becomes visible when news organizations adapt their content to different platform environments. Social media channels have specific formats and presentation conventions that influence how news is prepared and distributed. Adjustments may involve story format, publication timing, and the presentation of information across channels, connecting distribution requirements with newsroom production practices (Hase et al., 2023). Platform dependence therefore concerns more than the use of external services; it also involves the adjustments news organizations make to circulate their work through those services.

Audience metrics provide another point of connection between platform distribution and editorial decisions. Page views, click-through rates, social shares, and trending rankings help organizations monitor the reach of published stories. Such information can inform

decisions about content performance, while the pursuit of trending topics may intersect with commercial interests in news production (Abrar & Safrizal, 2021; Anderson, 2011). Audience measurement thus connects the distribution of news with organizational priorities, particularly when engagement indicators become part of decisions about which stories receive attention and resources.

These decisions take place within economic conditions that affect the capacity of news organizations to sustain their operations. Revenue sources, available resources, competition for audience attention, and the demands of digital distribution shape the environment in which news is produced. Commercial considerations therefore intersect with platform strategies and audience-engagement practices, linking the circulation of news to the financial conditions of media production. The extent and form of this relationship, however, depend on the organizational circumstances of individual news outlets.

A separate structural constraint concerns the concentration of ownership and resources within the media industry. Whereas platform dependency concerns reliance on external distribution infrastructures, ownership concentration concerns the distribution of power within media organizations and across the industry. Research on journalistic culture and professional roles places news production within wider institutional environments (Hanitzsch, 2006), while studies of Indonesia examine ownership concentration in relation to industry power and the democratic implications of information bias and limited diversity of perspectives (Firman & Restu Rahmawati, 2023; Lim, 2012). These structural conditions provide a broader basis for examining the institutional environment in which editorial decisions are made.

Editorial autonomy is also connected to the professional responsibilities of journalists operating within these institutional arrangements. Journalism's watchdog role depends on professional skepticism and ethical judgment, although reporting takes place within relationships of power that may involve owners, commercial partners, and other external stakeholders (Abrar, 2019). In digital news environments, these relationships coexist with dependence on platforms for distribution. The organizational conditions of journalism must therefore be considered alongside the technological infrastructures through which its work reaches audiences.

4. Emerging Ethical and Professional Challenges

Digital journalism places established professional responsibilities within a production environment characterized by rapid publication, continuous updates, audience competition, and the use of automated tools. Faster publication creates pressure to release information promptly, while reporting quality still depends on source verification, contextual assessment, and accuracy. Comprehensive reporting remains an important professional concern in this environment (Abrar, 2020). The central issue is how verification is maintained when news organizations work under competing demands for speed and completeness.

Data-driven reporting introduces further challenges because journalistic claims depend on the selection, construction, and interpretation of evidence. Large datasets can support investigations into complex issues, but their analytical value depends on the categories, indicators, and methods used to process them (Bounegru & Gray, 2025; Lewis, 2015). The relationship between data practices and journalistic knowledge also involves the epistemic values that guide the production and evaluation of evidence (Ekström et al., 2022). These considerations make data quality, methodological limitations, and the handling of personal information relevant to the credibility of data-based reporting.

The use of artificial intelligence adds questions about how information is produced, checked, and attributed. AI tools may assist newsroom tasks, but their outputs raise concerns about factual accuracy, transparency, privacy, and responsibility for published material. Research on AI and journalism addresses these issues through discussions of rights and responsibilities, changes in journalistic practice, and the ethical implications of generative AI (Shi & Sun, 2024; Vesala, 2022). A systematic review of AI-related journalism research likewise identifies algorithmic transparency, data privacy, and accountability as recurring concerns (Sonni et al., 2024). The use of automated systems therefore raises questions about how their outputs are verified and who remains responsible for the final published report.

These production issues also have implications for audience perceptions of journalistic credibility. Readers may evaluate a text differently depending on whether they believe it was written by a human or generated by AI. Research on perceptions of human- and AI-authored texts addresses this relationship between perceived authorship and audience evaluation (Lermann Henestrosa & Kimmerle, 2024). Related work examines the connections between AI developments, journalistic credibility, and public trust (Astuti et al., 2025). Audience responses are consequently relevant to understanding the reception of AI-

associated content, although the specific effects must be established from the findings of each study.

Commercial pressure presents another challenge when audience engagement becomes a consideration in editorial decisions. Metrics provide information about which stories attract attention, but the pursuit of popularity may also affect headlines, story selection, and the presentation of complex issues. The relationship between audience monitoring and commercial interests in trending news illustrates how organizational priorities can intersect with editorial choices (Abrar & Safrizal, 2021; Anderson, 2011). Concerns about excessive or sensationalized reporting further underline the importance of considering the social consequences of editorial presentation (Abrar, 2010).

These ethical concerns converge around responsibility for the decisions that shape published journalism. Verification concerns the reliability of information; data analysis concerns how evidence is selected and interpreted; AI adoption raises questions about automated outputs and transparency; and commercial pressures can influence which stories are prioritized and how they are presented. Research on AI adoption and responsibility addresses several of these issues, particularly the professional and accountability questions associated with technological change (Shi & Sun, 2024; Sonni et al., 2024; Vesala, 2022). Together, these areas identify the principal professional tasks through which accuracy, transparency, and accountability need to be maintained in digital journalism.

DISCUSSION

Digital transformation is better understood as a change in the relationships governing journalism than as a technological transition alone. Digital tools expand journalists' capacity to gather, analyze, and present information, while audience analytics and platform infrastructures influence how news is evaluated and circulated. These developments connect changes in journalistic production with broader processes of datafication and platformization (Bounegru & Gray, 2025; Nielsen & Fletcher, 2023; Steensen & Westlund, 2020). Their significance lies in how they interact: production practices affect the forms in which news reaches audiences, while distribution conditions can shape editorial priorities. Consequently, technological advancement does not automatically improve journalistic quality. Data contributes to public understanding when evidence is interpreted and contextualized

appropriately, just as audience metrics become useful when treated as information about news consumption rather than definitive measures of public interest.

The interaction between production and distribution also raises questions about who influences journalistic decisions. Journalists exercise editorial judgment over evidence and framing, media organizations establish editorial and commercial priorities, audiences generate signals of attention, and platforms influence the visibility of published content. Although these actors operate in different ways, their decisions and activities intersect within the digital news ecosystem (Nielsen & Fletcher, 2023). Audience data, for instance, can help newsrooms understand readers' interests, but popularity does not necessarily correspond to public importance (Abrar & Safrizal, 2021; Anderson, 2011). Similarly, adapting content to platform environments can extend its reach while increasing publishers' dependence on distribution systems they do not control. These conditions do not eliminate editorial autonomy, but they shape the circumstances in which editorial decisions are made. In Indonesia, such pressures intersect with concerns about media ownership and the diversity of perspectives available to the public (Firman & Restu Rahmawati, 2023; Lim, 2012). Editorial independence therefore depends on individual journalistic judgment as well as the organizational resources, commercial priorities, and distribution arrangements within which that judgment is exercised.

This distribution of influence has implications for journalistic accountability. When news production relies on external platforms, data infrastructures, and automated tools, it becomes important to distinguish responsibility for editorial content from influence over its circulation. News organizations remain responsible for verifying evidence, framing claims, and assessing material before publication, even when they rely on technologies or services provided by other actors. Platform operators, meanwhile, influence the systems through which news becomes visible. Recognizing these different roles helps clarify the limits of newsroom control without allowing technological dependence to become a general justification for editorial shortcomings. Accountability must therefore focus on decisions that journalists and media organizations make, including how they select and interpret data, assess information produced with AI, handle sensitive information, and determine what is suitable for publication (Bounegru & Gray, 2025; Lewis, 2015; Sonni et al., 2024). Transparency about AI use may help audiences evaluate journalistic content, but disclosure alone does not establish the reliability of that content (Lermann Henestrosa & Kimmerle, 2024). The use of digital tools consequently does not remove the need for professional

judgment or clear responsibility for the evidence and editorial reasoning underlying published news.

Taken together, these relationships provide a way to understand digital transformation beyond the adoption of new journalistic tools and formats. Its implications emerge from the interaction between technological capacity, the distribution of control, and professional accountability. Digital tools can strengthen reporting, but their contribution depends on how evidence is interpreted, how editorial priorities are established, and how news circulates through infrastructures controlled by different actors. For journalistic practice, this means that audience metrics should inform rather than determine editorial decisions, data should be interpreted critically, and AI-generated outputs should be assessed before publication. News organizations also need to remain attentive to the organizational and commercial conditions that affect editorial independence. These measures cannot eliminate dependence on external platforms, but they can help preserve clear lines of editorial responsibility within an increasingly mediated news environment.

The analysis is limited by its reliance on existing literature and selected examples of news coverage. It identifies relationships among technological change, editorial control, and accountability, but does not empirically establish causal effects or demonstrate that these relationships operate uniformly across news organizations. Further research could examine how Indonesian newsrooms balance audience metrics with public-interest reporting and how media ownership and platform dependence influence editorial decisions in practice.

CONCLUSION

This study concludes that digital transformation has reshaped journalism through the interaction of technological capabilities, audience behavior, algorithmic distribution, and organizational structures. These developments expand the possibilities for gathering and presenting information, but they also redistribute influence over news visibility and editorial priorities. The central finding is that the quality and public value of digital journalism depend not on technological adoption alone, but on how evidence is interpreted, editorial independence is maintained, and responsibility for published content is exercised. This study contributes to digital journalism scholarship by bringing data practices, audience metrics, platform dependence, media power, and professional accountability into a shared analytical

framework. This perspective clarifies the relationship between technological change and the conditions under which journalistic standards can be sustained.

Future research should examine how these relationships operate in newsroom practice, particularly in Indonesia. Empirical studies using interviews, newsroom observations, or comparative case studies could investigate how journalists and editors balance audience metrics with public-interest priorities, verify AI-assisted content, and respond to platform distribution requirements. Comparisons across media organizations with different ownership structures and resources could further clarify how institutional conditions shape editorial autonomy and accountability. Such research would help assess the practical implications of the relationships identified in this literature-based study and establish how they vary across journalistic contexts.

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