

Article type:
Original Research

Article history:
Received 07 May 2026
Revised 29 June 2026
Accepted 17 August 2026
Initial Publish 27 September 2026
Published online 01 January 2027

Hayder. Abbas Hussein ALmahdi¹,
Manouchehr. Ansari^{2*}

1 PhD Student, Department of Media Management and Business Communication, Faculty of Management, University of Tehran, Tehran, Iran

2 Associate Professor, Department of Media Management and Business Communication, Faculty of Management, University of Tehran, Tehran, Iran

Corresponding author email address:
mansari@ut.ac.ir

How to cite this article:
Abbas Hussein ALmahdi, H., & Ansari, M. (2027). Identification and Analysis of Factors Influencing the Dissemination of Fake News in Iraqi Digital Journalism Using the DEMATEL Method. *Future of Work and Digital Management Journal*, 5(1), 1-20. <https://doi.org/10.61838/fwdmj.325>



© 2027 the authors. This is an open access article under the terms of the Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) License.

Identification and Analysis of Factors Influencing the Dissemination of Fake News in Iraqi Digital Journalism Using the DEMATEL Method

ABSTRACT

This study aimed to identify, prioritize, and analyze the causal relationships among the factors influencing the dissemination of fake news in Iraqi digital journalism using the Decision-Making Trial and Evaluation Laboratory (DEMATEL) method. This applied descriptive-analytical study was conducted using a DEMATEL-based expert judgment approach. The study population consisted of specialists in journalism, digital media, communication studies, media management, political communication, and fact-checking in Iraq. Using purposive and criterion-based sampling, 18 experts with at least five years of relevant academic or professional experience were selected. Following a review of the literature and expert consultation, 12 factors affecting fake-news dissemination were identified. Participants evaluated the direct influence of each factor on the others using a five-point scale ranging from 0 to 4. The initial direct-relation matrix was aggregated and normalized, after which the total-relation matrix and the D, R, D+R, and D-R indices were calculated to determine factor prominence and causal position. DEMATEL analysis showed that social media amplification had the highest prominence within the causal system (D+R=2.503), followed by political influence and polarization (D+R=2.484) and algorithmic recommendation and platform dynamics (D+R=2.468). Political influence and polarization showed the strongest positive net causal effect (D-R=0.118), while anonymous and unreliable information sources (D-R=0.089), weak verification and fact-checking mechanisms (D-R=0.088), social media amplification (D-R=0.067), and algorithmic recommendation mechanisms (D-R=0.058) were also identified as causal drivers. Low media literacy among audiences showed the strongest negative net effect (D-R=-0.285), indicating a predominantly dependent position. Speed-oriented production, economic competition, regulatory weakness, technological accessibility, and limited institutional cooperation were likewise classified mainly as effect factors. Fake-news dissemination in Iraqi digital journalism is driven by an interconnected system in which political, technological, and professional factors exert the strongest upstream influence; therefore, interventions should prioritize political independence, verification quality, editorial gatekeeping, source reliability, and platform-level amplification mechanisms rather than focusing only on downstream audience-related consequences.

Keywords: Fake news; Digital journalism; Iraq; DEMATEL; Social media; Political polarization; Fact-checking; Media literacy

Introduction

The rapid transformation of journalism under conditions of digitalization has fundamentally altered the processes through which news is produced, distributed, consumed, evaluated, and recirculated. Digital journalism has expanded access to information and enabled audiences to encounter breaking events almost instantaneously, while simultaneously weakening many of the temporal, professional, and institutional filters that traditionally separated the production of news from its public dissemination. News websites, social networking platforms, mobile applications, messaging services, algorithmic

recommendation systems, and user-generated content now operate within a closely interconnected information environment in which professional journalism competes continuously with informal, partisan, anonymous, and automated information sources. Within this environment, fake news has developed from an episodic problem of journalistic inaccuracy into a persistent structural challenge for contemporary information systems. Fake news can exploit the speed, scale, interactivity, and low publication barriers of digital communication, allowing inaccurate or deliberately misleading claims to circulate before professional verification mechanisms can respond. Contemporary research accordingly treats fake news not merely as false content but as a multidimensional information phenomenon involving misinformation, disinformation, manipulation, technological infrastructures, audience behavior, economic incentives, and institutional vulnerabilities [1, 2]. Consequently, understanding why fake news spreads requires moving beyond the simple distinction between true and false messages and examining the network of causal conditions that enables misleading information to gain visibility, credibility, and social influence.

The societal significance of this problem has increased substantially with the growing centrality of social media to public communication. Social platforms no longer function simply as secondary distribution channels for content produced by established media institutions; rather, they constitute complex information environments in which professional reporting, personal opinion, political communication, rumors, advertising, visual content, and coordinated influence campaigns coexist and compete for attention. The architecture of these platforms favors rapid circulation, continuous engagement, emotional reactions, and repeated sharing, conditions that can facilitate the transmission of misleading or decontextualized information. Research on fake news in social media environments has emphasized that its consequences extend beyond individual misunderstanding and may affect social trust, political participation, institutional legitimacy, public attitudes, and patterns of collective behavior [3]. In the post-truth communication environment, this challenge becomes particularly important because information manipulation can interact with ideological commitments and emotional responses, making factual correction alone insufficient to reverse misinformation once it has become embedded in public discourse [4]. Fake news therefore represents both an informational problem and a wider democratic and social problem: the issue concerns not only whether a particular statement is accurate but also how misleading narratives are constructed, amplified, legitimized, and maintained through interactions among political actors, media organizations, technologies, and audiences.

A defining characteristic of the contemporary fake-news environment is the increasing role of technological systems in determining which information becomes visible and how rapidly it circulates. Algorithmic recommendation, personalization, automated content production, and artificial intelligence have expanded the capacity to create and distribute persuasive information at unprecedented speed and scale. At the same time, these developments have stimulated increasingly sophisticated approaches to fake-news detection. Recent studies have examined artificial intelligence as an important component of automated fake-news detection and have demonstrated growing interest in machine learning, deep learning, explainable artificial intelligence, and large language models as instruments for identifying misleading content [5]. Hybrid deep-learning approaches integrating semantic representation and explainability have been developed to increase both detection accuracy and interpretability [6], while text-to-image transformation and customized computational models illustrate the continuing diversification of technical detection strategies [7]. Comparative evaluations of BERT-like architectures and large language models have similarly demonstrated the increasing sophistication of computational approaches to distinguishing fake from legitimate news [8]. Moreover, multimodal approaches recognize that misinformation

increasingly combines textual, visual, and contextual elements, making single-modality detection insufficient in many digital environments. Multi-modal domain adaptation has therefore been proposed to improve detection across heterogeneous information settings [9], while multimodal interaction and graph contrastive learning have been used to capture complex relationships among different content features and network structures [10]. These developments are important, but they also reveal a critical limitation in approaching fake news primarily as a classification problem: even highly accurate detection technologies cannot fully explain the organizational, social, political, and professional conditions that cause misleading information to be generated and widely disseminated in the first place.

The persistence of fake news despite major advances in automated detection indicates that technological intervention must be combined with analysis of human and institutional factors. Digital journalism operates under strong pressure to maximize speed, audience reach, visibility, and engagement. These pressures may reduce the time available for verification and increase dependence on rapidly circulating online sources, particularly when newsroom resources are limited. Under conditions of intense competition, sensational or emotionally provocative information may possess a structural advantage because such content can attract greater interaction before its accuracy is established. Information asymmetry further complicates this environment because audiences frequently lack access to the evidence, professional resources, or contextual knowledge required to independently evaluate competing claims [2]. At the organizational level, fake news may also generate reputational crises that compel institutions and news organizations to respond strategically to inaccurate allegations, public uncertainty, or rapidly escalating narratives. Crisis communication research has therefore emphasized that organizations must manage both the factual dimensions of misinformation and its effects on public reputation [11]. Other research suggests that strategic responses may include forms of watchful waiting, selective engagement, evidence-based correction, and proactive reputation management depending on the characteristics and trajectory of the misinformation crisis [12]. Importantly, organizational responses cannot depend exclusively on factual rebuttal because fake-news attacks may generate emotional and legitimacy-related consequences that remain even after factual inaccuracies are challenged [13]. Thus, fake news functions through an interaction between information content and the social conditions through which that content acquires meaning and influence.

Audience characteristics constitute another important dimension of this problem. The extraordinary volume of information available online has transferred part of the traditional gatekeeping function from professional journalists to individual users, who are increasingly required to evaluate source credibility, identify manipulative framing, differentiate evidence from opinion, and recognize artificially generated or altered content. Media literacy has therefore become an important protective capacity in the digital information environment. Educational approaches to fake-news detection emphasize the need to develop critical evaluation abilities early and systematically rather than assuming that digital familiarity automatically produces information literacy [14]. This need has intensified with the growing availability of artificial intelligence tools capable of producing realistic text, images, audio, and video. Strategies designed to strengthen media literacy among younger generations have consequently emphasized critical source evaluation, awareness of AI-generated misinformation, verification practices, and reflective engagement with digital content [15]. Low media literacy may increase the likelihood that users accept, redistribute, or reinforce misleading information, especially where misinformation corresponds with existing beliefs or emotionally charged narratives. Audience vulnerability should nevertheless not be interpreted as an isolated individual deficiency. The difficulty of recognizing fake news is partly produced by the increasingly

sophisticated design of misleading content and by platform environments that place credible reporting and unreliable material within similar visual and interactive formats. Accordingly, audience-related factors need to be analyzed alongside the technological and institutional conditions that structure exposure to misinformation.

Legal and regulatory responses constitute a further layer of the fake-news problem. Governments and regulatory bodies face the challenge of restricting harmful disinformation without undermining freedom of expression, journalistic independence, political pluralism, or legitimate criticism. This balance is particularly difficult because misinformation crosses jurisdictional boundaries and is often distributed through private digital platforms whose governance practices may have substantial consequences for public communication. Comparative regulatory experience demonstrates an evolution from voluntary and soft-law mechanisms toward stronger platform-accountability frameworks. The European Union's attempts to address disinformation, including the shift from earlier soft-law initiatives toward the Digital Services Act, illustrate how regulatory strategies increasingly focus on systemic responsibilities, transparency, risk mitigation, and platform governance rather than merely criminalizing individual false statements [16]. Such developments demonstrate that fake-news control requires coordination among public authorities, media institutions, technology companies, researchers, civil-society organizations, and fact-checking networks. At the same time, regulatory mechanisms alone cannot eliminate misinformation when professional weaknesses, political incentives, audience behavior, and technological amplification continue to reinforce one another. The problem is therefore better conceptualized as a system of interacting influences rather than as a discrete regulatory failure.

The systemic nature of misinformation becomes even clearer when its effects are considered outside conventional political news. False or misleading information may create organizational uncertainty, reputational losses, market distortions, and operational disruptions. Research linking misinformation and disinformation to supply-chain risks has shown how unreliable information can generate wider vulnerabilities and has highlighted the potential contribution of resilient information infrastructures and technologies such as blockchain to verification and risk management [17]. This broader perspective is relevant to journalism because digital news occupies a central position in the transmission of information among organizations, citizens, markets, and public institutions. The consequences of inaccurate reporting may therefore extend substantially beyond the immediate media environment. At the same time, the increasing diversity of fake-news detection approaches shows that no single technological solution has yet become sufficient for addressing the phenomenon comprehensively. Taxonomic and comparative research on fake-news detection has identified substantial variation in the types of misinformation, available datasets, representation methods, classification strategies, and evaluation approaches used across the field [1]. These findings reinforce the need to complement content-detection research with causal analysis capable of identifying why certain media environments remain particularly susceptible to fake-news production and circulation.

The Iraqi digital journalism environment provides an especially important context for such analysis. Iraq's media system has undergone extensive transformation alongside political change, technological expansion, intensified use of social media, and the multiplication of news outlets and online communication actors. Digital platforms have created opportunities for greater pluralism and rapid access to information, but they have also introduced new vulnerabilities associated with political polarization, source verification, online harassment, partisan communication, and the circulation of unverified material. Research focusing specifically on Iraq has demonstrated that journalists and news organizations may be exposed to

coordinated or networked trolling, particularly when reporting critically on politically sensitive issues [18]. Such practices are significant because trolling and coordinated attacks may not merely target individual journalists; they may contribute to a broader communication environment in which credibility is contested, narratives are strategically amplified, and audiences encounter competing claims about the reliability of professional news organizations. The Iraqi context therefore illustrates how fake news may become intertwined with political contestation, journalistic vulnerability, and digital network dynamics.

Studies of Iraqi journalism and Iraq-related news representation further indicate the importance of examining how media framing, news production, and social-network circulation interact. Research examining the representation of Iraq-related news in mass media and its influence on public opinion on Twitter has illustrated the capacity of news framing to extend beyond conventional media and shape online discussion and audience perceptions [19]. Although focused on a specific issue, such evidence is relevant to understanding the broader interdependence between journalistic representation and social-media reactions. Similarly, research examining social problems through Iraqi newspapers provides evidence of the continuing importance of newspapers and journalistic framing in defining, interpreting, and communicating issues of public concern [20]. In a digitalized media environment, these traditional journalistic functions increasingly intersect with online circulation mechanisms. A report published by a newspaper or digital news site can be reproduced through social platforms, excerpted without context, repackaged into visual content, discussed by influencers, or incorporated into partisan narratives. Consequently, the boundary between institutional journalism and networked communication has become increasingly porous, and the factors responsible for fake-news dissemination must be examined across rather than within individual media channels.

Political polarization is particularly relevant in this context because misleading information often acquires influence not solely through its apparent factual plausibility but through its compatibility with broader political identities, grievances, or narratives. Digitally networked political communication can enable actors to challenge journalists, attack competing media organizations, circulate alternative interpretations, and undermine confidence in professional news sources. The networked trolling of journalists documented in the Iraqi context illustrates the pressures that digital communication can impose upon journalistic authority and suggests that the information environment itself may become contested terrain [18]. Under such circumstances, weak editorial gatekeeping or insufficient verification may have consequences beyond individual errors: inaccurate publication may be rapidly exploited, reproduced, or reframed across networks. Conversely, even accurate reporting may be confronted by strategically circulated false claims. Fake-news dissemination in Iraqi digital journalism must therefore be understood in relation to the interaction between professional journalistic routines, political incentives, platform structures, unreliable sources, and audience responses rather than being reduced to a simple failure of journalists to verify information.

This interaction also explains why conventional variable-ranking approaches may be insufficient for identifying policy priorities. Factors such as political influence, weak verification, audience media literacy, algorithmic amplification, editorial gatekeeping, economic competition, regulatory weakness, and unreliable sourcing do not operate independently. Political pressure can affect editorial decision-making; weak editorial control can increase speed-oriented publication; rapid publication can increase dependence on unverified sources; social-media amplification can increase visibility before corrections appear; algorithmic recommendation can further intensify exposure; low audience media literacy can increase the probability of redistribution; and limited institutional coordination can reduce the effectiveness of corrective responses.

The resulting relationships are recursive and mutually reinforcing. Contemporary scholarship on misinformation similarly suggests that fake news has implications for institutions, reputation, democracy, risk management, and public communication, demonstrating the need for integrated rather than fragmented analytical perspectives [3, 11, 17]. The central methodological challenge is consequently not only to identify relevant factors but also to distinguish those that primarily drive the system from those that mainly emerge as consequences of other influences.

The Decision-Making Trial and Evaluation Laboratory (DEMATEL) method is well suited to this analytical requirement because it enables complex factors to be represented as an interconnected causal system. Rather than treating determinants as independent variables or generating only a linear ranking of importance, DEMATEL evaluates the direction and intensity of influence among factors, calculates their overall prominence within the system, and separates net causal factors from net effect factors. Such an approach is particularly appropriate for fake-news dissemination because the phenomenon combines technological, organizational, political, professional, educational, and regulatory mechanisms. The distinction between cause and effect groups can help reveal whether highly visible problems are themselves fundamental drivers or instead consequences of deeper structural conditions. For example, widespread audience exposure may be immediately observable, yet the more actionable upstream factors may lie in verification failures, political pressure, platform amplification, or institutional coordination. This systems perspective is consistent with the growing recognition that increasingly sophisticated detection technologies, including multimodal models, deep-learning architectures, and large language models, need to operate within broader governance and media-literacy strategies rather than being treated as complete solutions in themselves [5-10].

Despite the expansion of international scholarship on computational fake-news detection, social-media misinformation, media literacy, organizational crisis response, and regulatory governance, comparatively limited attention has been devoted to constructing an integrated causal model of fake-news dissemination within Iraqi digital journalism. Existing knowledge provides important insights into individual components of the problem, including technological detection [1], AI-related challenges and countermeasures [15], legal and democratic implications [4, 16], organizational and reputational responses [12, 13], and the social consequences of misinformation [3]. Iraq-specific research has likewise illuminated media representation, newspaper coverage, and the vulnerability of journalists and news organizations to hostile networked activity [18-20]. What remains insufficiently clarified, however, is how the principal professional, technological, political, social, economic, and institutional factors within Iraqi digital journalism influence one another and which of these factors occupy the most consequential causal positions. Identifying these relationships is necessary for developing interventions that focus not merely on the most visible manifestations of misinformation but on the structural drivers capable of producing cascading effects throughout the digital news ecosystem.

Accordingly, the aim of this study was to identify, prioritize, and analyze the causal relationships among the factors influencing the dissemination of fake news in Iraqi digital journalism using the DEMATEL method.

Methodology

This study employed an applied, descriptive-analytical research design based on expert judgment and the Decision-Making Trial and Evaluation Laboratory (DEMATEL) technique to identify, structure, and analyze the factors influencing the dissemination of fake news in Iraqi digital journalism. The DEMATEL method was selected because the phenomenon of fake-

news dissemination is inherently multidimensional and involves a network of mutually reinforcing technological, professional, organizational, political, social, economic, and audience-related factors. Unlike conventional ranking approaches that consider factors independently, DEMATEL makes it possible to determine both the intensity and direction of relationships among factors and to distinguish influential causal factors from factors that are primarily affected by the wider system. The research was conducted in Iraq and focused specifically on the contemporary digital journalism environment, including online newspapers, news websites, digital-native news platforms, and the social-media channels used by journalistic organizations to distribute news content. The statistical population consisted of Iraqi specialists with relevant professional or academic expertise in journalism, digital media, communication studies, fact-checking, media management, political communication, and online news production. Using purposive and criterion-based sampling, 18 experts were selected to participate in the study. The use of purposive sampling was appropriate because DEMATEL analysis requires informed judgments from participants who possess substantial knowledge of the phenomenon under investigation rather than a large probability-based sample of the general population. Eligibility criteria included having at least five years of professional, managerial, research, or university-level teaching experience related to journalism, digital communication, news media, media studies, or fact-checking in Iraq; familiarity with the operation of Iraqi digital news media; and willingness to participate in all stages of expert assessment. Participants included university faculty members in journalism and communication, editors and senior journalists working for Iraqi digital news organizations, digital media specialists, media researchers, and professionals with experience in verification or fact-checking activities. Efforts were made to include experts from both academic and professional settings so that the resulting model would reflect theoretical knowledge as well as practical experience with the production, circulation, verification, and consumption of digital news in Iraq. Prior to data collection, participants were informed about the objectives and procedures of the study, the voluntary nature of participation, and the confidentiality of their responses. Expert judgments were analyzed only in aggregated form, and no personally identifiable information was included in the reporting of the findings.

Data collection was conducted through a researcher-developed expert assessment instrument specifically designed for the application of the DEMATEL technique. The development of the instrument occurred in two main stages. In the first stage, potential factors influencing the dissemination of fake news in digital journalism were identified through a focused review of the conceptual and empirical literature on fake news, misinformation, disinformation, digital journalism, social media, news production routines, media credibility, political communication, audience behavior, platform algorithms, and information verification. Particular attention was paid to factors that could reasonably operate within the Iraqi media environment. The preliminary factor pool was subsequently refined through consultation with experts in journalism and communication to eliminate conceptual overlap, combine closely related indicators, clarify ambiguous terminology, and ensure the contextual relevance of the factors to Iraqi digital journalism. The resulting set of factors represented the major mechanisms through which fake news may be produced, amplified, circulated, or insufficiently controlled in digital news environments, including professional weaknesses in verification, pressure for rapid publication, competition for audience attention, economic incentives, political influence, weak editorial gatekeeping, insufficient media regulation, audience susceptibility, low levels of media literacy, the viral characteristics of social media, algorithmic amplification, anonymous or unreliable information sources, and limitations in institutional fact-checking mechanisms. The instrument was reviewed for content relevance, conceptual clarity, comprehensiveness, and linguistic appropriateness before being distributed to the final group of experts.

In the second stage, the finalized factors were arranged in a pairwise influence matrix consistent with DEMATEL requirements. Each expert was asked to evaluate the degree to which each factor directly influenced every other factor in the system. The judgments were recorded on a five-point scale ranging from 0 to 4, where 0 indicated no direct influence, 1 indicated low influence, 2 indicated moderate influence, 3 indicated high influence, and 4 indicated very high direct influence. Experts were instructed to evaluate the direction of influence carefully because the effect of one factor on another was not assumed to be reciprocal. Thus, the influence of factor i on factor j could differ substantially from the influence of factor j on factor i . The principal diagonal of each direct-relation matrix was assigned a value of zero because a factor was not considered to exert a direct causal influence on itself within the DEMATEL framework. To improve the quality and consistency of responses, each participant received a brief explanation of the research purpose, operational definitions of the identified factors, instructions regarding the meaning of the rating scale, and an example illustrating how pairwise influence judgments should be made. The completed matrices were examined for missing responses and logical inconsistencies before analysis. Where necessary, incomplete entries were checked and resolved before construction of the group direct-relation matrix. The individual expert evaluations were then aggregated by calculating the arithmetic mean of the corresponding pairwise judgments, thereby producing a single group matrix representing the collective expert perception of the causal structure underlying fake-news dissemination in Iraqi digital journalism.

Data were analyzed using the standard computational procedures of the DEMATEL method. The analysis began with the construction of the initial direct-relation matrix based on the averaged judgments of the 18 experts. In this square matrix, each element represented the mean perceived direct influence of one factor on another. The direct-relation matrix was subsequently normalized to ensure that all values fell within an appropriate range for calculating indirect and total effects. Normalization was performed by determining the maximum value obtained from the sums of either the rows or columns of the initial direct-relation matrix and multiplying the original matrix by the reciprocal of this maximum value. The normalized direct-relation matrix therefore represented the relative strength of direct causal relationships among the identified factors while preserving the direction and proportional magnitude of the original expert judgments.

Following normalization, the total-relation matrix was calculated in order to capture both direct and indirect relationships among the factors. The total-relation matrix was obtained using the standard DEMATEL expression $T = N(I - N)^{-1}$, where T denotes the total-relation matrix, N represents the normalized direct-relation matrix, and I denotes the identity matrix of the corresponding dimension. This procedure allowed the cumulative influence transmitted through multiple pathways in the system to be incorporated into the analysis. For each factor, the sum of the values across its corresponding row in the total-relation matrix was calculated and designated as D , representing the total influence exerted by that factor on the other factors in the system. Similarly, the sum of the values within the corresponding column was calculated and designated as R , representing the total influence received by that factor from the other factors. Two principal DEMATEL indicators were then calculated for each factor. The value of $D + R$ was used to determine the prominence or centrality of each factor within the overall causal system. A higher $D + R$ value indicated that the factor had stronger overall involvement in the network of relationships and was therefore more central to the dissemination of fake news in Iraqi digital journalism. The value of $D - R$ was used to determine the causal role of each factor. Factors with positive $D - R$ values were classified as members of the cause group because they exerted greater influence on the system than they received, whereas factors with negative $D - R$

values were classified as members of the effect group because they were influenced more strongly by other factors than they influenced them.

To facilitate interpretation of the causal structure, a threshold value was also determined for the total-relation matrix. Relationships with values below the selected threshold were treated as comparatively weak and were excluded from substantive interpretation, whereas relationships exceeding the threshold were retained as meaningful causal connections. The threshold was determined on the basis of the mean value of the elements in the total-relation matrix, thereby reducing excessive complexity and allowing the most important interrelationships to be identified. On this basis, the factors were interpreted in terms of their prominence, causal influence, dependence, and position within the broader system responsible for the circulation of fake news. Factors with simultaneously high $D + R$ and positive $D - R$ values were regarded as particularly important strategic drivers because they were both highly connected to the system and capable of influencing several other variables. In contrast, factors characterized by high prominence but negative $D - R$ values were interpreted as major consequences or dependent dimensions that reflected the accumulated effects of more fundamental causal conditions. The final interpretation therefore emphasized not only which factors were important, but also how they interacted and which upstream factors could potentially generate cascading effects throughout Iraqi digital journalism. All calculations were performed using spreadsheet-based matrix calculations and statistical computational procedures, with the final DEMATEL outputs used to establish the causal hierarchy and structural relationships among the identified factors.

Findings and Results

The demographic characteristics of the participating experts were initially examined to describe the profile of the individuals who contributed to the DEMATEL analysis. The final sample consisted of 18 experts from Iraq who had specialized knowledge and professional experience in digital journalism, communication studies, media management, and news verification. Regarding gender distribution, 13 participants (72.2%) were male and 5 participants (27.8%) were female. In terms of age, 4 experts (22.2%) were between 30 and 39 years old, 8 experts (44.5%) were between 40 and 49 years old, and 6 experts (33.3%) were aged 50 years or older. Regarding educational background, 6 participants (33.3%) held a doctoral degree, 9 participants (50.0%) held a master's degree, and 3 participants (16.7%) held a bachelor's degree or equivalent professional qualification. With respect to professional experience, 5 experts (27.8%) had between 5 and 10 years of experience, 8 experts (44.4%) had between 11 and 20 years of experience, and 5 experts (27.8%) had more than 20 years of experience in journalism, media research, or digital communication. The diversity of the expert panel in terms of academic qualification and professional experience increased the reliability of the judgments used in identifying and prioritizing the factors influencing fake-news dissemination in Iraqi digital journalism.

The preliminary stage of DEMATEL analysis involved identifying the major factors affecting the dissemination of fake news in Iraqi digital journalism. Based on the literature review, expert consultation, and refinement process, 12 key factors were retained for the final analysis. These factors represented technological, professional, organizational, social, political, and audience-related dimensions of fake-news dissemination. The identified factors and their conceptual descriptions are presented in Table 1.

Table 1*Identified factors influencing the dissemination of fake news in Iraqi digital journalism*

Code	Factor	Description
F1	Weak verification and fact-checking mechanisms	Insufficient institutional and professional processes for verifying news accuracy before publication and distribution
F2	Speed-oriented digital news production	Pressure to publish rapidly, which reduces the time available for source evaluation and verification
F3	Social media amplification	The role of social platforms in rapidly spreading unverified information through sharing, recommendation, and viral mechanisms
F4	Low media literacy among audiences	Limited ability of users to critically evaluate news sources, identify misinformation, and distinguish reliable from unreliable content
F5	Political influence and polarization	The impact of political interests, ideological conflicts, and partisan communication on the production and circulation of false information
F6	Economic competition among digital media outlets	Competition for clicks, views, advertising revenue, and audience engagement that encourages sensational or inaccurate content
F7	Weak editorial gatekeeping	Organizational shortcomings in editorial control, newsroom supervision, and professional standards
F8	Algorithmic recommendation and platform dynamics	The influence of digital platform algorithms in increasing the visibility of engaging but potentially misleading content
F9	Lack of effective media regulation	Insufficient legal, institutional, and professional frameworks for controlling misinformation in digital environments
F10	Anonymous and unreliable information sources	Dependence on unidentified sources, unofficial channels, and unverifiable online information providers
F11	Technological accessibility of content production	The ease with which individuals and groups can create, modify, and distribute digital news content
F12	Limited institutional cooperation in combating misinformation	Weak coordination among news organizations, regulatory bodies, researchers, and verification institutions

The findings presented in Table 1 indicate that fake-news dissemination in Iraqi digital journalism is not attributable to a single isolated cause but rather emerges from the interaction of multiple interconnected factors. The identified factors demonstrate that the phenomenon includes both supply-side mechanisms, such as weak verification practices, political influence, and newsroom limitations, and demand-side mechanisms, including audience vulnerability and low media literacy. In addition, technological characteristics of digital platforms, particularly social media amplification and algorithmic visibility, were recognized as important components of the system. The classification of factors across different dimensions confirms that addressing fake news requires a comprehensive approach that considers professional, technological, institutional, and social conditions simultaneously.

The aggregated expert judgments were first converted into the initial direct-relation matrix, reflecting the perceived degree of influence that each factor exerted on other factors. The normalized direct-relation values were calculated according to the DEMATEL procedure to ensure comparability among all relationships. The normalized matrix demonstrates the relative intensity of direct influences among the factors and provides the foundation for identifying the overall causal structure of fake-news dissemination.

Table 2*Normalized direct-relation matrix of factors influencing fake-news dissemination*

Factor	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12
F1	0.000	0.082	0.094	0.071	0.076	0.063	0.085	0.089	0.067	0.078	0.052	0.073
F2	0.075	0.000	0.091	0.058	0.069	0.084	0.077	0.086	0.055	0.072	0.061	0.064
F3	0.086	0.079	0.000	0.083	0.081	0.088	0.068	0.095	0.054	0.090	0.077	0.065
F4	0.064	0.052	0.074	0.000	0.057	0.049	0.062	0.071	0.060	0.066	0.045	0.058
F5	0.092	0.085	0.089	0.067	0.000	0.082	0.091	0.084	0.079	0.086	0.061	0.075
F6	0.068	0.080	0.082	0.054	0.073	0.000	0.076	0.079	0.058	0.070	0.056	0.062
F7	0.081	0.076	0.078	0.061	0.083	0.072	0.000	0.074	0.069	0.075	0.053	0.071
F8	0.079	0.088	0.097	0.068	0.075	0.081	0.072	0.000	0.059	0.084	0.069	0.067
F9	0.073	0.061	0.065	0.057	0.082	0.060	0.074	0.070	0.000	0.063	0.048	0.085
F10	0.084	0.073	0.087	0.062	0.078	0.071	0.080	0.082	0.066	0.000	0.055	0.069
F11	0.055	0.068	0.076	0.051	0.059	0.065	0.060	0.072	0.047	0.058	0.000	0.054
F12	0.077	0.070	0.073	0.063	0.079	0.067	0.081	0.075	0.071	0.076	0.057	0.000

As shown in Table 2, the normalized direct-relation matrix reveals that several factors exert considerable direct influence within the fake-news dissemination system. Among the observed relationships, social media amplification (F3), political influence and polarization (F5), algorithmic recommendation dynamics (F8), weak verification mechanisms (F1), and unreliable information sources (F10) demonstrated relatively stronger direct effects on other components. These findings indicate that fake-news dissemination in Iraqi digital journalism is strongly connected to the interaction between information production practices and digital distribution infrastructures. The normalized matrix also confirms that causal relationships among the factors are not uniform, meaning that some variables function as active drivers while others operate mainly as outcomes influenced by broader structural conditions.

After calculating the total-relation matrix, the values of D, R, D+R, and D–R were obtained for each factor. The D value represents the total amount of influence transmitted by each factor, whereas R represents the amount of influence received from other factors. The resulting prominence and causal indicators are presented in Table 3.

Table 3

DEMATEL prominence and causal indicators of influencing factors

Factor	D (Influence Given)	R (Influence Received)	D+R (Prominence)	D–R (Net Effect)	Classification
F1	1.214	1.126	2.340	0.088	Cause
F2	1.104	1.194	2.298	-0.090	Effect
F3	1.285	1.218	2.503	0.067	Cause
F4	0.982	1.267	2.249	-0.285	Effect
F5	1.301	1.183	2.484	0.118	Cause
F6	1.127	1.165	2.292	-0.038	Effect
F7	1.178	1.171	2.349	0.007	Cause
F8	1.263	1.205	2.468	0.058	Cause
F9	1.087	1.176	2.263	-0.089	Effect
F10	1.231	1.142	2.373	0.089	Cause
F11	1.014	1.134	2.148	-0.120	Effect
F12	1.143	1.152	2.295	-0.009	Effect

The results in Table 3 demonstrate that the causal structure of fake-news dissemination is dominated by several upstream factors. Political influence and polarization (F5) obtained the highest positive D–R value, indicating that it functions as one of the strongest causal drivers within the system. Weak verification and fact-checking mechanisms (F1), unreliable information sources (F10), social media amplification (F3), and algorithmic recommendation dynamics (F8) also showed positive causal values, confirming their active role in generating and reinforcing misinformation flows. Conversely, low media literacy among audiences (F4), technological accessibility of content production (F11), and economic competition among digital media outlets (F6) were positioned mainly within the effect group, suggesting that they are substantially shaped by other structural conditions. The prominence values indicate that social media amplification, political influence, and algorithmic dynamics are among the most interconnected elements of the system.

To further clarify the causal structure, the factors were ranked according to their prominence values and separated into cause and effect groups. The ranking results are presented in Table 4.

Table 4*Ranking of factors based on DEMATEL prominence values*

Rank	Factor	D+R Value	Causal Position
1	Social media amplification (F3)	2.503	Cause
2	Political influence and polarization (F5)	2.484	Cause
3	Algorithmic recommendation and platform dynamics (F8)	2.468	Cause
4	Weak verification and fact-checking mechanisms (F1)	2.340	Cause
5	Weak editorial gatekeeping (F7)	2.349	Cause
6	Anonymous and unreliable information sources (F10)	2.373	Cause
7	Speed-oriented digital news production (F2)	2.298	Effect
8	Limited institutional cooperation (F12)	2.295	Effect
9	Economic competition among digital media outlets (F6)	2.292	Effect
10	Lack of effective media regulation (F9)	2.263	Effect
11	Low media literacy among audiences (F4)	2.249	Effect
12	Technological accessibility of content production (F11)	2.148	Effect

The ranking presented in Table 4 indicates that the most central elements influencing fake-news dissemination in Iraqi digital journalism are associated primarily with digital distribution mechanisms, political communication environments, and professional verification systems. Social media amplification emerged as the most prominent factor, demonstrating that the architecture of online information circulation plays a decisive role in determining how rapidly false information can reach audiences. Political influence and polarization ranked second, highlighting the importance of socio-political conditions in shaping misinformation processes. The relatively high ranking of verification weaknesses and editorial limitations suggests that internal journalistic practices remain critical points of intervention. In contrast, factors such as audience media literacy and technological accessibility, although important, appeared as more dependent dimensions that are influenced by broader structural conditions.

The final stage of analysis involved identifying the strongest causal relationships among factors using the threshold value derived from the total-relation matrix. The relationships exceeding the threshold were considered significant connections within the causal network.

Table 5*Significant causal relationships among factors based on the threshold DEMATEL network*

Influencing Factor	Influenced Factor	Relationship Strength	Interpretation
Political influence and polarization (F5)	Weak verification mechanisms (F1)	High	Political pressures reduce professional independence and verification quality
Social media amplification (F3)	Algorithmic recommendation dynamics (F8)	High	Viral interactions increase algorithmic visibility of misleading content
Weak verification mechanisms (F1)	Anonymous information sources (F10)	High	Weak verification increases reliance on unreliable sources
Algorithmic recommendation dynamics (F8)	Audience exposure to fake news	High	Platform systems increase the reach of misleading information
Weak editorial gatekeeping (F7)	Speed-oriented publication (F2)	Moderate to high	Organizational weaknesses encourage rapid unverified publishing
Political influence and polarization (F5)	Social media amplification (F3)	Moderate to high	Polarized content receives greater online circulation
Low media literacy (F4)	Fake-news persistence	Moderate	Limited critical evaluation contributes to continued dissemination

Table 5 demonstrates the most influential pathways through which fake news spreads in Iraqi digital journalism. The findings suggest that misinformation circulation is driven by a chain of interconnected processes rather than isolated events. Political influence contributes to weakened professional verification, while digital platform mechanisms accelerate the

visibility and persistence of misleading content. The relationship between weak editorial gatekeeping and rapid publication indicates that newsroom practices remain an essential point of intervention. Furthermore, the connection between low media literacy and fake-news persistence demonstrates that audiences are not merely passive recipients but constitute an important component of the misinformation ecosystem. Overall, the DEMATEL network confirms that effective reduction of fake-news dissemination requires simultaneous attention to political, technological, professional, and educational dimensions.

Figure 1

Causal diagram of factors influencing fake-news dissemination in Iraqi digital journalism based on DEMATEL analysis

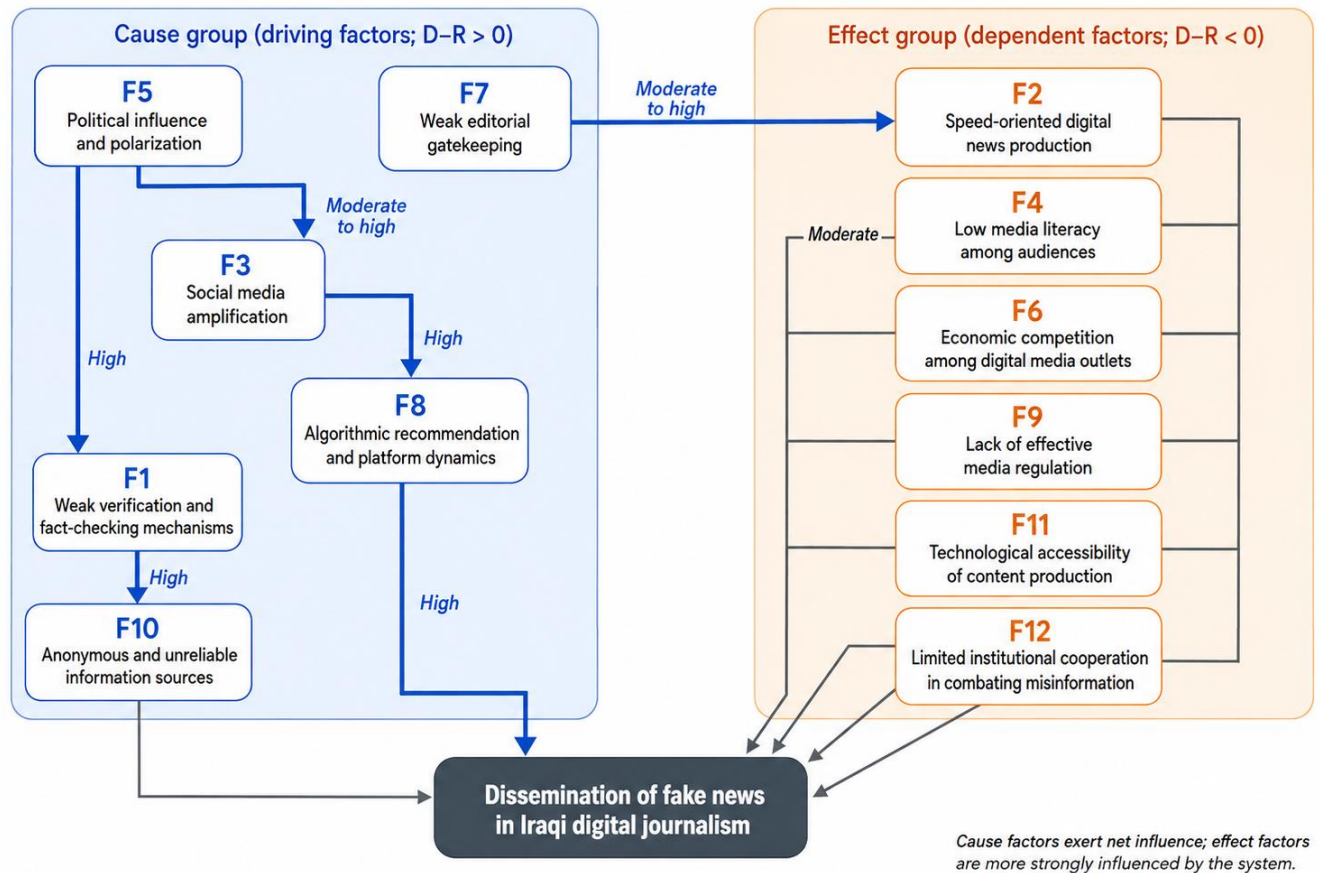


Figure 1 illustrates the final causal network generated from the DEMATEL results and visually represents the relationships among the identified factors. The diagram demonstrates the distinction between driving factors and dependent factors within the system. The cause group is positioned as the primary source of influence, containing variables such as political influence, social media amplification, weak verification mechanisms, algorithmic dynamics, and unreliable information sources. These factors create cascading effects that influence dependent dimensions, including audience vulnerability, publication speed, and regulatory limitations. The network structure indicates that interventions targeting the major causal drivers are likely to produce broader effects throughout the system compared with interventions focusing only on consequence-oriented factors. Therefore, the DEMATEL findings provide a structured explanation of how multiple conditions combine to facilitate the dissemination of fake news within Iraq's digital journalism environment.

Discussion and Conclusion

The present study aimed to identify and analyze the factors influencing the dissemination of fake news in Iraqi digital journalism and to clarify their causal relationships using the DEMATEL method. The findings demonstrated that fake-news dissemination is not produced by a single technological, professional, or audience-related deficiency; rather, it results from an interconnected causal system involving political pressures, social-media dynamics, algorithmic mechanisms, journalistic verification practices, editorial gatekeeping, unreliable sources, economic pressures, regulatory conditions, media literacy, technological accessibility, and institutional cooperation. The DEMATEL analysis divided these factors into cause and effect groups and showed that political influence and polarization, social media amplification, algorithmic recommendation and platform dynamics, weak verification and fact-checking mechanisms, anonymous and unreliable information sources, and weak editorial gatekeeping primarily occupied causal positions. By contrast, speed-oriented digital news production, low media literacy among audiences, economic competition, lack of effective media regulation, technological accessibility of content production, and limited institutional cooperation were positioned predominantly within the effect group. This pattern indicates that some of the most visible manifestations of fake-news circulation should not necessarily be regarded as its most fundamental causes. Instead, the findings suggest that upstream political, technological, and professional conditions generate effects that subsequently become embedded in newsroom behavior, audience exposure, and the broader digital communication environment.

One of the most important findings was that political influence and polarization emerged as the strongest net causal factor, recording the highest positive D–R value. This result suggests that political conditions represent a fundamental structural driver of fake-news dissemination in Iraqi digital journalism. In politically polarized environments, news production and circulation may become closely linked with ideological competition, factional interests, efforts to influence public opinion, and attempts to delegitimize competing actors or media organizations. Political actors and their supporters may therefore have incentives to selectively frame events, amplify favorable narratives, contest unfavorable reporting, or circulate claims before their accuracy has been independently established. This interpretation is strongly consistent with research conducted in the Iraqi context. Al-Rawi and colleagues demonstrated that critical journalists and news organizations in Iraq may be subjected to networked trolling, indicating that digital communication environments can be mobilized to challenge journalistic credibility, target media actors, and influence public narratives [18]. The significance of political polarization is also consistent with broader research showing that social media, information manipulation, and fake news can affect democratic processes by blurring the boundaries between factual information, political persuasion, and strategically manufactured narratives [4]. The present findings therefore suggest that political polarization should not be treated merely as background context; within the Iraqi digital journalism ecosystem, it may function as a direct causal mechanism influencing other weaknesses in news production and distribution.

The identified relationship between political influence and weak verification mechanisms provides further support for this interpretation. Political pressure may influence which sources are considered legitimate, how rapidly particular narratives are published, and whether journalists have sufficient professional autonomy to challenge information provided by politically influential actors. When the pressure to participate in a fast-moving political information cycle becomes intense, verification procedures may be shortened or selectively applied. The finding that political influence also affected social-media amplification indicates that politically charged content may possess a greater capacity for networked diffusion. This is

plausible because polarized narratives often generate emotional engagement, conflict, commentary, and repeated sharing, thereby increasing their visibility in digital environments. The broader literature supports the importance of emotional and legitimacy-related processes in the persistence of fake news. Joachim and colleagues argue that responses to fake-news attacks cannot rely exclusively on factual correction because emotional reactions and legitimacy judgments shape how misleading narratives are received and sustained [13]. Similarly, research on organizational crisis communication shows that false information can create reputational consequences requiring carefully designed communication strategies rather than simple factual denial [11, 12]. Together with the current findings, these studies suggest that politically charged fake news can gain influence not only because it is widely circulated but because it becomes integrated into broader struggles over credibility, legitimacy, identity, and institutional trust.

Social media amplification emerged as the factor with the highest overall prominence, reflected in the largest D+R value, while also remaining within the cause group. This finding demonstrates that social media occupies a central position in the fake-news system because it both influences other factors and is deeply interconnected with them. The importance of social media is consistent with extensive evidence that misleading information acquires much of its contemporary social power through the infrastructures of digital circulation. Olan and colleagues emphasized that fake news on social media can generate consequences extending across individual, organizational, and societal levels [3]. Social media platforms enable content to be redistributed rapidly across networks without requiring the editorial procedures traditionally associated with professional news organizations. The current DEMATEL results extend this argument by demonstrating that social media amplification should not be viewed merely as the final distribution stage of fake news. Instead, it functions as a central causal mechanism connecting political polarization, platform algorithms, journalistic routines, and audience exposure. In other words, the possibility that information may become rapidly viral can itself influence how journalists and media organizations produce and prioritize news.

The strong causal pathway identified from social media amplification to algorithmic recommendation and platform dynamics further clarifies the technological mechanism through which fake news can gain visibility. Social platforms do not distribute all information equally. Content that attracts rapid interaction may receive greater algorithmic exposure, producing a feedback loop in which initial engagement leads to increased visibility and increased visibility generates further engagement. This mechanism becomes particularly significant when sensational, emotionally provocative, or polarized content receives disproportionate audience attention. Recent technological research has increasingly recognized that fake-news detection must account for complex interactions among textual, visual, relational, and network features rather than focusing on isolated message characteristics. Multimodal interaction and graph contrastive learning approaches illustrate the importance of capturing relationships between content and its broader network context [10], while multimodal domain-adaptation models similarly demonstrate that effective identification of fake news requires sensitivity to variations across information environments [9]. The present findings complement these technological studies by showing why such methods have become necessary: fake news is embedded in an algorithmically mediated network structure in which visibility depends not only on content but also on patterns of interaction and platform recommendation.

Algorithmic recommendation and platform dynamics consequently emerged as another highly prominent causal factor. This result is particularly important because it indicates that the dissemination of fake news cannot be fully explained through intentional deception by individual producers. Even when misleading information originates from a limited number of

sources, algorithmic systems can substantially increase its exposure if the content generates signals associated with engagement. The growing sophistication of computational fake-news detection reflects the scale of this challenge. Studies have investigated hybrid deep-learning approaches combining semantic representations with explainable artificial intelligence [6], text-to-image transformation and customized models [7], BERT-like architectures and large language models [8], and broader applications of artificial intelligence to fake-news detection [5]. Farhangian and colleagues further demonstrate the diversity of fake-news detection techniques and the complexity of constructing a unified detection framework across different types of misinformation [1]. These studies align with the present result that algorithmic dynamics occupy a central position in the dissemination system; however, the current analysis also demonstrates that detection technologies alone cannot address the problem because algorithmic amplification interacts with political, editorial, source-related, and audience-level factors.

Weak verification and fact-checking mechanisms also emerged as an important net causal factor. This finding confirms the continuing relevance of traditional journalistic professional standards despite the growing technological sophistication of digital communication. Verification is a central boundary between professional journalism and unregulated information circulation. When verification mechanisms are weak, unreliable information may pass from informal or anonymous sources into professional news channels, where publication by a recognized outlet can provide additional legitimacy. The identified causal relationship between weak verification and reliance on anonymous or unreliable information sources is therefore particularly significant. It suggests a reinforcing cycle in which insufficient verification increases the probability that questionable sources will be used, while the abundance of rapidly circulating sources makes comprehensive verification increasingly difficult. Information asymmetry compounds this problem because audiences generally cannot reproduce the journalistic verification process and must rely on source credibility and institutional trust when evaluating claims [2]. The current findings thus indicate that strengthening verification should be treated not merely as an ethical expectation for individual journalists but as a structural intervention capable of interrupting several downstream pathways of misinformation.

The importance of anonymous and unreliable sources within the cause group further demonstrates the vulnerability of digital journalism to changes in the sourcing environment. Digital platforms have expanded the range of potential information providers to include anonymous accounts, unofficial channels, citizen-generated material, private messaging networks, political activists, and rapidly circulating visual evidence whose original context may be unclear. This condition increases the complexity of source evaluation, particularly during breaking events. The significance of source reliability is also indirectly supported by Iraq-related studies demonstrating how news representation can shape subsequent public discussion. Ardakani Fard and Azimi Hashemi showed that mass-media representation of Iraq-related news can influence public opinion on Twitter, illustrating how journalistic framing and networked public interpretation may become interconnected [19]. Research on Iraqi newspapers likewise demonstrates the continuing role of media organizations in framing and interpreting social issues for public audiences [20]. When the information entering this process originates from weak or unverifiable sources, inaccurate narratives may acquire greater legitimacy once incorporated into recognized journalistic formats and subsequently redistributed across digital platforms.

Weak editorial gatekeeping also belonged to the cause group, although its net causal value was smaller than those of political influence, verification weakness, and unreliable sources. Its causal relationship with speed-oriented digital news

production is nevertheless theoretically important. Contemporary newsrooms operate under pressure to publish quickly, compete for attention, and respond continuously to developments circulating online. Under such conditions, editorial review may become compressed, especially where organizations lack sufficient personnel, verification resources, or clearly institutionalized standards for digital publication. The current findings indicate that speed-oriented publication should be interpreted partly as an effect of broader editorial weaknesses rather than solely as an independent cause. This distinction has practical importance because interventions that merely instruct journalists to slow down may have limited effectiveness if newsroom structures continue to reward rapid publication and provide insufficient editorial oversight. The dissemination of fake news is therefore connected with organizational design, professional accountability, and the allocation of time and resources to verification.

Low media literacy among audiences produced the most negative D-R value, indicating that it functioned primarily as a dependent factor within the causal system. This finding does not mean that media literacy is unimportant. Rather, it suggests that audience vulnerability is strongly shaped by the wider information environment in which audiences operate. Users are required to evaluate information under conditions of high volume, rapid circulation, persuasive visual design, algorithmic personalization, and increasingly sophisticated AI-generated material. Educational research emphasizes the need to develop systematic pedagogical approaches to fake-news detection [14]. Similarly, Verma and Rohman stress the importance of strengthening media literacy in response to AI-generated fake news, particularly among younger users [15]. The current result complements these studies by suggesting that media-literacy interventions should not transfer responsibility for misinformation exclusively to audiences. Even highly literate users operate within digital environments designed around rapid engagement, and therefore audience education should accompany reforms in journalism, platform governance, and verification rather than substitute for them.

The placement of regulatory weakness and limited institutional cooperation within the effect group also deserves attention. Although inadequate regulation may appear intuitively to be an upstream cause, the DEMATEL results suggest that, in the Iraqi context, regulatory limitations may themselves reflect wider structural fragmentation involving political pressures, media-system characteristics, technological change, and insufficient coordination among institutions. International experience demonstrates the difficulty of developing effective regulatory responses to misinformation. The evolution of European Union policy from soft-law responses toward more formal platform-governance requirements under the Digital Services Act illustrates the increasing recognition that misinformation requires systemic rather than purely content-based regulation [16]. The current findings suggest that Iraq may similarly require coordinated governance structures that bring together media institutions, regulators, digital platforms, academic specialists, and verification organizations. Regulatory interventions operating independently of professional and technological reforms are unlikely to resolve the underlying causal structure.

Finally, the broader pattern of findings supports conceptualizing fake news as a systemic risk within digital journalism. Misinformation can produce effects extending beyond inaccurate public beliefs to include reputational crises, institutional distrust, organizational disruptions, and wider social consequences [3, 11]. Research connecting misinformation and disinformation to supply-chain disruptions similarly demonstrates how unreliable information can propagate risk across interconnected systems [17]. In the Iraqi digital journalism context, the present DEMATEL model shows a comparable pattern of cascading influence: political polarization can weaken verification and intensify social-media circulation; amplification can

interact with algorithmic recommendation; verification failures can increase reliance on unreliable sources; weak editorial gatekeeping can encourage speed-oriented production; and these processes ultimately increase the dissemination and persistence of fake news. The principal implication is that effective intervention should prioritize upstream causal factors rather than addressing only downstream manifestations. Political independence, professional verification, editorial quality, responsible platform governance, and source transparency therefore appear to constitute particularly important leverage points for reducing fake-news dissemination in Iraqi digital journalism.

This study has several limitations that should be considered when interpreting the findings. First, the DEMATEL analysis was based on the judgments of 18 experts, and although expert-based decision methods prioritize expertise over large sample size, the findings inevitably reflect the professional experiences and perceptions of the selected participants. Second, purposive sampling limits the statistical generalizability of the findings to all journalists, media organizations, or digital news users in Iraq. Third, the study examined relationships among a predefined set of factors developed from the literature and expert consultation; additional variables may exist that were not incorporated into the final model. Fourth, causal relationships in DEMATEL represent structured expert judgments rather than experimentally established causal effects. Fifth, the rapidly changing nature of digital platforms, artificial intelligence, and online news production means that the relative importance of specific factors may change over time. Finally, differences among Iraqi regions, types of media organizations, political orientations, and platform environments were not modeled separately, which may conceal meaningful contextual variation.

Future studies should replicate the proposed causal model with larger and more heterogeneous expert panels representing journalists, editors, fact-checkers, academics, regulators, platform specialists, and civil-society organizations from different regions of Iraq. Comparative research could examine whether the causal structure differs across national contexts, between traditional and digital-native news organizations, or across political, economic, and crisis-related news domains. Longitudinal studies would also be valuable for determining whether the importance of algorithmic amplification, AI-generated content, verification practices, and audience literacy changes as technologies and journalistic routines evolve. Future research could integrate DEMATEL with methods such as the Analytic Network Process, structural equation modeling, fuzzy decision-making techniques, social network analysis, or system dynamics to provide additional validation and deeper assessment of reciprocal relationships. Empirical studies using real fake-news diffusion data, newsroom observations, content analysis, journalist interviews, and platform-level engagement indicators could further test the causal pathways identified in the present study.

Media organizations in Iraq should strengthen institutional verification procedures by establishing dedicated fact-checking protocols, source-evaluation standards, and clear requirements for verifying high-risk content before publication. Editorial managers should reduce organizational incentives that privilege publication speed over accuracy and ensure that breaking-news procedures include explicit verification checkpoints. Journalists should receive continuing professional training in digital verification, visual authentication, AI-generated content recognition, and assessment of anonymous online sources. News organizations should also improve transparency by clearly identifying sources, correcting inaccurate reports rapidly, and explaining verification procedures to audiences. Regulatory and professional bodies should encourage cooperation among media outlets, universities, fact-checking organizations, civil-society institutions, and technology platforms. Media-literacy programs should be incorporated into schools, universities, and public education initiatives while emphasizing practical

verification skills. Finally, interventions should prioritize the upstream causal factors identified in the DEMATEL model, particularly political pressure, weak verification, social-media amplification, algorithmic dynamics, unreliable sourcing, and insufficient editorial gatekeeping, because improvements in these areas are likely to produce broader reductions in the downstream dissemination of fake news.

Acknowledgments

We would like to express our appreciation and gratitude to all those who cooperated in carrying out this study.

Authors' Contributions

All authors equally contributed to this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants. Written consent was obtained from all participants in the study.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

Funding

This research was carried out independently with personal funding and without the financial support of any governmental or private institution or organization.

References

- [1] F. Farhangian, R. M. O. Cruz, and G. D. C. Cavalcanti, "Fake news detection: Taxonomy and comparative study," *Information Fusion*, vol. 103, p. 102140, 2024, doi: 10.1016/j.inffus.2023.102140.
- [2] R. Moro-Visconti, "Fake news and misinformation asymmetries," 2024.
- [3] F. Olan, U. Jayawickrama, E. O. Arakpogun, J. Suklan, and S. Liu, "Fake news on social media: the impact on society," *Information Systems Frontiers*, vol. 26, no. 2, pp. 443-458, 2024.
- [4] L. A. Sihombing, I. Darmawan, and Y. Prayuti, "Social Media, Fake News, Information Manipulation and Democracy and the Challenges of Finding Legal Truth in the Post-Truth Era," *Pena Justisia Media Komunikasi Dan Kajian Hukum*, vol. 23, no. 2, p. 1263, 2024, doi: 10.31941/pj.v23i2.4797.
- [5] A. Iqbal, K. Shahzad, S. A. Khan, and M. S. Chaudhry, "The relationship of artificial intelligence (AI) with fake news detection (FND): A systematic literature review," *Global Knowledge, Memory and Communication*, vol. 74, no. 5-6, pp. 1617-1637, 2025.
- [6] E. Hashmi, S. Y. Yayilgan, M. M. Yamin, S. Ali, and M. Abomhara, "Advancing fake news detection: hybrid deep learning with fastText and explainable AI," *IEEE Access*, 2024, doi: 10.1109/ACCESS.2024.3381038.

- [7] F. Rustam, A. D. Jurcut, S. Alfarhood, M. Safran, and I. Ashraf, "Fake news detection using enhanced features through text to image transformation with customized models," *Discover Computing*, vol. 27, no. 1, pp. 1-26, 2024, doi: 10.1007/s10791-024-09490-1.
- [8] S. Raza, D. Paulen-Patterson, and C. Ding, "Fake news detection: comparative evaluation of BERT-like models and large language models with generative AI-annotated data," *Knowledge and Information Systems*, pp. 1-26, 2025, doi: 10.1007/s10115-024-02321-1.
- [9] X. Wang, J. Meng, D. Zhao, X. Meng, and H. Sun, "Fake news detection based on multi-modal domain adaptation," *Neural Computing and Applications*, pp. 1-13, 2025, doi: 10.1007/s00521-024-10896-7.
- [10] W. Cui and M. Shang, "MIGCL: Fake news detection with multimodal interaction and graph contrastive learning networks," *Applied Intelligence*, vol. 55, no. 1, pp. 1-23, 2025, doi: 10.1007/s10489-024-05883-3.
- [11] K. Gasana, "Crisis communication and reputation management in the age of fake news," *Journal of Public Relations*, vol. 3, no. 1, pp. 28-39, 2024, doi: 10.47941/jpr.1773.
- [12] C. A. Lambert, M. E. Ewing, and T. Hassan, "Watchful Waiting: Public Relations Strategies to Minimize and Manage a Fake News Crisis," *Journal of Communication Management*, vol. 28, no. 3, pp. 459-481, 2024, doi: 10.1108/jcom-05-2022-0064.
- [13] M. Joachim, I. Castello, and G. Parry, "Moving beyond Facts Are Facts: Managing Emotions and Legitimacy after a Fake News Attack," (in English), *Business & Society*, vol. 65, no. 2, pp. 389-420, 2024, doi: 10.1177/00076503241281632.
- [14] L. Pereira and C. Riccardi, "La pertinence des moyens pédagogiques pour l'enseignement de la détection des fake news au cycle 2," 2025.
- [15] A. K. Verma and F. Y. Rohman, "Boosting Media Literacy to Counter Ai-Generated Fake News: Strategies for the Young Generation," pp. 32-36, 2024, doi: 10.58532/v3beso11p2ch2.
- [16] G. Gosztonyi, "How the European Union Had Tried to Tackle Fake News and Disinformation With Soft Law and What Changed With the Digital Services Act?," *Frontiers in Law*, vol. 3, pp. 102-113, 2024, doi: 10.6000/2817-2302.2024.03.12.
- [17] P. Petratos and A. Faccia, "Fake News, Misinformation, Disinformation and Supply Chain Risks and Disruptions: Risk Management and Resilience Using Blockchain," *Annals of Operations Research*, 2023, doi: 10.1007/s10479-023-05242-4.
- [18] A. Al-Rawi, C. Tenove, and P. Klein, "The Networked Trolling of Critical Journalists and News Organizations in Iraq," *Journalism and Media*, vol. 4, no. 4, pp. 1130-1140, 2023, doi: 10.3390/journalmedia4040072.
- [19] Z. Ardakani Fard and M. Azimi Hashemi, "Representation of news in mass media and its impact on public opinion on Twitter (Case study: News about Iraqi sex tourism in Mashhad)," *Quarterly Journal of New Media Studies*, vol. 7, no. 52, pp. 100-121, 2021.
- [20] H. S. Kazem Qureshi, "Analyzing the causes of drug addiction, its consequences, and countermeasures in Iraqi newspapers (Sada Iraq and Al-Mada as samples)," Faculty of Media and Communications, University of Religions and Denominations, 2023. [Online]. Available: <https://www.gigadoc.ir/>