

Corporate Digital Responsibility Framework for Successful AI Implementation in News Media

CDR Framework for
AI Implementation in
News Media

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ABSTRACT

This study aims to identify the key components of Corporate Digital Responsibility (CDR) that are most relevant to AI implementation in news media organizations and to examine the relationships between these dimensions and the mediating factors that shape implementation outcomes. A quantitative approach was employed using Partial Least Squares Structural Equation Modeling to test a framework that integrates digital ethics, responsible innovation, and media sustainability with media credibility, operational effectiveness, and business sustainability as mediating variables toward AI implementation success. The findings indicate that CDR dimensions play a significant role in strengthening credibility, improving operational performance, and supporting long-term business sustainability, which collectively contribute to more effective AI implementation. The results highlight that ethical governance, innovation capability, and sustainability orientation not only influence AI adoption directly but also operate through key organizational mechanisms that enhance trust, efficiency, and resilience. These findings imply that news media organizations need to adopt an integrated and balanced approach to digital responsibility in order to ensure that AI integration supports both technological advancement and journalistic values while maintaining long-term organizational viability.

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INTRODUCTION

Recently, Artificial Intelligence (AI) technologies have driven an unprecedented transformation of the global media landscape, affecting news production and distribution for stakeholders, including news audiences. According to Diakopoulos (2019), the adoption of AI has accelerated newsroom adoption of automated content generation applications for personalized news delivery systems. Thus, this technological rise presents both opportunities and challenges for news media organizations, specifically as the digital transformation intersects with conventional journalistic values and practices (Arifin & Lennerfors, 2021). It is increasingly crucial to ensure that the integration of AI in news media operations maintains the competitive advantage and operational efficiency. Broussard et al. (2019) reveal that global news organizations leverage AI technologies in content creation, audience analytics, and distribution optimization. Even so, critical concerns regarding digital ethics, responsible innovation, and sustainable business practices arise alongside this technological advancement.

Corporate Digital Responsibility (CDR) has emerged as a crucial framework to reinforce organizations in navigating the complex intersection of digital technologies and social responsibility concerns (Lobschat et al., 2021). The recognition of CDR across industries is growing rapidly. Unfortunately, there is a notable literature gap, specifically regarding its application to news media organizations implementing AI technologies. News media organizations are facing ethical challenges in content integrity, editorial

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independence, and public trust. In the wake of AI disruption, these factors are particularly vulnerable, and organizations need to give them special attention. Furthermore, existing research on AI in journalism by Diakopoulos (2019), Lewis et al. (2019), and Dörr and Hollnbuchner (2021) often focuses either on technological aspects or on ethical considerations, without providing an integrated framework that comprehensively addresses both dimensions.

The CDR framework in this study is specifically designed to enable AI implementation in news media organizations and meet the requirements for successful AI implementation (Broussard et al., 2019; Dörr & Hollnbuchner, 2021). This study proposes that successful AI implementation in news media depends on a prudent integration of digital ethics, responsible innovation, and media sustainability, enabled through media credibility, operational effectiveness, and business sustainability. The CDR framework's primary objective is to provide a framework applied in the news media industry to support its AI implementation. The existing AI implementation in news media research has addressed many aspects; unfortunately, a significant gap remains in developing comprehensive frameworks that integrate CDR principles with successful AI implementation. Various studies focus either on the technological aspects of AI in journalism or on ethical considerations, without providing an integrated framework that comprehensively addresses both dimensions (Broussard et al., 2019; Diakopoulos, 2019).

Furthermore, the mediating roles of factors such as media credibility, operational effectiveness, and business sustainability in the relationship between CDR dimensions and AI implementation success have not been thoroughly examined. This study reveals that the mediating roles of factors, including media credibility, operational effectiveness, and business sustainability in the correlations between CDR dimensions and AI implementation, require meticulous analysis. Specifically, this study aims to identify the key components of CDR that are most relevant to AI implementation in news media organizations, examine the relationships between these CDR dimensions and the mediating factors that influence the realization of AI implementation, and develop a comprehensive framework that can guide news media organizations in supporting and managing their AI integration journey.

LITERATURE REVIEW & HYPOTHESIS DEVELOPMENT

Digital Ethics and Media Credibility

As AI technologies become increasingly embedded in newsroom operations, digital ethics emerges as a central component of corporate digital responsibility. Ethical considerations focus on both the immediate and long-term consequences of technological choices, particularly in relation to how automated systems shape journalistic processes (Floridi & Taddeo, 2016). Within the news media context, digital ethics is reflected in three key dimensions: algorithmic transparency, editorial accountability, and privacy protection. Algorithmic transparency is especially crucial because it involves openness about how algorithms influence content selection, prioritization, and presentation. Such transparency allows stakeholders to understand the basis of automated decisions and supports the preservation of institutional trust (Diakopoulos, 2019; Helberger, 2022).

Editorial accountability refers to the responsibility of media organizations to uphold journalistic integrity and independence amid increasing automation. This includes maintaining human oversight over AI systems and ensuring that editorial values remain central to decision-making processes (Lewis et al., 2019). At the same time, privacy protection addresses the responsible collection and management of audience data used to support algorithmic and analytical functions. News organizations must comply with privacy standards and sustain audience confidence while utilizing data-driven technologies (Hong et al., 2005). The relationship between digital ethics and media credibility is rooted in transparency and trust-building mechanisms. Ethical AI implementation can directly strengthen public trust and enhance organizational credibility (Helberger, 2022). Each dimension plays a reinforcing role: algorithmic transparency supports trust formation, editorial accountability safeguards journalistic

integrity, and privacy protection fosters a sense of security among audiences (Floridi & Taddeo, 2016; Diakopoulos, 2019; Zhaxylykbayeva et al., 2025). Collectively, these elements form a critical foundation for sustaining credibility in AI-driven news environments.

H1: Digital ethics implementation has a positive influence on media credibility.

Responsible Innovation and Operational Effectiveness

Responsible innovation in media refers to the adoption of technological advancements while simultaneously considering ethical, social, and organizational implications. In the context of journalism, innovation is not solely driven by technological efficiency but must also remain aligned with journalistic values and public interest (Pavlik, 2013). As AI becomes increasingly integrated into newsroom processes, responsible innovation serves as a guiding framework to ensure that technological transformation supports both operational performance and professional standards. Three interrelated dimensions shape responsible innovation in media organizations, namely, digital capability development, risk management, and stakeholder collaboration. Digital capability reflects the organization's capacity to effectively integrate digital tools and infrastructure into its operations, including the technical skills required to utilize AI systems productively. Risk management involves identifying and mitigating potential negative consequences associated with AI adoption, such as algorithmic bias, misinformation risks, and possible declines in journalistic quality (Küng, 2017).

Stakeholder collaboration further strengthens responsible innovation by incorporating diverse perspectives into decision-making processes. Effective digital transformation requires coordination among journalists, technology specialists, audiences, and regulatory institutions to ensure balanced and sustainable outcomes (Westlund et al., 2021). Contemporary research also emphasizes the operational benefits of responsible innovation, showing that organizations adopting such practices tend to achieve higher levels of efficiency and effectiveness (Jankovic & Curovic, 2023). Supporting this view, prior studies by Kunz and Wirtz (2023) indicate that digital capability development enhances operational efficiency, while Mueller (2021) shows that risk management improves performance outcomes, and stakeholder collaboration facilitates more effective implementation.

H2: Responsible innovation practices have a positive influence on operational effectiveness.

Media Sustainability and Business Sustainability

Media sustainability refers to the ability of news organizations to maintain long-term operational viability while continuously adapting to technological, social, and economic change. In the context of artificial intelligence adoption, sustainability is closely linked to the development of progressive business models, strengthened organizational capabilities, and the preservation of responsible journalistic practices. Sustainable business models increasingly serve as the financial foundation of digital media, as organizations rely on content monetization, subscription systems, and service-based innovations to generate revenue. Sjøvaag (2024) explains that AI simultaneously creates opportunities and challenges for new income streams. For example, AI-driven personalization can increase audience engagement and subscription retention, yet it also introduces risks related to filter bubbles and reduced information diversity.

Organizational capability plays a critical role in ensuring resilience amid technological disruption. Haron et al. (2023) emphasize that digital transformation is not limited to technology adoption but also involves structural adjustment and cultural change within media institutions. At the same time, journalistic sustainability focuses on maintaining credibility, ethics, and content quality in an AI-supported environment. Li et al. (2024) highlight that AI should strengthen journalism's societal function by improving accuracy,

supporting accountability, and encouraging public participation rather than diminishing its role. From a long-term perspective, organizational viability is closely tied to business sustainability. Lewis and Westlund (2014) note that the use of big data enables media companies to better understand audiences and develop relevant value propositions. Empirical evidence further by Sjøvaag (2024) indicates that sustainable business models enhance long-term viability, while Wirtz (2021) indicates that strong organizational capabilities support sustainable operations.

H3: Media sustainability practices have a positive influence on business sustainability.

Mediating Effect of Media Credibility, Operational Effectiveness, and Sustainability

Media credibility reflects the perceived trustworthiness, accuracy, and reliability of a news organization (Coatney, 2023). In AI-driven environments, credibility is closely shaped by transparency and responsibility in technological implementation. Tandoc et al. (2020) demonstrate that audiences' awareness of AI involvement in content creation and curation significantly influences credibility perceptions. Accordingly, media credibility functions as a key mediating mechanism between digital ethics and successful AI adoption. Ethical standards in AI use strengthen organizational legitimacy and stakeholder trust, thereby facilitating implementation success. Empirical evidence highlights the role of trust development in AI adoption, the broader impact of emerging technologies on journalistic credibility, and the influence of AI-generated news on public trust formation (Kerunga et al., 2020; Cetinkaya & Krämer, 2025; Sinclair, 2025).

Operational effectiveness, defined as the efficiency and quality of content production, audience engagement, and resource utilization, further explains how responsible innovation translates into implementation outcomes (D'Alonzo et al., 2022). AI enhances operational performance through automation, workflow optimization, and data-driven decision-making (Pataranutaporn et al., 2021). As a mediating variable, operational effectiveness captures the practical realization of innovation. Evidence emphasizes the importance of operational capabilities in AI adoption and indicates that journalists increasingly perceive automation as an opportunity to improve productivity rather than a threat (Schapals & Porlezza, 2020; Feuerriegel et al., 2023).

Business sustainability ultimately determines the long-term viability of media organizations in digitally transformed contexts (Westlund et al., 2021). AI-driven revenue diversification, cost efficiency, and competitive advantage contribute to sustainable business performance. Prior research underscores the significance of sustainability practices in technology adoption and the role of business model innovation in digital transformation (Lobschat et al., 2021; Pena-Fernandez et al., 2023).

H4a: Media credibility mediates the correlations between digital ethics and AI implementation success

H4b: Operational effectiveness mediates the correlations between responsible innovation and AI implementation success

H4c: Business sustainability mediates the correlations between media sustainability and AI implementation success.

Factors Influencing AI Implementation Success

The integration of artificial intelligence into newsroom workflows has fundamentally reshaped content production, verification, distribution, and editorial decision-making. Diakopoulos (2019) identifies key AI applications in content generation and analysis, news gathering and verification, audience engagement, and editorial support systems, all of which expand newsroom capabilities while raising concerns about autonomy and quality control. Broussard et al. (2019) stress that successful AI implementation requires balancing technical performance with ethical safeguards. Similarly, Goel et al. (2022) note that machine learning now underpins classification, personalization, audience analytics, and predictive assessment of news value, introducing both operational efficiencies and

challenges of transparency and accountability. The growing use of Natural Language Processing for summarization, translation, sentiment analysis, and verification further intensifies concerns regarding bias and contextual accuracy (Feuerriegel et al., 2023). These developments highlight the necessity of structured governance frameworks to ensure implementation success.

In this context, digital ethics constitutes a foundational determinant of AI implementation outcomes. Drawing on Floridi and Taddeo (2016), digital ethics encompasses data governance, algorithmic transparency, and accountability, which are essential in media settings. Helberger (2022) reinforces the importance of transparency, privacy protection, and editorial responsibility in AI-driven journalism, supporting H5a on the direct effect of digital ethics on AI implementation success. Responsible innovation extends this perspective by embedding ethical foresight and stakeholder consideration into digital transformation strategies. Building on Mueller (2021), responsible innovation reflects organizational capacity to integrate AI while maintaining trust and legitimacy. Finally, media sustainability emphasizes adaptive business models in AI-driven environments. Sjøvaag (2024) underscores the need to realign revenue structures and platform strategies to secure long-term viability, thereby supporting H5c regarding the direct influence of media sustainability on AI implementation success.

H5a: Digital ethics has a significant influence on AI implementation success.

H5b: Responsible innovation has a significant influence on AI implementation success.

H5c: Media sustainability has a significant influence on AI implementation success.

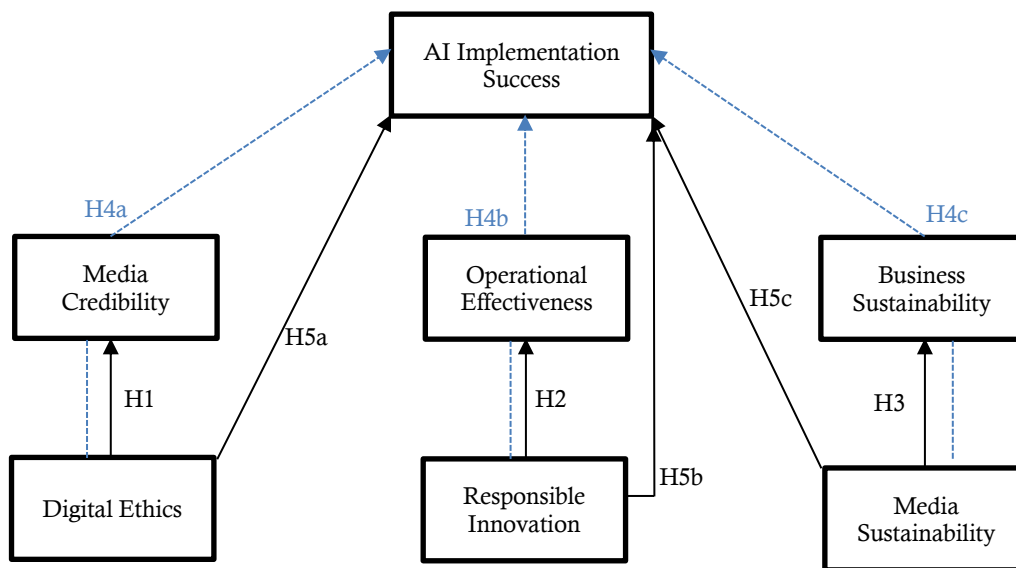


Figure 1. Conceptual Model of CDR Framework for AI Implementation

This study develops a conceptual framework to explain AI implementation in news media by integrating corporate digital responsibility and media management perspectives within the broader context of digital transformation. In AI-driven environments, technological systems increasingly influence content production, audience relationships, and editorial decision-making, making responsible governance essential (Kunz & Wirtz, 2023). Within this context, CDR highlights the responsible use of digital technologies to uphold journalistic integrity, protect user privacy, ensure algorithmic transparency, and maintain editorial independence (Dörr & Hollnbuchner, 2021). Data responsibility, in particular, plays a central role in safeguarding audience trust through transparent and ethical data practices, while ethical conduct and accountability also contribute to long-term organizational performance and competitive advantage (Mihale-Wilson et al., 2022; Adib et al., 2025). Building on these principles, the proposed framework emphasizes the balance between technological innovation and journalistic values in the process of AI

integration (Diakopoulos, 2019; Zamith, 2019). It is structured around three exogenous constructs, namely, digital ethics, responsible innovation, and media sustainability, and four endogenous constructs, namely, media credibility, operational effectiveness, business sustainability, and AI implementation success. According to Figure 1, the structure reflects how ethical considerations, innovation capacity, and sustainability practices interact to shape credibility, efficiency, and long-term viability, ultimately determining the success of AI implementation in the digital media landscape.

RESEARCH METHODS

This research uses a quantitative method to validate the proposed conceptual framework. This approach enables a comprehensive assessment of the complex correlations among CDR dimensions, mediating factors, and AI implementation success in news media organizations. This study's target population comprises news media organizations that have successfully implemented or are currently implementing AI technologies. A stratified random sampling technique is applied to ensure representative coverage of different types of news media organizations (print, digital, broadcast) and varying organizational sizes (small, medium, large). Data collection was conducted through an online survey distributed to key informants within each organization, including editorial managers, technology officers, and AI implementation team members.

The measurement instrument was adapted from validated scales in prior studies and refined to fit the context of news media organizations, drawing on surveys developed by Weber-Lewerenz (2021) and Riemann (2024). The questionnaire was structured to capture the multidimensional aspects of corporate digital responsibility and AI implementation. Digital ethics was operationalized through algorithmic transparency, editorial accountability, and privacy protection (Floridi & Taddeo, 2016; Helberger, 2022). Responsible innovation included digital capability, innovation risk management, and stakeholder collaboration, while media sustainability covered business model innovation, organizational capability, and journalistic sustainability (Mueller, 2021; Sjøvaag, 2024). Media credibility was measured through public trust, journalistic quality, and audience satisfaction (Diakopoulos, 2025; Zhaxylykbayeva et al., 2025). Operational effectiveness reflected financial performance, digital adaptability, and social value by Mueller (2021) and Kunz and Wirtz (2023), and business sustainability encompassed newsroom efficiency, operational sustainability, and technology adoption (Wirtz et al., 2021; Feher, 2024). AI implementation success was captured through technical integration, organizational adoption, and implementation performance (Lobschat et al., 2021; Feuerriegel et al., 2023; Peña-Fernández et al., 2023). All items were measured using a five-point Likert scale to ensure consistency and content validity.

Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM), an approach suitable for examining complex research models involving multiple constructs and interrelationships (Hair et al., 2021). The analysis followed a two-stage procedure. First, the measurement model was evaluated to ensure the reliability and validity of the constructs by assessing indicator reliability through outer loadings greater than 0.70, internal consistency using composite reliability values above 0.70, convergent validity based on average variance extracted (AVE) exceeding 0.50, and discriminant validity using the Heterotrait–Monotrait (HTMT) ratio below 0.90. Second, the structural model was assessed to examine the hypothesized relationships by analyzing path coefficients (β), the coefficient of determination (R^2) to determine explanatory power, effect sizes (f^2) to evaluate the contribution of each predictor, and predictive relevance (Q^2) to assess the model's out-of-sample predictive capability.

RESULTS

Table 1 presents the results of the measurement model assessment, demonstrating that all constructs meet the recommended standards for validity and reliability. The outer loadings for all indicators range from 0.71 to 0.89, exceeding the commonly accepted threshold of 0.70. This indicates that each item has a strong contribution to its respective

construct and adequately represents the underlying concept being measured. Internal consistency reliability is also well established across all variables. Cronbach’s Alpha values fall between 0.90 and 0.93, while Composite Reliability values range from 0.93 to 0.94. These figures confirm that the indicators within each construct are consistently measuring the same concept. Importantly, the reliability values remain below 0.95, suggesting that the items are not excessively redundant and still capture meaningful variation within each dimension. Convergent validity is supported by the Average Variance Extracted (AVE) values, which range from 0.60 to 0.66. Since all AVE values exceed the minimum requirement of 0.50, more than half of the variance in the indicators is explained by their respective constructs. Among the variables, AI Implementation Success and Media Credibility show slightly higher AVE values, indicating a particularly strong convergence of their measurement indicators.

Table 1. Validity and Reliability Result

Construct	Loading	Cronbach’s Alpha	Composite Reliability	AVE
Digital Ethics	0.72 – 0.86	0.91	0.93	0.61
Responsible Innovation	0.73 – 0.87	0.92	0.94	0.63
Media Sustainability	0.71 – 0.85	0.90	0.93	0.60
Media Credibility	0.74 – 0.88	0.93	0.94	0.65
Operational Effectiveness	0.72 – 0.86	0.91	0.93	0.62
Business Sustainability	0.73 – 0.87	0.92	0.94	0.64
AI Implementation Success	0.75 – 0.89	0.93	0.94	0.66

Table 2 presents the discriminant validity assessment using the HTMT criterion, showing that all inter-construct correlation values range from 0.66 to 0.85, which are below the recommended threshold of 0.90. This indicates that each construct is empirically distinct while still maintaining theoretically meaningful relationships with other variables in the model. Relatively stronger associations are observed between responsible innovation and AI implementation success (0.83), business sustainability and AI implementation success (0.85), and media sustainability and business sustainability (0.82), reflecting logical conceptual linkages without indicating overlap. At the same time, lower correlations, such as those between digital ethics and operational effectiveness (0.66) and between digital ethics and media sustainability (0.68), suggest clearer separation among these constructs. The HTMT results confirm that all variables demonstrate adequate discriminant validity, meaning that each construct captures a unique dimension and the measurement model is appropriate for further structural analysis.

Table 2. Discriminant Validity Test

Construct	DE	RI	MS	MC	OE	BS
Responsible Innovation (RI)	0.72					
Media Sustainability (MS)	0.68	0.74				
Media Credibility (MC)	0.70	0.76	0.79			
Operational Effectiveness (OE)	0.66	0.73	0.77	0.81		
Business Sustainability (BS)	0.69	0.75	0.82	0.78	0.84	
AI Implementation Success (AIIS)	0.71	0.83	0.76	0.80	0.82	0.85

According to Table 3, the direct effect results indicate that all hypothesized relationships are positive and statistically significant. Digital ethics exerts a strong influence on media credibility ($\beta = 0.582$, $p < 0.001$), demonstrating that higher ethical implementation in AI-driven media practices substantially enhances public trust and journalistic quality. Similarly, responsible innovation significantly improves operational effectiveness ($\beta = 0.614$, $p < 0.001$), suggesting that structured innovation practices contribute meaningfully to financial performance and digital adaptability. Media sustainability also shows a robust positive impact on business sustainability ($\beta = 0.629$, $p < 0.001$), highlighting the strategic importance of sustainable media practices for long-term organizational resilience. Beyond these primary paths, digital ethics ($\beta = 0.213$),

responsible innovation ($\beta = 0.247$), and media sustainability ($\beta = 0.226$) each have significant direct effects on AI implementation success, indicating that these foundational practices contribute to successful AI adoption even without intermediary variables.

Table 3. Hypothesis Testing

Hypothesis	Relationship	Original Sample (β)	p-Values
H1	Digital Ethics → Media Credibility	0.582	0.000
H2	Responsible Innovation → Operational Effectiveness	0.614	0.000
H3	Media Sustainability → Business Sustainability	0.629	0.000
H4a	Digital Ethics → Media Credibility → AI Implementation Success	0.241	0.000
H4b	Responsible Innovation → Operational Effectiveness → AI Implementation Success	0.268	0.000
H4c	Media Sustainability → Business Sustainability → AI Implementation Success	0.259	0.000
H5a	Digital Ethics → AI Implementation Success	0.213	0.000
H5b	Responsible Innovation → AI Implementation Success	0.247	0.000
H5c	Media Sustainability → AI Implementation Success	0.226	0.000

Regarding indirect effects, the mediation analysis further confirms that the influence of the three exogenous constructs extends to AI implementation success through their respective mediators. Digital ethics positively affects AI implementation success via media credibility ($\beta = 0.241$, $p < 0.001$), implying that ethical practices strengthen AI outcomes by first enhancing credibility. Responsible innovation also demonstrates a significant indirect effect through operational effectiveness ($\beta = 0.268$, $p < 0.001$), indicating that innovation improves AI success by increasing operational strength. Likewise, media sustainability contributes to AI implementation success through business sustainability ($\beta = 0.259$, $p < 0.001$). The significance of both direct and indirect paths suggests partial mediation in all three cases, meaning that the predictors influence AI implementation both independently and through their respective organizational performance mechanisms.

Table 4. R Square Test

Endogenous Variable	R ²	Category
Media Credibility	0.34	Moderate
Operational Effectiveness	0.37	Moderate
Business Sustainability	0.40	Moderate
AI Implementation Success	0.69	Moderate–Strong

Table 4 presents the coefficient of determination (R^2) values for the endogenous constructs, indicating the model’s explanatory power. Media credibility has an R^2 value of 0.34, suggesting that digital ethics explains 34% of the variance in credibility, which can be considered a moderate level of predictive accuracy. Operational effectiveness shows an R^2 of 0.37, meaning that responsible innovation accounts for 37% of its variation, also reflecting a moderate explanatory capacity. Similarly, business sustainability reaches an R^2 of 0.40, indicating that media sustainability contributes substantially to explaining long-term organizational continuity. The highest value is observed in AI implementation success, with an R^2 of 0.69, categorized as moderate–strong. This result implies that the combined influence of digital ethics, responsible innovation, media sustainability, and their respective mediating variables accounts for a considerable portion of the variance in AI implementation outcomes.

Table 5. Effect Size Test

Relationship	f ²	Category
Digital Ethics → Media Credibility	0.34	Large
Responsible Innovation → Operational Effectiveness	0.37	Large
Media Sustainability → Business Sustainability	0.40	Large
Digital Ethics → AI Implementation Success	0.08	Small–Medium
Responsible Innovation → AI Implementation Success	0.10	Medium
Media Sustainability → AI Implementation Success	0.09	Small–Medium
Media Credibility → AI Implementation Success	0.14	Medium
Operational Effectiveness → AI Implementation Success	0.16	Medium
Business Sustainability → AI Implementation Success	0.13	Medium

Table 5 presents the effect size (f²) results, which indicate the magnitude of each predictor’s contribution to the explained variance of the endogenous constructs. The findings show that digital ethics has a large effect on media credibility (f² = 0.34), responsible innovation has a large effect on operational effectiveness (f² = 0.37), and media sustainability demonstrates a large effect on business sustainability (f² = 0.40). These results suggest that each primary antecedent plays a substantial role in shaping its corresponding organizational outcome. In contrast, the direct effects of digital ethics (f² = 0.08), responsible innovation (f² = 0.10), and media sustainability (f² = 0.09) on AI Implementation Success fall within the small to medium range, indicating that their influence on AI success is present but not dominant when considered independently. Meanwhile, the mediating constructs show moderate effect sizes on AI implementation success, with media credibility (f² = 0.14), operational effectiveness (f² = 0.16), and business sustainability (f² = 0.13) contributing meaningfully to the model.

Table 6. Predictive Relevance

Variable	Q ²	Interpretation
Media Credibility	0.21	Predictive relevance (Medium)
Operational Effectiveness	0.24	Predictive relevance (Medium)
Business Sustainability	0.26	Predictive relevance (Medium)
AI Implementation Success	0.41	Strong predictive relevance

Table 6 reports the predictive relevance (Q²) values obtained through the blindfolding procedure, indicating the model’s capability to predict endogenous constructs. All Q² values are above zero, confirming that the model has adequate predictive relevance. Media credibility (Q² = 0.21), operational effectiveness (Q² = 0.24), and business sustainability (Q² = 0.26) each demonstrate moderate predictive relevance, suggesting that the exogenous variables provide meaningful predictive power for these outcomes. The highest value is observed for AI implementation success (Q² = 0.41), which indicates strong predictive relevance and reflects the model’s substantial ability to predict successful AI adoption based on the combined influence of the antecedent and mediating variables.

DISCUSSION

The findings provide strong empirical support for the proposed framework linking CDR dimensions to AI implementation success in news media organizations. First, digital ethics significantly influences media credibility (β = 0.582, p = 0.000), confirming H1. This result reinforces the argument that transparency, accountability, and privacy protection are central to sustaining public trust in AI-driven journalism. As conceptualized by Floridi and Taddeo (2016), digital ethics establishes normative foundations for responsible data and algorithm governance. In newsroom contexts, algorithmic transparency and editorial accountability are essential for preserving institutional legitimacy (Diakopoulos, 2019; Helberger, 2022). The strong coefficient indicates that ethical governance mechanisms directly strengthen perceived credibility, aligning with Tandoc et al. (2020), who show that awareness of AI involvement affects audience trust.

Second, responsible innovation significantly enhances operational effectiveness ($\beta = 0.614$, $p = 0.000$), supporting H2. This finding confirms that digital capability development, risk management, and stakeholder collaboration are not merely ethical commitments but operational drivers. Pavlik (2023) emphasizes that innovation in journalism must integrate technological efficiency with professional standards. The empirical result aligns with Kunz and Wirtz (2023), who link digital capability to efficiency gains, and Mueller (2021), who highlights the performance benefits of structured digital responsibility. Furthermore, stakeholder collaboration, as emphasized by Westlund et al. (2021), appears instrumental in translating innovation into measurable operational improvements.

Third, media sustainability strongly predicts business sustainability ($\beta = 0.629$, $p = 0.000$), validating H3. This confirms that adaptive business models, organizational resilience, and journalistic integrity are foundational for long-term viability. Sjøvaag (2024) argues that AI reshapes revenue structures and subscription dynamics, while Lewis and Westlund (2014) highlight the strategic value of big data in developing sustainable value propositions. The findings indicate that sustainability practices are not peripheral but central to maintaining competitiveness in AI-driven environments.

The mediation results further clarify the mechanisms through which these constructs influence AI implementation success. Media credibility significantly mediates the effect of digital ethics ($\beta = 0.241$, $p = 0.000$). This suggests that ethical practices enhance AI success partly by strengthening stakeholder trust, consistent with Cetinkaya and Krämer (2025) and Sinclair (2025), who emphasize trust formation in AI contexts. Similarly, operational effectiveness mediates the relationship between Responsible Innovation and AI implementation success ($\beta = 0.268$, $p = 0.000$). This finding reflects the practical dimension of innovation described by Pataranutaporn et al. (2021) and Feuerriegel et al. (2023), where automation and data-driven systems improve performance outcomes. Business sustainability also mediates the relationship between media sustainability and AI implementation success ($\beta = 0.259$, $p = 0.000$), aligning with Lobschat et al. (2021) and Pena-Fernandez et al. (2023) on the importance of sustainability-oriented digital transformation.

Importantly, the direct effects remain significant (H5a–H5c), indicating partial mediation. Digital ethics ($\beta = 0.213$), responsible innovation ($\beta = 0.247$), and media sustainability ($\beta = 0.226$) each exert independent influence on AI implementation success. This confirms that, beyond mediated pathways, foundational governance structures, innovation capabilities, and sustainability strategies directly determine successful AI integration. In line with Broussard et al. (2019) and Goel et al. (2022), effective AI adoption requires simultaneous attention to ethical safeguards, operational readiness, and strategic alignment. The results substantiate the theoretical integration of CDR and media management perspectives, demonstrating that ethical governance, responsible innovation, and sustainability practices collectively and directly drive AI implementation success in contemporary news organizations.

CONCLUSION

This study develops and empirically validates a comprehensive framework explaining how CDR supports successful AI implementation in news media organizations through the integration of digital ethics, responsible innovation, and media sustainability. The findings demonstrate that these three dimensions significantly influence AI implementation both directly and indirectly through the mediating roles of media credibility, operational effectiveness, and business sustainability. The results highlight that AI adoption in newsrooms is not solely a technological matter but requires a balanced approach that combines ethical governance, innovation capability, and long-term sustainability. Credibility strengthens public trust, operational effectiveness improves performance, and business sustainability ensures organizational resilience, collectively translating CDR principles into measurable implementation outcomes.

The study contributes theoretically by extending the concept of CDR into the context of AI-driven journalism and by integrating multiple perspectives into a unified model that explains the pathways leading to implementation success. Practically, the findings offer a structured guide for media organizations to design integrated CDR strategies, balance ethical and technological priorities, and allocate resources more effectively. The validated framework can also serve as a reference for monitoring progress, supporting internal decision-making, and communicating responsible AI practices to stakeholders, including audiences, employees, and regulators.

Despite these contributions, several limitations should be acknowledged. The cross-sectional design restricts causal interpretation, and reliance on a single respondent per organization may introduce bias. The study also does not deeply examine contextual influences such as organizational culture, leadership, and regulatory environments, and it focuses primarily on success factors rather than implementation barriers. Future research is encouraged to apply longitudinal approaches, involve multiple informants, and test the framework across different countries and media systems. Further studies may also explore the evolving interactions among CDR dimensions, examine the role of specific AI technologies, compare different types of media organizations, and investigate how responsible AI practices influence audience trust, engagement, and loyalty over time.

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