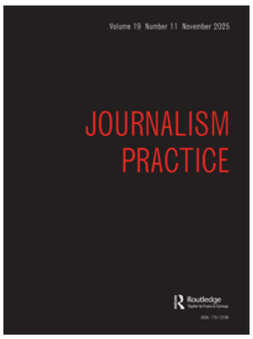

Routledge
Taylor & Francis Group

Journalism Practice

ISSN: 1751-2786 (Print) 1751-2794 (Online) Journal homepage: www.tandfonline.com/journals/rjop20

Examining News Innovation Narratives, Practices and Institutional Logics: A Study on GenAI Adoption in Egyptian Newsrooms

Rana Arafat & Glenda Cooper

To cite this article: Rana Arafat & Glenda Cooper (06 Nov 2025): Examining News Innovation Narratives, Practices and Institutional Logics: A Study on GenAI Adoption in Egyptian Newsrooms, Journalism Practice, DOI: 10.1080/17512786.2025.2579810

To link to this article: https://doi.org/10.1080/17512786.2025.2579810

Published online: 06 Nov 2025.

JOURNALISM PRACTICE
https://doi.org/10.1080/17512786.2025.2579810

Routledge
Taylor & Francis Group

Examining News Innovation Narratives, Practices and Institutional Logics: A Study on GenAI Adoption in Egyptian Newsrooms

Rana Arafat and Glenda Cooper

Department of Journalism, City St George's University of London, London, UK

ABSTRACT

AI and algorithms play a crucial role in the processes of gathering, filtering and sharing news. But scholars have focused primarily on the use of such tools in big western media organizations, leaving outlets in developing countries under-researched. This paper aims to redress the balance by examining the use of Generative AI tools in Egyptian newsrooms on three levels: narrative, practice and technological infrastructure, including wider technological and organizational factors that facilitate or hinder innovation adoption. In doing so, the paper employs diffusion of innovation and institutional logics as conceptual frameworks and adopts 26 in-depth interviews with journalists, chief editors, developers and media experts at four newsrooms in Egypt. Findings demonstrated how news innovation becomes a priority when it not only aligns with the newsroom's external marketing strategy as an early adopter of smart tech, but also when it proves to be financially viable with low tech-related costs, and has the potential to increase profitability. Individual journalists are burdened with the responsibility of self-learning about news technology, including GenAI tools. This added workload makes them less inclined to significantly transform their daily work routines, leading to more resistance to adopting change or innovation.

ARTICLE HISTORY
Received 24 July 2024
Accepted 14 October 2025

KEYWORDS
News innovations; GenAI; narratives; practices; infrastructure; Egyptian newsrooms

Introduction

Developments in AI have transformed the way that newsrooms can produce content. AI and algorithms play an increasingly crucial role in the processes of gathering, filtering, composing and sharing news, allowing media outlets to serve various purposes such as "engaging under-served audiences, selling subscriptions and recombining and re-using content" (Thurman, Lewis, and Kunert 2019, 980). AI refers to

> "a branch of computer science focused on simulating human intelligence, one that recently has been especially engaged in the subfield of machine learning: the training of a machine to learn from data, recognize patterns, and make subsequent judgments, with little to no human intervention" (Lewis 2019, 673).

CONTACT Rana Arafat rana.arafat.4@city.ac.uk @RanaArafat12

This suggests a critical change in the power dynamics of news production where algorithms have a transformative role and autonomous power in the newsgathering and distribution stages, while human news workers exert control over the news selection and editing processes (Wu, Tandoc, and Salmon 2019). Therefore, machines can be perceived as "co- creators of news, alongside humans in the automated newsroom" (Wu et al. 1452) despite their lack of ability to engage in interpersonal interactions with journalists (Lewis, Guzman, and Schmidt 2019).

Nowhere is this conversation around AI more pertinent than in the Arab region, and in particular in Egypt, the subject of this paper, where the situation has been described by a newspaper editor as a "chaotic circus' (Elgatrifi 2023). AI tools are already used in some Arabic world media houses to help with tasks such as news gathering, production and distribution. However, scholars have recently pointed out the impact of the economic divide within the Arab region between countries with strong and weak economies on the wider adoption of AI in newsrooms (authors 2024). Newsrooms in strong economies like the Gulf region (e.g., United Arab Emirates, Saudi Arabia, Qatar and Kuwait) have started experimenting with AI technologies, including AI-generated news anchors and Chatbots, years ago, even before ChatGPT was introduced. For example, Astra Tech, a consumer technology company based in the United Arab Emirates, has developed the so-called first "Arabic ChatGPT" through its BOTIM video chat app (Birch 2023). Meanwhile, Al Jazeera Arabic introduced AI tools to tackle "fake news' and created an AI news anchor (Al-Gody 2021). The UAE-based digital news outlet Al-Ain has used AI in script-to-voice formats and also developed a robot writer to produce a weekly AI-generated article, although not without controversy after the use of outdated data (Al Shurafa 2023).

To the contrary, local journalists in developing countries with struggling economies including Egypt, Lebanon and Tunisia still encounter limitations related to lack of financial resources, digital infrastructure, data access, digital skills and technology training, which highly restrict their ability to use advanced digital tools to personalize news content and reinforce audience engagement (Arafat and Porlezza 2023; Harb and Arafat 2024). This raises many questions about how newsrooms in these countries tend to perceive and implement GenAI tools and what factors might facilitate or hinder this innovation adoption.

Therefore, this paper draws upon the diffusion of innovation and institutional logics as theoretical frameworks and employs 26 in-depth interviews to map out the news innovation scene in Egypt, as one of the major players in the Middle Eastern media sector with a longstanding history of being a pioneer in adopting communication technologies in the Arab region (Badr 2021). It examines the use of AI-driven tools on three levels: narrative, practice and technological infrastructure. On the narrative level, the paper first investigates how Egyptian news actors (journalists, news managers and tech developers) working for four selected newsrooms understand and define the role of artificial intelligence in the Egyptian media landscape in general, and their outlets in particular. Looking at practice, the paper examines the news workers' use of AI-driven tools in different phases of news production processes (e.g., from the simple use of the AI-powered Google Trends to find a story, to the more complex design of recommender systems and conversational newsbots to personalize the distributed news content). The paper further explores how the news actors' competing institutional logics can shape the deployment of these innovative technologies. On the wider infrastructure level, the

paper further investigates the wider technological and organizational factors that facilitate or hinder the adoption of AI tools in the selected newsrooms.

Conceptualizing News Innovation and AI Technologies

The concept of innovation has been defined in academic literature (Bleyen et al. 2014), as it encompasses different ideas such as better ways of doing work (i.e., process) or deploying innovative methods for profit purposes, such as gaining a larger audience. Although it implies change, it should not be "equated to change itself, because it is based on complex dynamic social processes that go beyond the control of single actors in diverse media contexts" (García-Avilés 2020, 3). Digital innovations can be both dramatically experimental or a long-term normalization of technologies (Belair-Gagnon and Steinke 2020). Further, news innovation does not necessarily refer to something completely new, but they can rather be a "new combination of already existing ideas, competences and resources" (Storsul and Krumsvik 2013, 14). Generative AI (GenAI) tools such as ChatGPT, Bard, DALL-E and Stable Diffusion offer a recent innovation with novel capabilities to generate new content, including text, images, videos and music in response to a prompt (Cools and Diakopoulos 2024). It uses Large Language Models (LLMs) to "learn the underlying patterns of a given dataset and then generate new data points" (Beckert 2023).

Developments in artificial intelligence technologies have driven its use in allowing journalists to automate news production tasks – such as verifying data, producing graphics or writing basic news stories (Gutierrez Lopez et al. 2023). Added to this is the increasing use of agents capable of "conversation" – such as Alexa, or social robots like Jibo and social bots. Thus, theorists argue that both the process and labour of communication can be automated (Lewis, Guzman, and Schmidt 2019). Specifically, when AI is used in the communication industries, such agents as mentioned above are designed to function as communicators themselves rather than mediators of human communication (Guzman and Lewis 2019). So, for many newsroom executives and journalists in the Global North, the use of AI has been seen as positive – speeding up mundane procedures and freeing journalists from repetitive, boring tasks in order to focus on more creative, in-depth journalism work (Schapals and Porlezza 2020). However, there has been significant cultural resistance too (Beckett 2019; Thurman, Dörr, and Kunert 2017), with journalists feeling that their privileged roles are under threat, and AI can be used to dispense with human reporters altogether.

However, theorists argue that to work effectively, AI needs human agency (Marconi 2017; Diakopoulos 2019). There is clearly a need to understand more clearly how journalists and AI interact to fully understand the concerns around autonomy and agency that this new technology is raising (Cohen 2018). Any new technical development in journalism is commonly greeted with over-enthusiastic predictions, but even for those who see the positive in AI's incorporation into journalistic labour, there are still underlying problems, specifically for the Global South. Any technological system will necessarily reflect both the conscious and unconscious bias of its maker (Broussard et al. 2019). This proves problematic because of the under-representation of marginalized communities in this area (West, Whittaker, and Crawford 2019), and as such, there is also bias towards minority groups (Johnson 2021). For example, while there has been much

discussion around privacy concerns, these are often seen from a Global North (and individualistic) standpoint, whereas parts of East Asia and Africa have a much more collective sense (Namara et al. 2018; Yuki 2003). Thus, solutions to Western" privacy concerns may not be suitable for other parts of the world (Abebe 2019).

News Innovation and AI Adoption in the Global South

There has been an exponential growth in internet usage in most countries in the Global South (Gondwe 2023), although some scholars argue that this is another form of digital colonialism in which huge tech corporations collect and sell raw data created by these countries (Couldry and Mejias 2020). In particular, many scholars have emphasized the need to examine the different applications of artificial intelligence technologies in non-Western newsrooms, aiming to reach a full understanding of how such technological advances are affecting daily journalism routines in countries with less privileged economies and limited local innovation (Ade-Ibijola and Okonkwo 2023; Goyanes, López-López, and Demeter 2021). Global North perspectives have been upheld without taking into account the particular challenges Global South journalists may encounter, such as authoritarianism, unequal access to technology, repressive media laws and self-censorship (Mutsvairo 2019).

For example, a recent study on 200 journalists from 70 countries across the Global South and emerging economies showed that most respondents integrate AI tools, especially ChatGPT, in their daily work routines mainly for "drafting and editing content, research, transcription, translation, fact-checking" (Radcliffe 2025, 6). However, in Nigeria, while 76 per cent of journalists were keen to be trained in AI, nearly half of these feared it could lead to unemployment, with one in five thinking it could only be operated by experts (Udoh, Nsude, and Oyeleke 2022). This was built on an early conceptual exploration of the issues there, with a lack of training and limited knowledge about AI as barriers for such newsrooms to adopt these tools (Okiyi and Nsude 2020, 158). Meanwhile, major obstacles to the adoption of AI in Pakistani newsrooms are down to a lack of resources, access to data and its accuracy, no government strategy to foster AI in journalism, a lack of education/training for journalists and the existing digital divide (Jamil 2021, 14). Also, a few studies focused on the adoption of AI technologies in Egyptian newsrooms, identifying the limited AI literacy among managers as well as the lack of readiness and motivation of journalists to invest in upgrading their AI-related skills as main challenges hindering AI deployment (Elaasser, Abo Oaf, and Tayie 2024). Mansour (2021) argued that enhancing journalistic efficiency, increasing profits for press institutions and achieving a competitive edge are the main current motives for integrating AI in Egyptian newsrooms (1398).

Yet the opportunities that AI tools offer Global South journalists should be part of any discussion about the algorithmic bias and technological challenges (Kothari and Cruikshank 2022). Practical issues also challenge the use of AI in the Global South, including the lack of clear AI policy and guidance in newsrooms, the insufficient training or support and the lack of public-access datasets for non-Western languages, which limit the way algorithms work (Fu 2022; Radcliffe 2025). Additionally, a significant investigation employing high-impact computational journalism can cost over $$1 million for journalistic labour alone, not including other expenses (Hamilton 2016).

Mapping AI Adoption in Egyptian Newsrooms

The COVID-19 pandemic has accelerated the digitization of editorial content management systems, the increasing use of data journalism and the unprecedented adoption of news automation and artificial intelligence tools in some Egyptian newsrooms (Arafat and Porlezza 2023). Cairo 24 was the first Egyptian newsroom to experiment with news automation and create a news bulletin using an AI-generated news anchor (Arafat and Porlezza 2023). Additionally, Al-Masry Al-Youm newspaper was the first to launch an AI-Powered Semantic Search service in December 2024, following a five-month collaboration with the Google News and Financial Times initiatives. Aiming to enhance reader engagement and interaction, the service was powered by an interactive chatbot that uses Natural Language Processing (NLP) to understand users' inquiries and provide automated responses based on extensive research on the newspaper's website and digital archives (Elgatrifi 2023). In the wake of the increasing AI use, ONA Group for Media Services which owns the Masrawy news website, also launched the first Egyptian Data Journalism unit to teach journalists how to scrape and analyse data. Due to the recent change of managerial logics, the unit was then closed, and relocated by its founder, journalist Maha Salah El-Din, to Al-Masry al-Youm newspaper in 2024. However, these pioneering technological advancements are still considered individual experiences that cannot be generalized across Egyptian newsrooms.

On a broader scale, journalists in Egypt have started experimenting not only with large language modules, but also grammar-checking tools for Arabic such as Lisan and Saheh, and fact-checking tools such as Tahaqaq, although this is usually by individual journalists wanting to improve their skills, rather than attending courses organized formally by their newsrooms (authors 2024). Some Egyptian news websites have started to use AI tools to edit text, photos and videos, translate news and analyse data (Al-Qadi 2024), while some use AI chatbots to interact with their readers and tailor their content accordingly (Hassan 2023). Meanwhile, there are problems in this region in using the fast-growing and probably best-known generative AI chatbot, ChatGPT, which is now used extensively by global North media professionals (Pavlik 2023). ChatGPT attracted one million users in the first week and had reached 100 million users within two months (Hu 2023). Many journalists in Egypt currently use ChatGPT for fact-checking, research and generating pitches for news articles (AlAshry and Al-Saqaf 2024).

Yet there are still challenges around using such tools on a practical level – for example, there remain problems around nuances in language and cultural context, as well as underlying bias. These restrictions on access to available AI tools highlight the need for examining the current use of AI-driven tools by Egyptian journalists on three levels: narrative, practice and technological infrastructure, and investigating the wider technological and organizational factors, including the newsroom's conflicting institutional logics that facilitate or hinder the adoption of these innovations. Hence:

> ***RQ1:*** In terms of practice, what are the main AI-driven tools used by news workers in the four selected newsrooms during the processes of news gathering, selection, writing, editing, and distribution?

> ***RQ2:*** How do different news actors (journalists, news managers, and tech developers) perceive the role of AI technologies and their different applications in Egyptian newsrooms?

RQ3: What technological and organizational factors, including digital infrastructure and institutional logics, do Egyptian news workers perceive to facilitate or hinder the application of AI technologies in their newsrooms?

Theoretical Frameworks

Diffusion of Innovation

Diffusion of innovation (DOI) theory aims to explain the process by which innovations are communicated through different channels and among members of a social system (Rogers 2003, 5). It looks at what factors may advance or obstruct the dissemination of these new ideas (Santos 2023), and also the levels of uncertainty that these innovations cause (García-Avilés 2020). Rapid adoption of new ideas or tools usually comes down to the following five questions: does this offer an obvious advantage; is it compatible with what the organisation [in this case the newsroom] already does; will it be complex to understand or use; would it be easy to do a trial of this new process or tool and how easy is it for those involved to see that there has been actual change take place through the innovation used (Rogers 2003; Ekdale et al. 2015).

As a result, DOI has been used to examine how mass channels and interpersonal contacts may influence opinion and judgement (Okon et al. 2020). Other elements may be management support (or lack of) or structural factors (Holman and Perreault 2023). This has been seen in developments in media convergence (Singer 2004) or the spread of data journalism (García-Avilés, Carvajal-Prieto, and Arias 2019), and now can also be applied to AI adoption in newsrooms.

Von Nordheim et al. (2018) identified three aspects of newsrooms' innovation: technological (e.g., multimedia storytelling, a digital-first publishing strategy, use of social media tools), relational (e.g., changing relationships with the media audience by granting them increased influence in gatekeeping and shaping coverage) and cultural innovation (e.g., transformative changes in organizational culture and practices). However, technological innovation usually occurs faster than the other two innovations in newsrooms because most journalists understand the need to use new tools. Yet, they tend to approach technological change conservatively, integrating new tools into existing practices rather than allowing new technologies to reshape newswork (Ekdale et al. 2015; Reich 2013). Therefore, part of the challenge for managers is that their workers tend to resist changes that they feel disrupt their autonomy or are at odds with accepted journalistic norms and values (or indeed are communicated ineffectively by managers) (Ekdale et al. 2015).

For example, much of journalistic resistance around the use of AI has been due to fears that this can be used as an economic way of reducing jobs by automating certain tasks, or challenge the value and status of journalists' own skills in writing or producing video content by outsourcing this to an AI tool. Contrary to this, it may be younger workers in the newsroom who understand and use these tools more than senior managers, which may make those in a position of power more uncertain about this innovation. Employing this theory in our study will allow to identify the different actors involved in the AI adoption processes and enable such actors to explain their perceptions of the internal and external sources of influence that shape their technological, cultural and relational innovation adoption of AI in Egyptian newsrooms.

Institutional Logics

Identifying these actors also brings us to consider the different pressures, challenges and logics that they will bring when considering their enthusiasm or otherwise for integrating AI tools into their organizations. Institutional logics refer to "socially constructed, normative guides for the interpretation, identity and behaviour of actors within a certain institutional domain" (Lischka 2020, 114). They refer to a "contingent set of rules, premiums and sanctions" that agents "create and recreate in such a way that their behaviour and accompanying perspective are to some extent regularized and predictable" (Jackall 1988, 112). Thereby, they vary depending on the dominant institutional domain an actor is situated in and are reflected in her or his practices and vocabularies.

Even before we consider the current focus on AI and data, there have been competing logics within journalism. What is its purpose? Is it to make money for its owners, thus basically producing a commodity? Or is it a democratic function? As such, while those in managerial positions in news organizations keep a firm eye on the revenue, journalists themselves often focus on their watchdog role (Norris 2014), as representing a "fourth estate" (Deuze 2005). Such conflict may also manifest itself in the past by the "Chinese wall" between advertising and editorial to keep away monetary influence (Lauerer 2019) – although the growth of sponsored content and advertorial challenges this (Ferrer-Conill et al. 2021; Beckert 2023). There is also the issue of audience engagement and orientation, which, in a digital world, is much easier to track and affects the journalistic logic of story focus (Nelson 2021; Broersma 2019; Bruns 2016).

Lischka (2020, 116–117) categorizes four main competing institutional logics in journalism: professional, market, managerial and tech logics. The professional range both from how journalists define themselves – are they objective reporters or activists? – but also by their innate sense of creating a product (in this case, a piece of journalism) that is of high enough standard to be sold to a customer (in this case, the viewer, reader, etc.). There is an obvious overlap with market logics here as well, with the need to generate enough revenue, although there is obvious potential conflict as well. Managerial logic considers how easily organizations can adapt to change, which is of particular relevance with the fast-moving technological advances, because tech logics may not always follow the same focus as professional ones. For example, while traditional journalism has focused on the social impact of a story, algorithms will direct readers to stories that are targeted closely to them personally. The result is an industry that is attempting to negotiate these different logics. Institutional logics allow us to examine the particular set-ups of Egyptian news organizations and how that has helped or hindered innovation around AI.

Research Methods

The paper adopts 26 in-depth interviews with 10 journalists, 6 news managers (e.g., chief editors and editorial managers) and 8 tech developers, including web programmers working for four selected Egyptian newsrooms. In addition, two media technology experts, including a leading data journalist specialist at the American University in Cairo, and the head of strategic planning and media manager of the Artificial Intelligence Journalism for Research and Forecasting (AIJRF) were interviewed for further independent

and critical insights. The sample consists of 12 females and 14 males, with ages ranging from 29 to 66 years old. The interviews were conducted by the first author between July to September 2023 and lasted for 45 min on average. Three follow-up interviews were conducted in June 2024 to capture recent changes.

The selected Arabic-speaking Egyptian newsrooms are: (a) Masrawy (private digital native news site with 9,214,442 million Facebook followers), (b) Al-Watan (private newspaper with online and print versions and about 20 million Facebook followers), (c) Al-Masry Al-Youm (privately-owned newspaper with 18 million Facebook followers) and (d) Cairo 24 (private digital native news site with 6,145,296 million Facebook followers). Due to the lack of official reports or statistics indicating the exact online traffic and circulation rates of Egyptian newspapers and news sites, the number of Facebook followers offers a valuable indicator of the outlet's reach, audience size and extent of influence since Facebook is the most-widely used social media platform in Egypt (Galal 2024) with more than 45.40 million users in Egypt according to latest records (Kemp 2024).

These newsrooms were selected for comparison based on the following criteria: (a) *business model:* the four newsrooms generate their primary revenue from producing online content for their website and social media, with an extensive focus on multimedia news production (Arafat and Porlezza 2023), (b) *ownership:* only privately owned newspapers are selected for analysis. Public-service news outlets, depending on governmental or tax funding, are eliminated from the study and (c) *traffic and search metrics:* despite the lack of official data, the four selected news outlets consistently rank among the top five news websites in Egypt in various non-official reports published by independent sources (Akhbar-Meter 2024; SimilarWeb 2025). These criteria give functional equivalence for this comparative project. All interviews were conducted in Arabic based on participants' requests and then were translated into English for analysis. Since some participants asked for their names to be taken out of the study, we decided to anonymize journalists' names, only referring to them with a number (journalists 1, 2, etc.) and their job title. See Table 1.

Participants were asked questions about: (a) background information about their journalistic career, (b) their definition of news automation and perceptions of the role of algorithms and AI adoption in the different processes of news production, (c) the various AI-driven tools they use in their daily news routine and (d) the various facilitators and challenges of implementing AI tools in their newsrooms. Thematic analysis was conducted with the help of NVivo Pro Software. Analysis followed Webb's thematic analysis guidelines (2014), which first involves open coding to identify the recurrent themes in the interview transcript data. The second analysis step involved grouping codes into categories and creating novel connections among them using axial coding to develop theoretical expansions.

Research Findings

AI-related Narratives, Practices and Digital Infrastructure

To address *RQ1* regarding the use of AI tools in news production **practices,** our participants explained using various GenAI tools for three main purposes. First, in the news gathering stage, most of our participants reported enhancing their story selection and idea generation using Chatbots, especially *ChatGPT* and *Gemini*, for brainstorming and

Table 1. Participants' titles and affiliations (journalists, developers, news managers, tech experts).

Sample of Journalists		
No. of Journalists	Title	Affiliation
J1	Senior News Editor	*Al-Watan* news
J2	Data Journalist	Used to work at *Masrawy* and moved recently to Al Masry Al Youm
J3	Journalist and head of news department	Masrawy digital news outlet
J4	Journalist and editor of the security and judicial sector	*Cairo 24* digital news outlet
J5	Digital Journalist	*Masrawy* digital news outlet
J6	Digital Journalist	*Cairo 24*
J7	Multimedia journalist	Masrawy
J8	Managing editor	Al-Watan News
J9	Managing editor	*Cairo 24*
J10	Journalist	*Cairo 24*
Sample of Developers		
No. of Developers	*Title*	*Affiliation*
D1	Web developer and Programmer	*Cairo 24* digital news outlet
D2	Web Programmer	*Masrawy* digital news outlet
D3	Web Developer	*Al-Watan* News
D4	Head of automation team	*Cairo 24*
D5	Web developer	*Al-Watan* News
D6	Programmer	Previously at *Al-Watan* and *Youm 7*
D7	Programmer and web developer	*Masrawy*
D8	Tech Developer and head of cross-media team	*Masrawy*
Sample of News Managers & Media Experts		
No. of Managers	*Title*	*Affiliation*
M1	Managing editor of content and head of technology development	*Cairo 24* digital news outlet
M2	Editor-in-Chief	Al-Masry Al Youm
M3	Editor-in-Chief of Cairo Live platforms	*Cairo 24*
M4	Editorial Manager	Al-Watan News
M5	Website editorial manager	Al-Watan News
M6	Content Manager and Chief of Central Board	*Masrawy* digital news outlet
E1	Pioneer data journalism trainer, machine learning expert and university lecturer	American University in Cairo (AUC)
E2	Head of strategic planning and media manager	The Artificial Intelligence Journalism for Research and Forecasting (AIJRF)

rephrasing headlines, pairing it with the use of traditional data analytics tools such as *Google Trends* to identify trending news topics based on popularity and search frequency. Second, transcribing interviews using the free version of speech-to-text AI-transcription tools such as Otter.AI was frequently mentioned by many journalists in the news writing stage. Third, many journalists further reported employing GenAI art generators to enhance the visual production processes, especially for data visualization (e.g., graphs, charts and infographics) using tools such as Graphy.AI, Flourish AI and Datawrapper. In particular, editors reported using Google News Initiative tools that are partially AI-powered, such as Google Analytics 4, to track their news website metrics, including audience traffic, engagement and search performance. Interestingly, the majority of

journalists refrained from using AI tools for fact-checking or data verification, perceiving it as an advanced task that requires prior technical training. For example, *Journalist 3* from Masrawy noted the diverse and increasing use of GenAI tools in his newsroom for the previous tasks:

> There has been a huge boom in using AI tools in our newsroom during the past six months. One can use AI tools to generate pictures about an accident to avoid using repetitive traditional archived pictures or to generate ready-to-use infographs. Some colleagues have subscribed to ChatGPT-4 for monthly fees to get speedy answers with higher accuracy.

However, many participants reported practical concerns about the limitations of using GenAI tools to produce Arabic journalistic content. In particular, some argued that AI and machine learning have not reached the required level of accuracy in understanding all colloquial Egyptian Arabic phrases, expressions and common insults, and thus cannot be used to generate (publishable) news. As the managing editor and head of technology development at *Cairo 24,* I explained:

> I wouldn't recommend using GenAI tools such as ChatGPT in newswriting yet because Egyptian audiences are different. AI still lacks creativity in generating Arabic content. For instance, if the government ordered hotels to take responsibility for lost items of guests, a chatbot would generate a boring headline as follows: 'Government obliges hotels to hold responsibility for guests' lost belongings'. Such headline won't be read, published, or even tweeted by our audience as they are not creative, whereas a human-written headline like: 'New announcement from government about guests' belongings: Hotels are fully responsible' might go viral.

Apart from GenAI technologies, many participants explained experimenting recently with various (relational) news innovations that would enhance their interactive relationship with target audiences. For example, the editorial manager of Al-Watan (*M4*) reported experimenting with some algorithmic news recommendation features on their website and establishing the first Egyptian online Metaverse studio to offer an immersive experience for their news consumers. The studio involved a collaboration of 30 journalists in the newsroom and broadcast a few live interviews using virtual avatars to take reporters, guests and remote audiences on virtual tours (Hassan 2023). Similarly, the editorial content manager in Masrawy (M6) reported his newsrooms' continuous experimentation with news gamification, aiming to educate players about current events within an engaging setting as well as creating interactive transmedia (cross-media) stories that involve analysing large datasets using programming languages such as Python. In addition, *Journalist 4* explained that Cairo 24 was the first newsroom to use predefined templates or structured data to automate short news stories in an initiative to integrate AI tools. It is an early stage of automation intended for accelerating news production and distribution to the target audience. Talking about this experiment, *Developer 4,* the head of the automation team at *Cairo 24* explained:

> We haven't finished the automation process yet. We have only completed phase 1. We used Python to create tools capable of producing automated news. The idea is that if any governmental resources, such as the President, Council of Ministers, or Military Spokesperson, tweet anytime, the model would automatically generate news based on those tweets. We trained algorithms to check all the accounts we have entered as resources, extract new data, place it in the pre-defined template, and create short publishable news stories accordingly.

Furthermore, the two experts in our sample reported a great potential in employing AI tools for categorizing and organizing the huge archives owned by Egyptian newsrooms, especially state-owned ones such as Al-Ahram and Akhbar, whose archives date back to more than a century. As expert 1 suggested, making these archives available online using a subscription-based model would generate a new revenue stream for Egyptian newsrooms.

To answer *RQ2* regarding the **narratives** surrounding AI role perceptions by different news actors, our findings demonstrated that the majority of participants strongly believe in AI's positive potential in improving their daily newswork. Particularly, journalists from Cairo 24 and Al-Masry Al-Youm, the two newsrooms that identify themselves as early adopters of AI technologies due to their pioneering experiments with news automation and developing an interactive chatbot, were more enthusiastic and positive about the potential of using AI in journalism, despite lacking the basic knowledge of how the exact technology was developed by programmers and how it actually works.

Generally, the distinction between technical terms such as AI, automation and machine learning was vague for many journalists across different newsrooms. Many reported lacking knowledge about how AI systems actually work and how algorithms are being trained. This chimes with findings from previous research where a lack of comprehensive understanding of AI potential applications among journalists was reported (Elaasser, Abo Oaf, and Tayie 2024, 78). As *Journalist 3* from Masrawy reported, when the hype around GenAI has globally started following the introduction of ChatGPT, the lack of technical knowledge and AI training offered by newsrooms has caused fear, resistance and misconceptions among many Egyptian journalists. While some news managers, including *Manager 3,* the editorial manager of Al-Watan, reported hosting some training workshops by Google representatives and Facebook specialists to employees in their newsrooms, maintaining the sustainability of such training for the long term remains challenging. According to *Journalist 9*, the insufficient professional training on AI use in Egyptian newsrooms has led many journalists to rely on self-study methods through online courses, or informal peer learning in their leisure time, "which increases their workload on one side, and creates an AI literacy disparity among staff members on the other."

However, no matter how far AI and other technological developments progress, most journalists, news managers and developers in our sample agreed that the role of news reporters will remain irreplaceable. As *Journalist 5* described, AI will remain only as "a tiny helper to enhance humans' innovation and creativity". Similarly, *Developer 4* from *Cairo 24* explained:

> Even in the era of AI and extensive technological developments, there is no substitute for a journalist; they will remain irreplaceable for the foreseeable future. AI can only alter news, but only a journalist can obtain it.

In particular, many participants expected the importance of the role of developers and programmers to increase in newsrooms in the near future. For example, *Developer 3* from the Al-Watan news website argued how the role and duties of a programmer will expand in future because more newsrooms will rely heavily on AI and content automation, whereas the number of journalists "will undoubtedly fall as the textual content is the easiest thing to automate". In his opinion, developers will be irreplaceable as newsrooms will always need a developer to maintain the automated AI systems and operations.

Addressing the first part of *RQ3* about the **digital infrastructure** in newsrooms, various challenges were further reported by our participants including the lack of high-speed internet connection, which is needed for AI operations and cloud computing, the lack of access to big datasets needed for machine learning and training models, especially governmental and official data reports and statistics, and the lack of financial resources dedicated to technology development which hinders many newsrooms to buy subscriptions of advanced online AI tools to support their journalists and developers. According to *Developer 5* in Al-Watan:

> The infrastructure-related hurdles have led to the scarcity of Egyptian media institutions conducting experiments to develop new customized AI solutions despite having good human technical team or expertise.

Competing Institutional Logics in AI Adoption

Our data analysis further answered *RQ3,* showing how the competing co-existing technological, professional, managerial and market logics might delay or hinder AI adoption inside the newsroom.

First: Managerial (Business-Centric) Approaches/Concerns:

Findings demonstrated how news managers expressed having ambitious technology development plans for their newsrooms. However, these plans were not necessarily well-communicated or explained to journalists who had different professional logics. This creates what Dodds et al. (2025) call as knowledge silos "where information is isolated within one part of the organization and not easily shared with others" challenging innovation adoption (1). For example, in the *Cairo 24* newsroom, which has a pioneer news automation initiative, only journalists and developers directly involved in the news automation project were able to explain shortcomings and benefits. However, we noticed how other journalists, who did not have direct interaction with the project, struggled to comprehend its functionality and processes or evaluate its effectiveness despite being in the same newsroom. According to the managing editor of *Al-Watan*, even managers need proper training on how to best deploy AI technologies to foster their informed decision-making and effective leadership in newsrooms:

> There is a lack of understanding of the distinction between AI and social media technologies. Personally, I'm still unsure how to deploy news automation in Egypt; we still need a lot of training to properly automate news without human involvement. We are not yet ready for such a significant shift. We can rely on AI as an assisting and supporting tool, but not more; this is a far-fetched step.

Also, most of the news managers in our sample further reported how the lack of financial resources led to less tendency to engage in long-term investment in news tech, such as hiring in-house developers or investing in innovation labs. Since the four news outlets under study rely primarily on advertising and social media revenues as a business model with no external funders or sponsors, all news managers reported prioritizing audience engagement, revenue optimization, speed and accuracy of publication, focusing on business-centric logics. To this end, *Manager 1,* the head of technology development at *Cairo 24,* explained:

> We already plan to use AI tools only if they are beneficial for journalists, not for the sake of showing off or being trendy or even presenting fake scoops. As long as they are better tools, available and accessible, and can ease work on our journalists to always go further, be ahead of their fellows, and publish news with 100% accuracy and transparency.

However, *Industry Expert 1* criticized the mindset of many news managers in Egypt for ignoring the potential of technology investment:

> The dilemma is that some Egyptian institutions think that employing tens of people is better than developing technology as they think it's less expensive. In any developing country like Egypt, the human element is considered as the cheapest thing ever.

In her opinion, *Expert 2* explains how managerial willingness to innovate has driven some newsrooms in the Gulf region to take more advanced steps compared to Egyptian media outlets, especially in KSA and the Emirates. For example, Al Arabia has an AI lab and a Tamara robot news anchor, Al Jazeera and Sky News used hologram technologies, and the Emirati Al Bayan and Etihad that publish fully automated articles using AI.

Second: Professional (Journalistic) Logics

Unlike managerial logics that prioritize revenue sustainability and audience engagement, and technical logics that prioritize innovation and workflow fluency, journalistic logics prioritize content accuracy, editorial integrity and journalism ethics. Therefore, many journalists who expressed belief in AI's potential have also reported many concerns about its impact on journalism, especially in an oppressive media environment characterized by the widespread circulation of misinformation. As *Journalist 8*, the managing editor of *Al-Watan news* explained:

> We cannot compare AI to the human journalist's intelligence, aptitude, style of thinking, and eloquence. In the end, it's just a computer. It can only deliver us news, but it cannot write it professionally without errors. The human actor is capable of perceiving and recognizing the ethics of journalism, such as subjectivity, neutrality, accuracy, protecting privacy, and avoiding plagiarism especially in a restrictive media system characterized by misinformation and fake news

Since most of the popular AI models were created and dominated by Western tech giants such as Meta, Microsoft, OpenAI and others, participants reported various concerns regarding bias and manipulation in training data that were fed into AI learning systems and the many historical, political, cultural and religious mistakes they might include. As *Industry Expert 1* explained:

> In non-Western countries, we cannot simply ask GenAI tools to generate news about controversial topics related to wars or disputes like: 'What happened in the 6th of October war, 1973?' as we don't know what exactly they have learned about this war. Similarly, we can't ask them about religion or countries' relations because we have no idea about what they have been fed. The resources will never be announced. Counting on ChatGPT as a credible resource is like counting on Wikipedia as a credible resource! Wikipedia depends on people's edits and documentation, and ChatGPT depends on unknown resources. Algorithms are already biased and will never be neutral.

Furthermore, a journalist explained how the establishment of the first Egyptian data journalism unit gives a demonstrative example of how conflicting managerial and professional logics have a significant influence on the pace and scale of technological

innovation adoption in newsrooms. *Journalist 2*, the founder and former head of the Data Journalism Unit in *Masrawy* outlet, explained how her willingness to develop a data journalism project was received with resistance from the management at the beginning:

> When institutional management is offered a good idea, they take too much time to consider it. This data journalism unit took me two years in order to work it out. For two years, I've been presenting this project to the administration, and for two years the administration rejected it. Until I decided to submit my resignation. So, when I did that, they approved the project. I was not going to do it really, it was devastating.

To appeal to managerial logics and overcome financial and data-related challenges, the founder of the data journalism unit, *Journalist 2*, further explained how her innovation adoption strategy involved three main goals to promote her innovative unit as a source for generating revenue and traffic to the newsroom. First, it focused on capacity building by offering a six-month training program for fellow journalists on how to scrape and analyse large datasets. The second goal involved launching the first databank for journalists to overcome data access and transparency problems in Egypt, aiming to make it a paid service for other media organizations to use. The third was producing an interactive data-driven news section on the website to enhance news engagement. However, the data journalism project was influenced by a change in management, particularly the departure of the supportive executive editor, leading to its discontinuation and relocation to Al-Masry Al-Youm news organization:

> Our newsrooms' business models depending on ads and social media revenues come with a pressure as experimenting with news innovation requires time, money, and manpower posing an extra burden on the newsroom that prioritizes journalists' commitment to producing timely content and achieving their news production target first. So experimenting with data journalism was perceived as additional load or waste of time

Third: Technical Logics

Developers in our sample reported prioritizing technical logics that involve enhancing the news workflow and upgrading the content management systems (CMS), audience analytics and algorithmic decision-making tools by creating custom software tools and applications to adapt to the technological advancements and changing audience behaviour. Since there are no innovation labs in Egyptian newsrooms, developers rather reported to serve as problem solvers or tech service providers who are usually contacted by news managers and editors to perform a specific task, while not being given free space for innovation, experimentation and creation. *Developer 8,* the head of the cross-media team at Masrawy, explained how the role of programmers goes beyond designing the news website and upgrading its interactive features to develop users' experience and interface, as it involves offering programming solutions, developing algorithms and fostering interaction with other services. However, he further argues:

> The general problem that exists not only in Egypt, but also throughout the Middle East is that media businesses are constantly in a hurry; they do not allow others to develop anything; they do not accept any fresh creative ideas but only stick to traditional and existing ones.

In general, developers strongly believe that AI and journalism should go hand in hand to create a more efficient and creative industry. As *Developer 1* from *Cairo 24* further explained:

> The journalist who will not adapt to AI technology and will not improve his/her skills will come to a standstill and will barely produce; compared to the one who does the opposite. Both AI and the role of journalists are interrelated and integrated, either is never enough, rather, backward and deteriorated.

However, on the technical level, the lack of technical and journalistic training offered to developers by newsrooms, lack of support and financial resources, as well as the full dependence on Western technologies as late adopters/consumers (not early inventors) were reported as three main challenges encountered by Egyptian developers contributing to hindering or slowing-down the diffusion or adoption of innovation processes in Egyptian newsrooms. *Industry Expert 1* explained how the lack of innovation labs and investment in tech development has led newsrooms to use tools available online for anyone, leading to a lack of technological autonomy/agency. Hence, he argued: "As long as we are mere users who cannot be in control of this technology, we will encounter various problems related to bias, inaccuracy and copyrights". Developers further explained how their innovative ideas do not always get rejected because of resistance or financial expenses, but rather the duration of time invested that might not pay off, such as new features that will not generate more website traffic.

Also, *Developer 1*, working for *Cairo 24* website, reported how it is perceived as the programmers' own responsibility to upgrade their own technical skills, with no regular training offered to them by news organizations either on news or latest technologies and AI tools:

> Technology field is evolving so fast unlike other types of jobs that have updates every four or five years. Thus, developers need to be updated every single day due to the continuous changes in AI tools so. We have to improve our skills via attending courses and trainings through Udemy, YouTube, Google, and so on in order to adapt with technological advancements. Hence, I can say it's not a matter of lack of tools, rather, adaptation to technology.

Discussion and Conclusion

Our findings demonstrated how the pace and scale of innovation diffusion within Egyptian newsrooms are shaped by a range of influencing factors including the digital infrastructure, the financial resources dedicated to technology development, the lack of data transparency and innovation labs, as well as misconceptions about technology leading to resistance, as has been seen in some other countries in the Global South (Ashfaq et al. 2022; Jamil 2021; Okiyi and Nsude 2020). Many journalists in our sample are willing to experiment with new GenAI tools, aiming to facilitate their personal work routines or enhance their relationship with audiences through interactive chatbots and recommendation systems, reinforcing both the technological and relational angles of news innovation (Von Nordheim et al. 2018). In other words, innovation of process, related to newswork practices, was gradually introduced when simple GenAI tools were conservatively adopted by individual journalists to facilitate existing tasks without allowing innovation to perform drastic transformative changes to their professional norms and culture. To the contrary, cultural innovation (either organizational or professional) is still slow in many newsrooms. On the organizational level, news managers appeared to be less willing to invest in long-term training or more adventurous types of technological adoption. Coupled with journalists' suspicion of what AI might do to their own jobs,

the conflict between technological, managerial and journalistic logics stymied advances. This was also seen in other African countries, including Nigeria (Okiyi and Nsude 2020).

Managerial logics tend to emphasize risk reduction (time, infrastructure, financial costs), making newsrooms cautious about experimenting with innovative approaches, which might hinder or delay cultural innovation. Taking the data journalist unit as an example, innovation becomes a priority to a newsroom when it not only aligns with the newsroom's marketing strategy as an early adopter of smart tech, but also when it proves to be financially viable with low tech-related costs, and a direct potential to build capacity and increase profitability (cf Lischka 2020). This leaves Egyptian newsrooms at risk of falling behind Gulf countries in the Arab region, where managerial, technical and professional logics have more closely aligned (Saleh and Hassan 2022). This proves how cultural innovation, pertaining to fundamental changes in organizational culture and practices, is usually harder to achieve than technological innovation that focuses merely on tools and processes (Von Nordheim et al. 2018)

Due to the relatively low salaries of journalists in Egypt (Webb 2014), it has been seen as cheaper in the short term to continue to employ reporters rather than invest in digital innovations, which may also include investing time and money to train such journalists to use them or hire teams of technologists to develop tools. In particular, the current shortcomings of AI for the global south newsrooms, including the algorithmic biases and challenges (Johnson 2021; West, Whittaker, and Crawford 2019), and lack of datasets in non-western languages (Fu 2022), can leave Egyptian managers more reluctant to promoting such technologies and/or provide an excuse not to do so.

News managers in this study often show little interest in committing to long-term technology-driven strategies aimed at experimenting with innovation if they have uncertain outcomes or do not involve an immediate influence on increasing business profitability or enhancing news production performance. This is even more challenging since some Egyptian newsrooms do not have long-term tech-adoption strategies yet, like many other newsrooms in the Global South (Radcliffe 2025). Instead, they often rely on the managerial preferences and decisions of their current leaders, whose willingness to embrace new technologies can vary greatly. The data journalism unit is one example of how professional and technical logics are not enough to support innovation if news managers have different priorities and personal inclinations, particularly if this requires investing in the necessary training of journalists before seeing any major changes (see also Allam and El Gody 2023; Bunce 2019 for similar conflicts).

Due to the lack of training provided by news organizations and the Journalists' Syndicate, individual journalists are burdened with the responsibility of self-learning about news technology, including AI and data journalism tools. This added workload might make some of them less inclined to alter their daily work routines, leading to resistance to adopt new innovations (Elaasser, Abo Oaf, and Tayie 2024). Without a comprehensive future-oriented plan by Egyptian newsrooms, journalists will struggle to cope with the technological advancements and optimize new tools and systems for their full benefits. While many journalists and developers perceive AI as a tiny helper or assistant rather than a threat to human journalists, there is a need for more awareness about the news innovation divide between the Global North and South countries and the potential influence of technological colonialism on news dissemination, power imbalances and minority marginalization. This is particularly alarming due to the increasing control and

monopolization of data resources and AI tools by a few (western) tech giants, defeating the quest for unbiased and equitable AI technologies (Cools and Diakopoulos 2024).

This study comes with a few limitations. Gaining approvals from news managers for prolonged access to their newsrooms to conduct ethnography was very challenging due to the work pressure, busy schedules and time constraints journalists, which hindered collecting in-person observations. Future researchers should hold comparisons between newsrooms in different countries in the Global South, shedding light on the most successful experiences to explore how some newsrooms have successfully mitigated technical, financial, managerial and professional challenges.

Disclosure Statement

No potential conflict of interest was reported by the authors.

ORCID

Rana Arafat http://orcid.org/0000-0002-6778-0107

References

Abebe, R. 2019. *Designing Algorithms for Social Good* [Unpublished Doctoral Dissertation]. Cornell University. file:///c:/users/rana%20arafat/downloads/abebe_cornellgrad_0058f_11821.pdf.

Ade-Ibijola, A., and C. Okonkwo. 2023. "Artificial Intelligence in Africa: Emerging Challenges." In *Responsible AI in Africa: Challenges and Opportunities*, edited by D. O. Eke, K. Wakunuma, and S. Akintoye, 101–117. Cham: Springer. https://doi.org/10.1007/978-3-031-08215-3_5.

Akhbarmeter. n.d. *News Websites*. Retrieved October 31, 2025, from https://akhbarmeter.org/publishers.

AlAshry, M. S., and W. Al-Saqaf. 2024. "Constraints on AI: Arab Journalists' Experiences and Perceptions of Governmental Restrictions on ChatGPT." *Journal of Information Technology & Politics*: 1–21. https://doi.org/10.1080/19331681.2024.2421388.

Al-Gody, A. 2021. *Using Artificial Intelligence in the Al Jazeera Newsroom to Combat Fake News*. Qatar: Al Jazeera Media Institute. https://www.diva-portal.org/smash/get/diva2:1611263/FULLTEXT01.pdf

Allam, R., and A. El Gody. 2023. "Diffusion of Development Journalism Inside Egyptian Newsrooms." *The International Journal of Press/Politics* 28 (1): 278–299. https://doi.org/10.1177/19401612211040026

Al-Qadi, H. A.-W. 2024. "The Future of the Journalistic Work Environment in Egyptian News Websites in Light of Artificial Intelligence Applications: A Prospective Study." *Egyptian Journal of Mass Communication Research* 6 (1): 268–338. https://doi.org/10.21608/MEBP.2023.228824.1079.

Al Shurafa, S. 2023. "AI technology-dominated media: Looming threat or opportunity?" *Arab News*. Accessed April 1, 2024. https://www.arabnews.com/node/2409816/media

Arafat, R., and C. Porlezza. 2023. "Exploring News Innovations, Journalistic Routines, and Role Perceptions during the COVID-19 Pandemic: A Case Study of Egyptian Journalists." *Journalism Studies* 24 (14): 1775–1796. https://doi.org/10.1080/1461670X.2023.2192295.

Arafat, R., and C. Porlezza. 2023. "Exploring News Innovations, Journalistic Routines, and Role Perceptions During the COVID-19 Pandemic: A Case Study of Egyptian Journalists." *Journalism Studies* 24 (14): 1775–1796. https://doi.org/10.1080/1461670x.2023.2192295.

Badr, H. 2021. "Egypt: A Divided and Restricted Media Landscape after the Transformation." In *Arab Media Systems*, edited by C. Richter and C. Kozman, 215–232. Cambridge: Open Book Publishers.

Beckert, J. 2023. "A Threat to Journalism? How Journalists and Advertising Sales Managers in News Organizations Perceive and Cope with Native Advertising." *Journalism* 24 (8): 1733–1751. https://doi.org/10.1177/14648849211067584

Beckett, C. 2019. *New Powers, new Responsibilities: A Global Survey of Journalism and Artificial Intelligence*. London: LSE. Accessed August 9, 2023. https://blogs.lse.ac.uk/polis/2019/11/18/new-powers-new-responsibilities/

Belair-Gagnon, V., and A. J. Steinke. 2020. "Capturing Digital News Innovation Research in Organizations, 1990–2018." *Journalism Studies* 21 (12): 1724–1743. https://doi.org/10.1080/1461670X.2020.1789496

Birch, K. (2023, May 10). "ChatGPT and the middle east: Everything You need to know." *Business Chief EMEA*. Accessed January 23, 2025. https://businesschief.eu/technology/chatgpt-and-the-middle-east-Everything-You-need-to-know

Bleyen, V. A., Sven Lindmark, Heritiana Ranaivoson, Pieter Ballon, et al. 2014. "A Typology of Media Innovations: Insights from an Exploratory Study." *The Journal of Media Innovations* 1 (1): 28–51. https://doi.org/10.5617/jmi.v1i1.800

Broersma, M. (2019). Audience Engagement. *The International Encyclopedia of Journalism Studies*, 1–6.

Broussard, M., N. Diakopoulos, A. L. Guzman, R. Abebe, M. Dupagne, and C. H. Chuan. 2019. "Artificial Intelligence and Journalism." *Journalism & Mass Communication Quarterly* 96 (3): 673–695. https://doi.org/10.1177/1077699019859901.

Bruns, A. 2016. "Making Audience Engagement Visible: Publics for Journalism on Social Media Platforms." In *The Routledge Companion to Digital Journalism Studies*, edited by B. Franklin and S. Eldridge, 325–334. London: Routledge.

Bunce, M. 2019. "Management and Resistance in the Digital Newsroom." *Journalism* 20 (7): 890–905. https://doi.org/10.1177/1464884916688963

Cohen, N. 2018. "At Work in the Digital Newsroom." *Digital Journalism* 4 (5): 1–21.

Cools, H., and N. Diakopoulos. 2024. "Uses of Generative AI in the Newsroom: Mapping Journalists' Perceptions of Perils and Possibilities." *Journalism Practice, Online First*: 1–19. https://doi.org/10.1080/17512786.2024.2394558.

Couldry, N., and U. A. Mejias. 2020. "The Costs of Connection: How Data Are Colonizing Human Life and Appropriating It for Capitalism." *Social Forces* 99 (1): e6. https://doi.org/10.1093/sf/soz172.

Deuze, M. 2005. "What Is Journalism? Professional Identity and Ideology of Journalists Reconsidered." *Journalism* 6 (4): 442–464. https://doi.org/10.1177/1464884905056815

Diakopoulos, N. 2019. *Automating the News: How Algorithms Are Rewriting the Media*. Cambridge, MA: Harvard University Press.

Dodds, T., A. Vandendaele, F. M. Simon, N. Helberger, V. Resendez, and W. N. Yeung. 2025. "Knowledge Silos as a Barrier to Responsible AI Practices in Journalism? Exploratory Evidence from Four Dutch News Organisations." *Journalism Studies* 26 (6): 740–758. https://doi.org/10.1080/1461670X.2025.2463589.

Ekdale, B., J. B. Singer, M. Tully, and S. Harmsen. 2015. "Making Change: Diffusion of Technological, Relational, and Cultural Innovation in the Newsroom." *Journalism and Mass Communication Quarterly* 92 (4): 938–958.

Elaasser, S., M. Abo Oaf, and S. Tayie. 2024. "Experts' Perception of Artificial Intelligence Knowledge in Egyptian Newsrooms." *Insights into Language, Culture and Communication* 4 (1): 68–82. https://doi.org/10.21622/ILCC.2024.04.1.749.

Elgatrifi, A. (2023, July 25). "Generative AI in journalism, how to tame the future teller?" *Al Masry Elyoum*. (In Arabic). https://www.masrawy.com/news/news_essays/details/2023/7/25/2446061/-الذكاء-الاصطناعي-التوليدي-في keyword

Ferrer-Conill, R., E. Knudsen, C. Lauerer, and A. Barnoy. 2021. "The Visual Boundaries of Journalism: Native Advertising and the Convergence of Editorial and Commercial Content." *Digital Journalism* 9 (7): 929–951. https://doi.org/10.1080/21670811.2020.1836980

Fu, Gratiana. 2022. *Toward Ethical Artificial Intelligence in International Development*. Center for Digital Acceleration (CDA) Insight. https://dai-global-digital.com/cda-insights-2022-toward-ethicalartificial-intelligence-ininternational-development.html (accessed 5 May 2023).

Galal, S. (2024). *Penetration rate of social media in Egypt*. Statista. https://www.statista.com/statistics/1312579/penetration-rate-of-social-media-in-egypt/

García-Avilés, J. A. 2020. "Diffusion of Innovation." In *The International Encyclopedia of Media Psychology*, edited by K. D. van Bulck, D. R. Ewoldsen, M.-L. Mares, E. Scharrer, and M. Achterberg, 1–8. Hoboken, NJ: JohnWiley and Sons.

García-Avilés, J. A., M. Carvajal-Prieto, F. Arias, and A. De Lara-González. 2019. "How Journalists Innovate in the Newsroom. Proposing a Model of the Diffusion of Innovations in Media Outlets." *The Journal of Media Innovations* 5 (1): 1–16. https://doi.org/10.5617/jomi.v5i1.3968

Gondwe, G. 2023. "CHATGPT and the Global South: How Are Journalists in Sub-Saharan Africa Engaging with Generative AI?" *Online Media and Global Communication* 2 (2): 228–249. https://doi.org/10.1515/omgc-2023-0023.

Goyanes, M., P. C. López-López, and M. Demeter. 2021. "Social Media in Ecuador: Impact on Journalism Practice and Citizens' Understanding of Public Politics." *Journalism Practice* 15 (3): 366–382. https://doi.org/10.1080/17512786.2020.1724180

Gutierrez Lopez, M., C. Porlezza, G. Cooper, S. Makri, A. MacFarlane, and S. Missaoui. 2023. "A Question of Design: Strategies for Embedding AI-Driven Tools into Journalistic Work Routines." *Digital Journalism* 11 (3): 484–503. https://doi.org/10.1080/21670811.2022.2043759

Guzman, A. L., and S. C. Lewis. 2019. "Artificial Intelligence and Communication: A Human–Machine Communication Research Agenda." *New Media & Society* 22 (1): 1461444819858691.

Hamilton, J. T. 2016. *Democracy's Detectives: The Economics of Investigative Journalism*. Cambridge, MA: Harvard University Press.

Harb, Z., and R. Arafat. 2024. "The Adoption of Artificial Intelligence Technologies in Arab Newsrooms: Potentials and Challenges." *Emerging Media* 2 (3): 371–381. https://doi.org/10.1177/27523543241291068

Hassan, R. A. A. 2023. "Auditing Bias in Artificial Intelligence in Light of the AI Audit Framework of the Institute of Internal Auditors (IIA) - an Analytical Theoretical Study." *Journal of Contemporary Business and Economic Studies* V6 (1): 429–467.

Holman, L., and G. P. Perreault. 2023. "Diffusion of Innovations in Digital Journalism: Technology, Roles, and Gender in Modern Newsrooms." *Journalism* 24 (5): 938–957. https://doi.org/10.1080/1461670X.2023.2192295.

Hu, K. (2023). "ChatGPT sets record for fastest-growing user base – analyst note." *Reuters*. Accessed January 23, 2025. https://www.reuters.com/technology/chatgpt-sets-record-fastest-growing-user-base-analyst-note-2023-02-01/

Jackall, R. 1988. *Moral Mazes*. Oxford: Oxford University Press.

Jamil, S. 2021. "Artificial Intelligence and Journalistic Practice: The Crossroads of Obstacles and Opportunities for the Pakistani Journalists." *Journalism Practice* 15 (10): 1400–1422. https://doi.org/10.1080/17512786.2020.1788412

Johnson, K (2021). "OpenAI and Stanford researchers call for urgent action to address harms of large language models Like GPT-3." *VentureBeat*, February 9. Accessed August 9, 2023. https://venturebeat.com/2021/02/09/openai-and-stanford-researchers-call-for-urgent-action-to-address-harms-of-large-language-models-like-gpt-3/

Kemp, S. (2024). *Digital 2024: Egypt*. *DataReportal*. https://datareportal.com/reports/digital-2024-egypt

Kothari, A., and S. A. Cruikshank. 2022. "Artificial Intelligence and Journalism: An Agenda for Journalism Research in Africa." *African Journalism Studies* 43 (1): 17–33. https://doi.org/10.1080/23743670.2021.1999840

Lauerer, C. 2019. "Advertising and Journalism." In *Oxford Research Encyclopedia of Communication*. Oxford: Oxford University Press. Retrieved 31 October 2025, from https://oxfordre.com/communication/view/10.1093/acrefore/9780190228613.001.0001/acrefore-9780190228613-e-775.

Lewis, S. C. 2019. "Artificial Intelligence and Journalism." *Journalism & Mass Communication Quarterly* 96 (3): 673–695. https://doi.org/10.1177/1077699019859901.

Lewis, S. C., A. L. Guzman, and T. R. Schmidt. 2019. "Automation, Journalism, and Human–Machine Communication: Rethinking Roles and Relationships of Humans and Machines in News." *Digital Journalism* 7 (4): 409–427. https://doi.org/10.1080/21670811.2019.1577147.

Lischka, J. A. 2020. "Fluid Institutional Logics in Digital Journalism." *Journal of Media Business Studies* 17 (2): 113–131. https://doi.org/10.1080/16522354.2019.1699764

Mansour, A. A. 2021. "The Future of Egyptian Journalism in Light of Artificial Intelligence Journalism Techniques over the Next Decade, from 2021 to 2030, a Forward-Looking Study." *Journal of Mass Communication Research* 58 (3): 1251–1300. https://doi.org/10.21608/jsb.2021.184610.

Marconi, F. 2017. *The Future of Augmented Journalism; a Guide to Newsrooms in the Age of Smart Machines*. Associated Press. Accessed August 14, 2023. https://jeanetteabrahamsen.com/wp-content/uploads/2017/09/ap_insights_the_future_of_augmented_journalism.pdf.

Mutsvairo, B. 2019. "Challenges Facing Development of Data Journalism in Non-western Societies." *Digital Journalism* 7 (9): 1289–1294. https://doi.org/10.1080/21670811.2019.1691927

Namara, M., D. Wilkinson, B. M. Lowens, B. P. Knijnenburg, R. Orji, and R. L. Sekou. 2018, December. "Cross-cultural Perspectives on EHealth Privacy in Africa." In *Proceedings of the Second African Conference for Human Computer Interaction: Thriving Communities*, edited by H. Winschiers-Theophilus, and I. van Zyl. New York: Association for Computing Machinery.

Nelson, J. L. 2021. "The Next Media Regime: The Pursuit of 'Audience Engagement' in Journalism." *Journalism* 22 (9): 2350–2367. https://doi.org/10.1177/1464884919862375

Norris, P. 2014. "Watchdog Journalism." In *The Oxford Handbook of Public Accountability*, edited by M. Bovens, R.E. Goodin, and T. Schillemans, 525–541. Oxford: Oxford University Press.

Okiyi, G., and I. Nsude. 2020. "Adopting Artificial Intelligence to Journalistic Practices in Nigeria: Challenges and Way Forward. University Of Nigeria." *Interdisciplinary Journal of Communication Studies* 24 (1): 20–37.

Okon, P. E., C. C. Ndukwe, C. J. Nweke, and U. C. Okugo. 2020. "Diffusion of Innovation: The Perception and Attitude of Journalists in South-South Nigeria on e-Governance." *Acta Universitatis Danubius. Communicatio* 14 (1): 58–76.

Pavlik, J. V. 2023. "Collaborating with Chatgpt: Considering the Implications of Generative Artificial Intelligence for Journalism and Media Education." *Journalism and Mass Communication Educator* 78 (1): 84–93. https://doi.org/10.1177/10776958221149577.

Radcliffe, D. 2025. "How AI Is changing journalism in the Global South." *International Journalists' Network* (IJNet). Accessed July 13, 2025. https://ijnet.org/en/story/How-ai-changing-journalism-global-south

Reich, Z. 2013. "The Impact of Technology on News Reporting: A Longitudinal Perspective." *Journalism and Mass Communication Quarterly* 90 (3): 417–434. https://doi.org/10.1177/1077699013493789.

Rogers, E. M. 2003. *Diffusion of Innovations* (5th ed.). New York, NY: Free Press.

Saleh, K. S., and H. D. Hassan. 2022. "TV News Production in Smart Newsrooms Using Modern Technologies." *Journal of Positive School Psychology* 6 (5): 4150–4166.

Santos, M. C. D. 2023. "Attraction Journalism with Immersion and Presence-based Systems: Experimental Approach Applying the Classical Diffusion of Innovation Theory." *Brazilian Journalism Research* 19:E1549.

Schapals, A. K., and C. Porlezza. 2020. "Assistance or Resistance? Evaluating the Intersection of Automated Journalism and Journalistic Role Conceptions." *Media and Communication* 8 (3): 16–26. https://doi.org/10.17645/mac.v8i3.3054

Similarweb. 2025. *Top News & Media Publishers Websites Ranking in Egypt*. https://www.similarweb.com/topwebsites/egypt/news-and-media/.

Singer, J. B. 2004. "Strange Bedfellows? The Diffusion of Convergence in Four News Organizations." *Journalism Studies* 5 (1): 3–18. https://doi.org/10.1080/1461670032000174701

Storsul, T., and A. Krumsvik. 2013. "What is Media Innovation?" In *Media Innovations: A Multidisciplinary Study of Change*, edited by T. Storsul and A. Krumsvik, 13–26. Gothenburg: Nordicom.

Thurman, N., K. Dörr, and J. Kunert. 2017. "When Reporters Get Hands-on with Robo-writing: Professionals Consider Automated Journalism's Capabilities and Consequences." *Digital Journalism* 5 (10): 1240–1259. https://doi.org/10.1080/21670811.2017.1289819.

Thurman, N., S. C. Lewis, and J. Kunert. 2019. "Algorithms, Automation, and News." *Digital Journalism* 7 (8): 980–992. https://doi.org/10.1080/21670811.2019.1685395.

Udoh, W. A., I. Nsude, and A. S. Oyeleke. 2022. "Awareness of Artificial Intelligence for News Production among Journalists in Ebonyi State Nigeria." *International Journal of Network and Communication Research* 7 (1): 33–45. https://doi.org/10.37745/ijncr.16/vol7n13345

Von Nordheim, G., K. Boczek, and L. Koppers. 2018. “Sourcing the Sources: An Analysis of the Use of Twitter and Facebook as a Journalistic Source Over 10 Years in the New York Times, The Guardian, And Süddeutsche Zeitung.” *Digital Journalism* 6 (7): 807–828. https://doi.org/10.1080/21670811.2018.1490658.

Webb, E. 2014. *Media in Egypt and Tunisia*. New York: Palgrave Macmillan.

West, S. M., Whittaker, M., & Crawford, K. (2019). "Discriminating systems: Gender, race and power in AI." https://ainowinstitute.org/discriminatingsystems.html

Wu, S., E. C. Tandoc, and C. T. Salmon. 2019. “Journalism Reconfigured: Assessing Human- Machine Relations and the Autonomous Power of Automation in News Production.” *Journalism Studies* 20 (10): 1440–1457. https://doi.org/10.1080/1461670X.2018.1521299

Yuki, M. 2003. “Intergroup Comparison versus Intragroup Relationships: A Cross-cultural Examination of Social Identity Theory in North American and East Asian Cultural Contexts.” *Social Psychology Quarterly* 66 (2): 166–183. https://doi.org/10.2307/1519846.