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Integrating robot journalism into newsrooms: perspectives, opportunities, and challenges among Egyptian journalists

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This study explored how Egyptian journalists perceive the opportunities and challenges of robot journalism and its effect on newsroom operations. Guided by Roger Fidler's Mediamorphosis Theory and in-depth interviews with journalists, the study reveals that artificial intelligence improves efficiency, data processing and investigative reporting. The participants cited ethical responsibility, employment stability, and cultural appropriateness as areas of concern. The findings highlight how Egyptian reporters are seeking a moderate solution and automation, which does not compromise professional judgment or public confidence. The study reveals that the adoption of robot journalism needs to be done responsibly and contextually to facilitate innovation in Egypt's rapidly evolving media landscape.

KEYWORDS

artificial intelligence (AI), artificial intelligence journalism, automated journalism, Egypt, robot journalism

1 Introduction

The global media landscape is undergoing rapid transformation in today's digital age (Sonni et al., 2024). The emergence of the internet has reshaped the media landscape, prompting the creation of new platforms. It has transformed the distribution, consumption, and production of media content (Batra, 2023; Túñez-López et al., 2019; Veglis and Maniou, 2019). People can easily access information online via smartphones and social media platforms (Batra, 2023). The internet has increased the involvement of more organizations and individuals in news production (Jung et al., 2017). The internet provokes the incorporation of hypertextuality, cybermedia, multimedia, and interactivity in journalism (Túñez-López et al., 2019). The internet has allowed the implementation of automation and computational processes throughout all aspects of mass communication (Veglis and Maniou, 2019). Digital innovations are changing newsroom practices globally (Ndlovu, 2024).

Journalism has experienced several changes that have influenced its workflow (Saad and Issa, 2020). One of these changes is Artificial Intelligence; it has become a fundamental part of the new media landscape (Ali and Hassoun, 2019). AI tools are upending news distribution and creation (Ndlovu, 2024). AI is progressively becoming more prevalent in news agency newsrooms and mass media (Noain Sánchez, 2022). Operational changes have accelerated the adoption of AI technologies, news automation, and editorial news production among Egyptian

journalists (Arafat and Porlezza, 2023). AI has introduced new terms such as algorithmic journalism or robot journalism, which refers to using robots to create journalistic content (Saad and Issa, 2020). Automated news generation and dissemination without human direction is already a reality, a fact often unknown to the public (Jamil, 2021). AI has reshaped journalistic work, and automated journalism has gained wider acceptance (Siitonen et al., 2024). The rapid integration of AI into journalism presents both opportunities and challenges, and its influence requires further understanding (Sonni et al., 2024).

According to the Global AI Index, Egypt had an international AI capacity ranking of 52 out of 62 countries. It also has a 55 in the AI infrastructure and development. This ranking has a low score compared to other Arab nations, such as the UAE and Saudi Arabia (Tortoisemedia, 2024; Okela, 2025). Nevertheless, regardless of the significance of AI and the Egyptian delayed AI status, published research on the impact of AI on journalists is scarce; by using a quantitative method with Egyptian journalists and media elite, research in this area has focused on journalists' attitudes towards AI (El-Behery, 2022; Zidane and Al-Dagher, 2025). Employing AI in data journalism (El-Sayed, 2025) and the challenges and opportunities in journalism education (Okela, 2025). Filling this gap is particularly crucial in the context of Egyptian media. Robot journalism represents a pivotal shift in Egyptian journalism, where news production is no longer the sole domain of humans; automated systems can now assume the role of journalists. Furthermore, the objective of this research is to explore Egyptian journalists' perceptions of the opportunities and challenges associated with the adoption of AI. To illuminate this, employing the Mediamorphosis theoretical framework, this article contributes insights into:

1) How do Egyptian journalists perceive the role of AI in the newsroom?
2) What are the potential opportunities for transforming journalistic efficiency in the Egyptian context?
3) What challenges hinder robot journalism adoption within Egypt's mainstream news media?

2 Literature review

2.1 The integration of AI into journalism

AI is increasingly recognized as a transformational technology and a strategic priority across industries, including media (Chan-Olmsted, 2019). Globally, AI adoption in journalism is often framed to manage large data flows, automate routine tasks, and personalize content delivery (Túñez-López et al., 2019; Batra, 2023). While these perspectives emphasize efficiency and innovation, they often assume a homogeneous newsroom context, overlooking how professional norms, ethical considerations, and audience expectations influence AI adoption (Hassouni and Mellor, 2024). In particular, the literature largely neglects non-Western contexts, leaving important questions about localized practices, cultural interpretation, and regulatory constraints underexplored.

The development of AI in journalism encompasses automated and robot journalism, as well as fake news detection and AI-driven news robots (Cardaș-Răduța, 2024). Technical advances in machine learning, computer vision, optimization, planning, and scheduling enable these innovations (de-Lima-Santos and Ceron, 2021; Zhang, 2023). Globally, AI newscasters and robot journalists exemplify the potential for high-volume automated content generation. However, these innovations simultaneously provoke critical debates regarding the displacement of human labor, editorial authority, and accountability (Kim and Kim, 2018; Nur Fitria, 2024; Salazar, 2018). This reflects a recurring tension in the literature, whereby AI enhances operational efficiency, yet its adoption is neither neutral nor uniformly beneficial, and ethical and professional implications are often overlooked in broad global analyses (Canavilhas, 2022; Bhattacharya, 2024).

In Arab media contexts, and specifically in Egypt, these global trends intersect with distinct professional, cultural, and regulatory environments (Cui and Wu, 2021; Hamdy and Elias, 2025; Harb and Arafat, 2024). The adoption of AI, including robot journalism initiatives, is shaped not only by technological capacity but also by newsroom hierarchies, state digital agendas, resource constraints, and audience expectations. For instance, limited local datasets, Arabic dialectal diversity, and culturally specific storytelling norms complicate the implementation of automated news tools and content personalization (Batra, 2023; Cardaș-Răduța, 2024; Fidler, 1997). Such constraints demonstrate that AI integration in Egypt is a negotiated process, where technology supplements rather than supplants human journalism. This contrasts with much of the Western literature, which often frames AI adoption as a straightforward productivity upgrade.

Evaluating the existing research highlights several gaps. First, the literature remains largely Western-centric, offering limited insight into localized professional and ethical practices. Second, empirical studies on Egyptian newsrooms are scarce, leaving open critical questions about how AI technologies, including robot journalism tools, are interpreted, resisted, or integrated in practice (Jamil, 2021; Okocha, 2022; Nur Fitria, 2024; Wang, 2023). By contrast, contextualized analyses in Egypt reveal a nuanced dynamic in which AI, including robot journalism applications, serves as both a tool for operational efficiency and a source of professional tension, ethical negotiation, and audience-mediated legitimacy.

By situating AI adoption, and specifically robot journalism practices, within the Egyptian and broader Arab contexts from the outset, this study moves beyond generic claims of technological efficiency. It emphasizes the interplay between global technological innovation and localized professional, cultural, and regulatory realities, offering a theoretically grounded rationale for examining AI integration as a socio-technical, culturally mediated process (Wang, 2023; Cui and Wu, 2021; Hassouni and Mellor, 2024).

2.2 Opportunities of AI in journalism

AI has emerged as a transformative tool for addressing systemic newsroom challenges, particularly in contexts constrained by limited resources (de-Lima-Santos and Ceron, 2021; Serdouk and Bessam, 2023). By simulating aspects of human intelligence, AI performs tasks with high accuracy, speed, and volume, often surpassing human capabilities (Serdouk and Bessam, 2023). Globally, these applications enhance news production across the lifecycle, including data gathering, automated writing, fact-checking, dissemination, and audience engagement (Gutiérrez-Caneda et al., 2024; Okocha, 2022; Rahman,

2024; Túñez-López et al., 2021). In Egyptian and Arab newsrooms, AI offers promise for sustaining output under staffing and resource limitations, though infrastructure, expertise, and linguistic adaptations remain critical (Harb and Arafat, 2024; Hamdy and Elias, 2025).

A primary opportunity lies in automating repetitive or labor-intensive newsroom tasks. Such tasks include text generation, proofreading, translation, data collection, verification, document classification, and analytics, thereby enabling journalists to focus on investigative and editorial work (Noain Sánchez, 2022; Fridman et al., 2025; Stray, 2021; Gutiérrez-Caneda et al., 2024; Schiffrin, 2024; Rahman, 2024). In Arabic-language contexts, Natural Language Processing (NLP) further extends this potential, facilitating more accurate fact-checking and reporting despite the complexities of dialectal variation (Cardaș-Răduța, 2024; Türksoy, 2022; Rahman, 2024; Okocha, 2022). Yet the literature notes that NLP tools in Arabic remain less mature than in Western languages, reflecting a tension between technological potential and contextual limitations.

Beyond efficiency, AI reshapes content creation, distribution, and audience engagement. Automated journalism tools, including robot writers and robot journalism platforms, enable high-volume, audience-tailored output with enhanced objectivity and reduced bias (Yu and Huang, 2021; Cardaș-Răduța, 2024; Latar, 2018; Wu, 2020; Helberger et al., 2022; Bhattacharya, 2024). AI-driven content curation and audience analytics facilitate non-linear consumption and personalization across multimedia formats, including text, audio, and video, reflecting a shift toward interactive, user-centered engagement (Túñez-López et al., 2021; Alon et al., 2025; Triantafyllou and Kapos, 2025). In Egypt, these innovations face linguistic and cultural challenges, necessitating algorithms tailored to local dialects and audience expectations to maintain relevance (Rahman, 2024; Türksoy, 2022).

AI also functions as a strategic tool for combating misinformation. Machine learning and NLP enhance automated fact-checking and fake news detection, often surpassing manual verification in speed and accuracy (Rahman, 2024; Cardaș-Răduța, 2024; Serdouk and Bessam, 2023). In Egyptian newsrooms, where misinformation is prevalent, AI offers a mechanism to bolster editorial accuracy and public trust, though adoption depends on journalists' trust in these tools and institutional support (Schiffrin, 2024; Okocha, 2022).

AI adoption delivers cost reductions, labor optimization, and scalable content production across print, text, audio, and video platforms (Moran and Shaikh, 2022; Túñez-López et al., 2021; Alon et al., 2025; Triantafyllou and Kapos, 2025; Türksoy, 2022). Localized initiatives, such as Egypt's AI pilots inspired by Gulf-region applications like the UAE's Jais, demonstrate potential workflow efficiencies (Harb and Arafat, 2024; Hamdy and Elias, 2025). Such initiatives often incorporate robot journalism workflows, highlighting the practical integration of AI tools in newsroom operations. However, operational gains do not automatically translate into improved journalistic quality, professional development, or public trust, particularly where training, regulatory alignment, and technical infrastructure are limited (Serdouk and Bessam, 2023; Schiffrin, 2024).

While Western-centric literature emphasizes generalized efficiency and innovation, these findings often overlook how local newsroom contexts influence the adoption of AI (Gutiérrez-Caneda et al., 2024; Rahman, 2024). In Egypt, resource scarcity, linguistic complexity, and institutional realities shape the practical value of automation, positioning AI not as a universal panacea but as a contextually contingent collaborator. Empirical research is particularly needed on robot journalism, examining how Egyptian journalists navigate the interplay between automated workflows, professional judgment, and audience expectations, and moving beyond descriptive efficiency claims toward the socio-professional and ethical implications of AI integration.

2.3 Challenges of AI in journalism

AI adoption in journalism often functions as a cost-cutting mechanism, driving layoffs, channel closures, and digital transitions, while large tech firms profit from journalistic content without compensation (Canavilhas, 2022; Kim and Kim, 2017; Schiffrin, 2024). Globally, this economic logic threatens employment security, but in Egypt, it crystallizes as "digital anxiety," where journalists experience heightened concern for their professional futures (Hassouni and Mellor, 2024). These pressures reveal that AI, including robot journalism initiatives, is not just a technological innovation but a force reshaping professional hierarchies and labor relations in locally specific ways.

Despite rapid adoption, AI in newsrooms remains immature and experimental, struggling with errors, lack of creativity, limited emotional nuance, and inability to handle breaking news or complex investigative narratives (Nur Fitria, 2024; Fridman et al., 2025; Saad and Issa, 2020; Cardaș-Răduța, 2024; Stray, 2021). Automated systems, including robot journalism tools, also require extensive human filtering, as they cannot independently process raw data or encode the tacit knowledge essential for journalistic storytelling (Caswell and Dörr, 2018; Kim and Kim, 2018). AI applications may also increase production costs in some cases (Lyu et al., 2023), highlighting that adoption is not always economically advantageous.

In Egyptian newsrooms, these technical constraints are amplified by linguistic and cultural factors. Many AI models lack Arabic-centric training data, struggle with dialectal variation, and can produce culturally inappropriate or biased content (El Nemr, 2024; Moran and Shaikh, 2022). This underscores that AI, including robot journalism systems, cannot substitute for human judgment and highlights the ongoing need for editorial oversight to maintain linguistic accuracy, contextual relevance, and cultural authenticity.

Black-box algorithms introduce opacity, bias, and threats to fairness, accountability, and editorial independence (Jamil, 2021; Jones et al., 2022; Shin, 2020; Helberger and Diakopoulos, 2023; Ali and Hassoun, 2019; Cools and Diakopoulos, 2024; Rahman, 2024; Sonni et al., 2024). In Egypt's regulated media ecosystem, these risks are intensified by state oversight and professional norms, where the inability of audiences to distinguish between AI- or robot–generated content and human-produced news undermines trust and journalistic authority (Alon et al., 2025; Moran and Shaikh, 2022). The convergence of algorithmic opacity and cultural expectations makes ethical decision-making more complex, requiring careful governance and context-sensitive implementation.

Egyptian journalists often perceive AI-generated or robot journalism content as "not real journalism," reflecting concerns that extend beyond technical limitations (Moran and Shaikh, 2022; El Nemr, 2024). Resistance is grounded in culturally embedded understandings of professional legitimacy, authority, and creativity. While AI and robot journalism tools can handle routine or

standardized reporting, investigative journalism, opinion pieces, and high-stakes coverage demand nuanced human reasoning, ethical judgment, and libel risk management (Stray, 2021; Cardaș-Răduța, 2024). These professional perceptions demonstrate that AI adoption, including the integration of robot journalism, is a socio-professional negotiation where cultural values intersect with technological capabilities.

While Western literature identifies generic challenges of AI in journalism (de-Lima-Santos and Ceron, 2021; Noain Sánchez, 2022), Egyptian newsrooms reveal how these challenges are contextually refracted through local regulatory frameworks, socio-cultural norms, and professional identities. Technical limitations, economic pressures, and algorithmic risks interact with cultural expectations to shape a unique landscape of resistance, adaptation, and negotiation. In this setting, AI, including robot journalism technologies, is best conceptualized as a supportive tool rather than a replacement, emphasizing collaboration between human journalists and machines. Such an approach aligns technological efficiency with cultural authenticity, professional legitimacy, and ethical standards, providing a pathway for context-sensitive AI integration in Egyptian journalism.

2.4 Emerging insights and research needs in non-Western newsrooms

AI is driving profound transformations in global journalism, particularly through the use of automated journalism and robot journalism technologies. However, in non-Western and Arab contexts, including Egypt, substantial knowledge gaps persist regarding the socio-cultural, ethical, and operational implications of these technologies (Hassouni and Mellor, 2024; Arafat and Porlezza, 2023; Harb and Arafat, 2024). Existing research remains heavily skewed toward Western frameworks, privileging technological capability and organizational efficiency over local contextual realities. AI and robot journalism research mainly relies on surveys and interviews, which often overlook journalists' lived experiences, newsroom hierarchies, professional concerns, and strategies for adapting to AI adoption (Moran and Shaikh, 2022; Hassouni and Mellor, 2024).

Qualitative investigations are emerging but remain scarce. Studies such as Arafat and Porlezza (2023) offer insight into the experiences of Egyptian journalists during the COVID-19 pandemic; however, they do not systematically examine the integration of AI or robot journalism practices. Similarly, AI adoption in other Global South contexts, such as Nigeria, India, and Brazil, reveals uneven implementation amid structural, infrastructural, and ethical challenges (Okocha, 2022; Talabi et al., 2024; Gbaden et al., 2024; Bhattacharya, 2024; Deepak et al., 2020; de-Lima-Santos and Ceron, 2021; Pinto and Barbosa, 2024).

Nigeria struggles with infrastructural deficits, digital literacy limitations, and workforce anxieties despite training enthusiasm (Okocha, 2022; Talabi et al., 2024; Gbaden et al., 2024). India experiments with AI news anchors and vernacular tools, including robot journalism applications to combat misinformation, but this approach risks eroding the "human touch" and deepening digital divides (Bhattacharya, 2024; Deepak et al., 2020). Brazil leverages AI for digital production and process innovation, though resource scarcity and public trust issues constrain large-scale automation (de-Lima-Santos and Ceron, 2021; Pinto and Barbosa, 2024). These cases illustrate how non-Western newsrooms navigate complex socio-technical, regulatory, and cultural landscapes, often emphasizing the coexistence of AI, robot journalism tools, and human labor rather than outright replacement.

Egypt exhibits distinct dynamics that differentiate its trajectory of AI adoption. State oversight and media norms shape a cautious regulatory environment, while generational resistance and legacy newsroom hierarchies amplify workforce concerns. Arabic linguistic complexities, such as resource-poor NLP environments struggling with morphological richness and dialectal variation, necessitate moderated, human-led automation to ensure accuracy and cultural relevance (Haboussi et al., 2025). Egypt also relies on donor-supported initiatives for experimental AI integration, often including robot journalism pilots, which reflects resource and infrastructure constraints similar to those found in other Global South contexts.

To address these gaps, this study employs in-depth qualitative interviews with 20 purposively sampled Egyptian journalists, editors, and academics. This approach captures the nuanced processes of human-AI and human–robot journalism interaction, adaptation, and resistance within local newsrooms, prioritizing socio-cultural and institutional specificity over generalized survey-based findings. It directly responds to calls for locally grounded AI and robot journalism research, filling a methodological void in non-Western media studies.

Theoretically, the study is grounded in Roger Fidler's Mediamorphosis Theory, which posits that media evolution is a gradual transformation rather than an abrupt technological replacement (Fidler, 1997; Talabi et al., 2024). This framework is particularly relevant in Egypt, where AI innovations and robot journalism practices must coexist with existing newsroom practices, professional values, and socio-cultural norms. Applying Mediamorphosis enables a critical examination of acceptance, negotiation, and resistance to robot journalism, highlighting AI's mediamorphic effects in non-Western, digitally evolving newsrooms.

Overall, this research advances understanding in multiple ways. It provides context-sensitive insights into the practical, ethical, and socio-cultural implications of AI and robot journalism in Egyptian newsrooms. It also refines theoretical perspectives on media evolution in Global South contexts and informs evidence-based digital media policy and ethical guidance. By systematically integrating the Egyptian and Arab contexts from the outset and emphasizing qualitative depth, this study moves beyond descriptive, generic accounts, offering context-sensitive insights that contribute to scholarship and practice in non-Western journalism studies.

3 Theoretical framework

This study is grounded in Roger Fidler's Mediamorphosis Theory, which conceptualizes media evolution as a gradual, adaptive transformation. New media, including AI-driven journalism and robot journalism, emerge incrementally from existing forms rather than appearing as abrupt replacements, while legacy media adapt to maintain relevance (Fidler, 1997). Users adopt new technologies based on perceived usefulness, ease of use, and accessibility (Deepak et al., 2020).

The core principles of Mediamorphosis are: (1) Coevolution and coexistence: All communication media forms grow within a complex, expanding, adaptive system. (2) Metamorphosis: New media gradually

emerge from the metamorphosis of older media and do not arise independently and spontaneously. (3) Propagation: Emerging communication media forms propagate dominant traits from older forms. (4) Survival: All communication media forms require adoption and evolution to survive in a changing environment. (5) Opportunity and need: Adopting new media depends on motivating reasons and opportunity. (6) Delayed adoption: Adopting new media technologies always takes longer than anticipated to achieve commercial success (Fidler, 1997).

Applied to journalism, these principles frame AI integration as an evolutionary transformation: automated journalism and robot journalism systems coexist with human reporters, gradually enhancing production, investigative reporting, and audience engagement without supplanting traditional practices (Talabi et al., 2024; Okocha, 2022). In Arab and Egyptian contexts, this perspective challenges narratives of technological "extinction," emphasizing negotiated, incremental innovation that preserves professional, cultural, and ethical values. Adoption is moderated by resource constraints, newsroom hierarchies, regulatory frameworks, and social expectations, highlighting the principle of delayed adoption and the propagation of culturally grounded journalistic norms.

Empirically, this study extends Mediamorphosis to a non-Western setting, illustrating how AI adoption and robot journalism practices interact with Arabic linguistic complexities, newsroom routines, and socio-cultural expectations. Comparative insights from other Global South contexts, such as Brazil, Nigeria, and India, further demonstrate how regulatory and operational constraints shape distinct, locally mediated media evolutions. Ultimately, this framework situates the adoption of AI and robot journalism as a co-evolutionary, context-sensitive process, bridging global technological trends with the realities of Egyptian journalism and illustrating the applicability of Fidler's principles in non-Western media contexts.

4 Methods

This study employed a qualitative research design, incorporating in-depth interviews, to explore how Egyptian journalists and editors perceive, engage with, and face challenges in adopting robot journalism. Choosing this approach enables an in-depth understanding of participants' experiences, views, and attitudes, facilitates the collection of rich, detailed narratives, and allows researchers to probe emergent themes.

A sample of 20 Egyptian journalists, including journalists, editors, video and photojournalists, was selected (see Table 1). This sampling technique ensured the inclusion of participants with diverse knowledge and experience related to AI and automated journalism in Egyptian newsrooms. These journalists came from various media outlets (print, broadcast, and digital) and represented a range of demographic backgrounds.

The data collection employed in-depth interviews in Arabic between October 2024 and April 2025. The authors obtained approval from their institution's ethics committee before conducting the interviews. Information sheets were prepared to provide a clear description of the study's purpose, procedures, risks, benefits, and confidentiality measures to maintain participant anonymity, and were sent to the journalists before the interviews to ensure they understood the study's purpose. In accordance with ethical research standards, participants provided informed consent, understanding that their responses would be kept confidential and used solely for the purposes of this study. Sharing full transcripts or recordings could risk identifying participants and would violate obligations to protect their privacy and sensitive information.

TABLE 1 Demographic profile of the study sample.

Code	Job	Age
P01	Editor-in-Chief	50
P02	Journalist/Columnist	43
P03	Journalist	55
P04	Media Analyst	39
P05	Journalist (Finance Reporter)	41
P06/P10	Broadcast Reporter	52
P07	Journalist and Researcher	49
P08	Journalist	44
P09	Correspondent	37
P11	Editor	35
P12	Data Journalist	42
P13	Editor	36
P14	Photojournalist	50
P15	Journalist and Researcher	38
P16	Editor	44
P17	Reporter	53
P18	Video Journalist	34
P19	Editor	40
P20	Journalist and Researcher	47

After the interviews, the authors translated some of the excerpts into English to facilitate the analysis section that follows, as this allowed for broader access to the insights and experiences shared by the participants. When translating the answers, the authors ensured they did not lose the original meaning and context of the participants' answers.

The interview guide consisted of open-ended questions that covered key themes, including perceived benefits, challenges, ethical considerations, concerns, and the influence of robot journalism on journalistic roles. The guide was adapted from previous studies (e.g., Fidler, 1997; Hassouni and Mellor, 2024; Reese, 2018) and pilot-tested to ensure relevance and clarity. Each interview session lasted between 30 and 40 min, was audio-recorded with the participant's consent, and was fully transcribed.

The study adopted Charmaz's (2014) data analysis approach, which involves collecting and analyzing qualitative data to uncover key themes and their interrelationships. Three levels of coding were conducted: open, focused, and axial. In the open coding stage, data were examined line by line, word by word, and incident by incident to generate initial codes. Focused coding, then refined and clustered these initial codes into more meaningful and analytically significant categories. Finally, axial coding explored the connections between categories and subcategories, integrating them into a coherent framework that revealed how different concepts interacted within the broader research context.

Several measures were taken to ensure the study's trustworthiness. The interview guide was carefully developed based on existing literature and expert feedback to enhance validity, and pilot interviews were conducted. Member checking was performed with selected participants to review the preliminary findings. Reliability was supported through consistent interview procedures and a detailed audit trail documenting decisions made during data collection and analysis.

5 Findings

This study examined the perspectives of Egyptian journalists on robot journalism. Several distinct themes emerged from the interviews, which are discussed below.

5.1 Mixed feelings: hope and worry in Egyptian newsrooms

The study revealed that many journalists view the rise of AI as an inevitable disruption. This sentiment was a peculiar blend of curiosity and dread. An editor (P01) expressed the overwhelming urgency, saying:

> "*The digital transformation wave is not coming; it has already hit us. Not accepting AI is to accept obsolescence. Our regional competitors, or even local digital-native platforms, are using them to generate content at a pace and scale that we cannot with our traditional newsrooms. It is not whether we are adopting it, but how we are adapting our journalistic principles to this new reality.*"

Consistent with this view, another journalist (P02) also highlighted the tension between technological adoption and the preservation of local identity:

> *"When did we start hearing about these robot journalists? Well, of course, it sounds impressive in theory. But are Egyptian newsrooms actually ready? And what happens to our stories, our distinctly Egyptian perspectives, when algorithms start writing them?"*

From the above, P01 and P02 highlight the tension between the need to utilize AI due to competitive factors and the fear of losing an Egyptian voice in journalism. Both journalists acknowledge that technological change is inevitable, yet they doubt the industry's preparedness and the cultural connotations of algorithmic content production. This highlights the need to evolve journalistic values to a new technological reality without losing narrative authenticity.

Further, while journalists were aware of the pressures to adopt AI, their understanding of its practical implications was also evident. This is reflected in comments by a media analyst (P04) and a broadcast manager (P06, P10).

> *"It is a sense of nervousness, especially among middle-career professionals. The use of AI by management is characterized as 'doing more with less,' which translates to consolidation fears. What could be better than having one journalist with an AI package and doing all the work of a translator, transcriber, and junior reporter? There is a danger of producing a generation of generalists who do not have the expertise that is so specialized that it makes good journalism."*

> *"There's plenty of hype, but do we actually understand what these systems can and can't do? Their limitations? Their ethical boundaries? We need practical knowledge, not just buzzwords."*

Both respondents express concern about the practical and ethical aspects of AI use. The first one, P04, points at the fear of job consolidation and de-skilling of the profession, whereas P06 and P10 are concerned with practical knowledge and ethical principles. Although both accept the hype of AI, P04 is more concerned about the economic and professional effects, whereas P06 and P10 are more concerned with the lack of practical understanding and ethical preparedness.

Several respondents indicated they were aware of the professional anxieties and held a more nuanced, evolutionary perspective. For example, a journalist (P03) hinted that:

> *"Look, I recall when we stopped using typewriters and started using computers. People panicked then, too. Our newsroom has transformed so many times—from the noisy traditional machines to today's digital systems. AI is just the next chapter. Print won't die; it'll change form."*

Another journalist (P05) shared similar views:

> *"I am conflicted, to be candid. On one hand, imagine never having to write another boring stock market update! That would free me to work on the investigative pieces I actually care about. But what should happen to the tool should it become so fine that it does not require me at all?"*

Another journalist and media researcher (P07) shared other concerns:

> "*The AI technology we adopt is not neutral; it has been programmed to reflect the values, prejudices, and business interests of its Western creators. What we need to find out is how these imported tools are redefining workflows and the news epistemology through critical interrogation.*"

The relationship between journalists and technology is ambiguous and dynamic. P03 introduces AI as the logical continuation of a long history of media transformation, whereas P05 is less optimistic, considering both the opportunity to avoid the tedious and repetitive nature of everyday chores and the possibility of being replaced by it. They also point to journalists' internal struggle between the need for professional fulfillment and the fear of losing their jobs to the tools expected to help them advance their careers.

5.2 Potential opportunities for Egyptian media

Some respondents, such as a correspondent (P09) and a reporter (P08), also disclosed that journalists had positive feelings toward AI,

particularly its ability to make things more efficient and help eliminate tedious tasks.

> *"Election night is a nightmare. We are frantically updating numbers, trying to be accurate, but also first. Could AI handle that data processing while we focus on analysis? That would be incredible."*
>
> *"And how many hours do I spend transcribing interviews? Organizing data? Writing up basic facts? That is not journalism, that's clerical work. If robots do that part, I would be able to devote more time to making powerful people accountable."*

The journalists (P12) and (P15) shared similar opportunities that AI saves for journalists:

> *"AI can become a powerful ally in investigative journalism. Data scraping and data-analysis tools enable us to identify trends in data about the way people spend their money or environmental statistics that would require a single journalist months to reveal. Furthermore, automated transcription services are a godsend for long-form interviews, especially those conducted in Egyptian dialects that often pose challenges for standard software. It frees us from tedious tasks to focus on analysis and narrative construction."*
>
> *"The opportunity lies in developing a new generation of 'computational journalists' fluent in data literacy, algorithmic auditing, and ethical AI deployment. This is not about replacing critical thinking but augmenting it. We have the chance to benefit from models and train journalists who can use AI to conduct more powerful analyses of public data, thereby strengthening accountability."*

The topics shown by journalists are related to their work efficiency, where AI can process data (P09, P12) and automate clerical activities (P08, P15). They collectively highlight the problem of how AI may liberate journalists to do more critical tasks, including analysis and investigative journalism.

5.3 The challenges facing robot journalism in Egypt

Some respondents, such as a journalist (P14) and an editor (P16), expressed concerns about AI, ranging from job security to ethical and cultural issues.

> *"Let us be honest, if a machine can write stories and select photos, what happens to us? I have spent my life learning this craft. What am I supposed to do if an algorithm can do it cheaper?"*
>
> *"Egypt is not America or Europe. We have different cultural sensitivities, different political realities. An algorithm trained on Western data will not understand our context. Who bears responsibility in cases where AI creates something dangerous or not suitable to be shown to the Egyptian audience?"*
>
> *"This was also related to the nature of the journalistic practice, when a reporter argues, "Facts alone do not make good journalism, but the ability to dig, to ask the right questions, to build trust with the source and the reader. Can a machine really do that? Can it capture what makes a story meaningful to Egyptians specifically?"*

This concern also extended to the fundamental nature of journalistic practice itself. A reporter articulated this perspective, stating:

> "*It was not facts that made good journalism, but the ability to dig, to ask the right questions, to build trust with the source and the reader.*"

Practical obstacles further compounded the challenges to AI adoption. A video journalist (P18) highlighted the significant lack of resources, observing:

> "*Have you seen most Egyptian newsrooms? We are just managing to maintain our existing systems. Where would we get money for AI? Who would train our staff?*"

A notable regulatory vacuum exacerbated this infrastructural deficit. A journalist (P20) issued a warning regarding this, stating:

> *"No regulation frameworks on all this. There are no copyright policies on AI-created content, nor are there any responsibility policies. In the absence of those guardrails, the enactment of these systems might cause havoc."*

Ultimately, the findings revealed that Egyptian journalists were not simply rejecting technological change outright. Instead, they advocated for a sensitive and context-aware approach. As one editor (P19) concluded:

> *"The most interesting thing, as one of the editors concluded, was that these journalists believed that they had good reasons to be concerned; they were not just opposing technological change. They wanted a considerate execution that does not violate the values of journalism and Egypt in their particular circumstances. Technology should serve journalism's purpose, not redefine it. The question isn't whether we can use these tools, but how we use them to serve Egyptian audiences better while preserving what makes our journalism meaningful."*

Most journalists are concerned about the powerful impact of AI on journalism. They highlight struggles with job security and the cultural and ethical implications of using AI trained on Western data. They underscore how AI creates economic, ethical, and cultural challenges for journalists in Egypt. This perspective emphasizes the need for a balanced approach, in which technology enhances rather than diminishes the core principles of journalism in the Egyptian context.

6 Discussion

The findings show that the emergence of robot journalism is perceived as a complex of ambivalent feelings, encompassing both hope and anxiety, among Egyptian journalists. This aligns with Noain

Sánchez's (2022) and Moran and Shaikh's (2022) findings, who found that AI increases journalists' resistance and fear, necessitating ethical adjustments and shifts in media companies' practice. Some view Automation as a natural evolution, not a far-off futuristic vision. This perspective is supported by Fidler's Mediamorphosis Theory (Fidler, 1997; Talabi et al., 2024), which posits that new media evolve gradually from the metamorphosis of older media rather than independently. The words of participants suggest that journalists do not view AI as a superfluous addition to the practice, but rather as a disruptive phenomenon that has already begun to transform the practice. This reflects global trends in other media systems; however, the Egyptian context introduces dimensions of cultural, institutional, and economic particularity.

This study gives concrete shape to the "moderate solution" sought by Egyptian journalists, defining it as a hybrid, context-sensitive human-AI model that balances efficiency gains with the preservation of journalistic values. In practice, moderation delegates clearly bounded, labor-intensive tasks, such as data processing, transcription, verification, and routine updates, to robot journalism systems, while reserving editorial judgment, ethical decision-making, investigative inquiry, and cultural gatekeeping for human journalists. Robot journalism functions as a collaborator rather than a replacement, ensuring human-centered accountability through editorial oversight. In the Egyptian context, this approach requires filtering imported robot journalism technologies through local newsroom practices to preserve cultural relevance, professional legitimacy, and public trust, aligning with Fidler's Mediamorphosis Theory of gradual coevolution.

The relationship described by the professionals interviewed was primarily ambivalent. They acknowledged that it could simplify the newsroom's workflow, but they were also concerned about what would be lost. It was a common idea, especially among journalists and academics.

Nonetheless, journalists found some concrete opportunities that automation would offer Egyptian newsrooms. Speed, data processing, and redirecting human attention to more interpretive and investigative work were the most mentioned pros. This finding is consistent with research by Noain Sánchez (2022), who found that AI enhances journalistic efficiency by automating repetitive and low-quality tasks, thereby allowing journalists to focus on in-depth reporting. Furthermore, this aligns with Ali and Hassoun (2019) and Schiffrin (2024), whose research indicates that AI is used in newsrooms as a reporting tool, particularly for handling large volumes of material and conducting extensive data analysis. The value of AI-assisted tools was not realized in the services they offer to remove human judgment, but in their ability to ease the lives of journalists by automating clerical tasks such as transcription and data entry. The participants emphasized that automation could enhance journalism if implemented strategically, enabling reporters to devote more time to verification, analysis, and storytelling.

With these opportunities, ethical issues became a popular theme. Participants also inquired about who should be held accountable when an algorithm produces biased or culturally insensitive information. This concern directly reflects the challenges identified by Ali and Hassoun (2019) and Cools and Diakopoulos (2024), who highlighted accountability and algorithmic transparency as prominent challenges requiring scrutiny. They further stressed the danger of decontextualization, especially when technologies are taught non-local data. This finding provides evidence for the research gap noted by Hassouni and Mellor (2024) and Arafat and Porlezza (2023), who argued that insufficient attention has been paid to different cultural contexts and the cultural relevance of the findings, especially within non-Western contexts. Cultural specificity in generating automated news is invaluable due to the fear that an imported system will distort Egyptian realities. The most long-term anxiety was job insecurity. This anxiety is empirically supported by the work of Kim and Kim (2017) and Moran and Shaikh (2022), who found that reducing the number of human journalists is a likely employment strategy and that media corporations minimize labor costs through rationalization.

7 Conclusion

This study elucidates the complex and multifaceted perspectives of Egyptian journalists on integrating robot journalism into newsroom operations. The findings underscore a prevailing sentiment that, despite the numerous opportunities offered by AI to improve efficiency, data processing, and investigative reporting, these are accompanied by many concerns associated with ethical responsibilities, employment, and cultural appropriateness. Egyptian journalists propose a wise and context-dependent use of AI, emphasizing the preservation of professional judgment, journalism, and the trust that the Egyptian media evoke in their specific socio-cultural environment. This study emphasizes the importance of developing AI solutions and regulatory mechanisms that align with high technological standards and cultural and ethical values, enabling technological innovation to reinforce, rather than undermine, the core values of journalism in the region. These insights carry significant practical recommendations for newsroom leaders, educators, and policymakers. In Egypt, journalism operates with limited institutional and financial support. Instead of rushing to adopt expensive, ready-made AI systems that often overlook the subtleties of Arabic and the Egyptian cultural context, news organizations should implement these technologies in a measured and deliberate manner. Priority should be given to AI applications that reinforce human judgment, such as tools for routine data handling or transcription, freeing journalists to focus on the essential work of their profession: building context, and exercising ethical responsibility Furthermore, journalism programs should embed AI literacy and ethics within their curricula to prepare future journalists not only to use emerging AI tools but also to question their effects and limits within Egypt's media landscape.

Although this research provides some valuable insights into the perspective of Egyptian journalists on robot journalism, it also has certain limitations. First, its qualitative design, which is based on an in-depth interview with a particular group of Egyptian journalists, limits the ability to generalize the results to wider populations or other geographical locations. The limitations can be overcome in future research using quantitative research methods to measure the prevalence of these perspectives among a bigger and more diverse journalistic population. Additionally, comparative analyses of AI implementation in newsrooms across diverse cultural and economic contexts would provide a more insightful understanding of context-specific issues and opportunities. The subsequent research on the development of localized AI solutions, which are culturally sensitive and create specific regulatory frameworks for AI in journalism, is also justified.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving humans were approved by The Committee of Scientific Research Ethics and Intellectual Property Rights at the Faculty of Specific Education, Minia University, authorized the study instrument on August 15, 2024. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

AO: Conceptualization, Data curation, Formal analysis, Methodology, Project administration, Resources, Software, Writing – original draft, Writing – review & editing. MA: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Resources, Writing – original draft, Writing – review & editing. SD: Conceptualization, Data curation, Methodology, Resources, Writing – review & editing. AZ: Conceptualization, Funding acquisition, Investigation, Methodology, Resources, Supervision, Validation, Writing – original draft. SK: Conceptualization, Data curation, Funding acquisition, Resources, Writing – original draft. HA-D: Conceptualization, Formal analysis, Investigation, Methodology, Resources, Writing – original draft.

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The author(s) declared that Generative AI was not used in the creation of this manuscript.

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