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ARTICLE

The Shifting Communication Ecology of Four Arab Countries and Its Impact on Journalistic Practices during the COVID–19 Pandemic

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This qualitative study explores the transformations and constraints that journalists from four post-Arab Spring countries – Egypt, Tunisia, Syria, and Bahrain – faced during the COVID–19 pandemic and the impact that had on their journalistic practice. Through in-depth interviews, we investigated the pandemic journalistic practice of 20 journalists who represent different professional affiliations, geographic areas, and demographic profiles in those nations. Using the communication ecology model, which includes interpersonal, organisational, and mediated communication resources, we examined the internal and external factors influencing their journalistic practice: externally, we analysed the political, economic, legal, and infrastructural factors that impacted the nature of the communication ecology; internally, we explored the routines of media organisations and the individual demographic variables of journalists – age, generation, and employment status – and their impact on journalistic practice in those countries.

Keywords: journalism, journalistic practices, Arab world, Arab journalists, Covid–19, pandemic, communication ecology

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Introduction

This qualitative study examines the challenges facing journalists during the Covid–19 health crisis in four post-Arab Spring countries – Egypt, Tunisia, Syria, and Bahrain – and the way these were shaped by evolving political and mediated landscapes. The analysis centres on the journalists' perceptions of their professional roles in times of crisis (Arafat & Porlezza, 2023) and their accounts of their lived experience.

Drawing on the communication ecology model or the COVID–19 communication ecology, which includes interpersonal, organisational, and mediated communication resources (Perreault & Perreault, 2021; Houston et al., 2021), we analyse the interrelated internal and external factors influencing journalistic practice during the pandemic.

Based on in-depth interviews with 20 journalists representing diverse affiliations, regions, and demographic profiles, we identify both shared and context-specific features of pandemic reporting. We examine the manner in which struggles over mediated narratives surrounding COVID–19 (Khamis, 2020) unfolded differently across these countries, shaped by external conditions such as degrees of governmental authoritarianism (Lynch, 2016), mechanisms of media control ranging from censorship to sponsorship, technological capacity, and broader economic, legal, and infrastructural environments.

Internally, we explore newsroom routines and demographic variables – including generational and gender differences, professional affiliations, and individual trajectories – and how these intersected with crisis reporting (El-Ibiary et al., 2024). In doing so, we analyse how distinct communication ecologies structured pandemic journalism and consider the journalists' reflections on the longer-term implications for professional practice.

Implications of the COVID–19 pandemic for international journalism

The COVID–19 pandemic posed significant challenges to international journalism, including threats to media freedom, journalists' safety, and independent reporting. Under emergency measures, many governments introduced digital surveillance mechanisms, shut down websites, and restricted both freedom of expression and access to information, ostensibly to protect public safety (Khamis, 2020).

Ninety countries have declared a state of emergency with exceptional legislative restrictions on rights and freedoms (Arab Trade Union Confederation, 2020). Globally, more than 220 measures were brought in to restrict freedom of expression, assembly, and access to information, raising concerns about the risk that temporary emergency powers could become permanent (Price & Antonova, 2024).

Research shows that crises influence journalistic routines in a variety of ways, with some studies suggesting that health crises can lead to sensationalism and distortion of scientific information, while others indicate that journalists tend to rely heavily on public health authorities to inform the public (Klemm et al., 2019; Briggs & Hallin, 2016). Non-Western journalism cultures were found to "support official policies and convey a positive image of political and business leadership" (Obijiofor and Hanusch, 2011, p. 50), shaping the interactions between journalists and political sources (Fisher, 2018).

A study surveying over 2,000 news users each in Germany, Spain, and the United Kingdom revealed a consistent gap: high recognition of the societal relevance of journalism but lower satisfaction with its performance, particularly in watchdog (holding power to account) and analytical functions compared to rapid information dissemination. Germany shows the strongest overall support, aligning with its democratic-corporatist media system, while Spain lags behind, fitting its polarised-pluralist model; older and highly educated users perceive greater relevance across countries (Serrano-Puche et al., 2024).

In authoritarian contexts, however, where the media is closely controlled and journalists risk censorship or prosecution for challenging official narratives, these dynamics become more pronounced. The Arab region is no exception.

Challenges in reporting health crises in authoritarian countries

Health emergencies are defined as "a rapid, often unthinkable, development of a severe hazard, creating a sense of urgency and a need for an instant reaction; nevertheless, uncertainty and high complexity, and scientific information might not be available yet" (Klemm et al., 2019, p. 1226). During the COVID–19 pandemic, journalists were required to provide accurate and reliable information amid uncertainty while maintaining personal safety (Nielsen et al., 2020).

This crisis altered newsroom routines, accelerating reliance on digital technologies often without adequate training (Finneman & Thomas, 2021; Abdulmajeed & El-Ibiary, 2023). While digital adaptation expanded reporting capacity, heavy dependence on expert opinion without sufficient verification increased the risk of disseminating inaccurate information (Bernadas & Ilagan, 2020, p. 135).

In authoritarian settings, journalists faced additional constraints, including limited access to official information and diminished press freedom (Abdulmajeed & El-Ibiary, 2023, El-Ibiary et al., 2024). Governments employed forms of *informational autocracy,* defined as "an approach to authoritarian governance based primarily on the manipulation of information" (Cosentino, 2021, p. 217). In Egypt, Tunisia, Libya, and Jordan, state actors interfered in the communication of scientific information (Alashry, 2021), while access to pandemic data was particularly restricted in Egypt (Khamis & El-Ibiary, 2022).

Media shutdowns and suspensions compounded these challenges (McIntosh, 2020; Macleod, 2021), affecting Egypt, Kenya, Mexico, and the Philippines, among others (Bernadas & Ilagan, 2020). Crackdowns intensified in Egypt and Iraq, where international media offices were closed and foreign journalists were deported because of unfavourable coverage (Arab Trade Union Confederation, 2020). Egyptian journalists who expressed personal views on social media also faced serious risks (Alashry, 2021; El-Ibiary & Calfano, 2022).

Health crisis reporting also generated tensions around professional roles with journalists experiencing "role conflicts between remaining independent and feeling responsible for supporting public interest" (Klemm, et al., 2019, p. 1236; Arafat & Porlezza, 2023). Reporting often shifted from a watchdog function toward a more cooperative, public mobilisation role. Professional background further shaped performance: general reporters tended to adopt a neutral stance and rely heavily on official guidance (Klemm et al., 2019).

Case study: Contextual background to the four Arab countries

A brief contextual overview of the four countries under study – Egypt, Tunisia, Syria, and Bahrain – is essential to situate the findings within their political and media systems. All four are Arab, predominantly Muslim countries that experienced the 2011 Arab Spring uprisings, albeit with divergent trajectories. Egypt and Tunisia witnessed regime change, while Syria and Bahrain did not. These political outcomes significantly shaped their respective media environments. Tunisia initially achieved a relatively peaceful democratic transition, enjoying a broader margin of media freedom. However, democratic setbacks from 2021 – when the president dissolved parliament and consolidated executive power – narrowed press freedoms. Egypt's democratic transition was short-lived. The removal of President Mohamed Morsi in 2013 through a military takeover resulted in political polarisation and increased restrictions on political and media freedoms (Khamis, 2020; Eltantawy & Wiest, 2011). In Syria, the uprising escalated into protracted conflict between Al-Assad's supporters and opponents, producing civil war, humanitarian crisis, and a severely constrained media environment (Khamis et al., 2013). Bahrain's uprising, often described as the 'forgotten revolution', was swiftly suppressed following protests by a Shiite majority against the Sunni ruling minority, further tightening political and media restrictions (Alwadi & Khamis, 2018). Although the trajectories differ, all four countries experienced democratic backsliding or authoritarian consolidation, resulting in constrained media systems that shaped pandemic reporting conditions.

The COVID–19 communication ecology

To understand the communication processes an examination of the environment in which they occur is required. As Perreault and Perreault (2021) noted:

> "When sharing information about crisis and disaster, journalists exist as a part of an ecology in which journalism influences, and is influenced by, the environment. To understand communication ecologies, researchers often isolate certain practices and examine how they connect to other processes and data. [...] The volatility of social media, fluctuation of information, and the desire to verify information about risks, health, and crisis provide a locus for dialogue about communication."

This makes communication ecologies a useful framework for analysing complex interactions across old and new media systems.

Pandemic disruption in the Arab region accelerated journalists' reliance on social media, with restricted mobility and access to sources transforming it into a core tool for news production. Rather than bringing journalism to a halt, this shift led to adaptive and intensified practices, and expanded newsgathering, enabling the inclusion of more diverse public perspectives (Elareshi et al., 2025a). Journalists used these platforms to follow rapidly evolving topics such as health prevention and social issues, but faced two central challenges: the pervasive spread of misinformation, which complicated verification, and increasing restrictions on media freedom, as governments intensified censorship and monitoring.

Overall, while social media enhanced journalistic efficiency during the crisis, it also exposed journalists to significant professional and structural risk (Elareshi et al., 2025b).

During the COVID–19 pandemic, journalism operated as a *microenvironment* within the COVID–19 communication ecology, in which news production depended both on the professional capacities of journalists and "the overall composition of the media environment". Crisis reporting reflected "the overlapping of citizens, organizations, and journalists through social media", as media organisations disseminated information online and audiences redistributed it (Perreault & Perreault, 2021).

COVID–19 did not merely introduce new reporting challenges; it intensified pre-existing ones, creating conditions for norms and practices to evolve while journalists struggled to uphold commitments to accuracy, ethics, and freedom of expression (Lewis, 2020; Perreault & Perreault, 2021). News coverage during crises is shaped by journalistic routines embedded within each country's communication ecology, which include legal frameworks, media policies, organisational structures, and professional responses to constraints. These routines vary across national contexts (Ross, 2017), making global crises analytically useful in revealing cross-national similarities and differences. As emphasised here:

"News organizations are normally part of a communication ecology, and so during the COVID–19 pandemic journalists and news organizations can be understood to be working in a COVID–19 communication ecology, where journalists serve as a resource for others, while also balancing the personal challenges of the crisis" (Perreault & Perreault, 2021).

This framework also requires engagement with health journalism as a field concerned with disseminating medical and health information (Gearhart et al., 2018; Tanner et al., 2015; Viswanath et al., 2008). When health information flows are shaped by political, economic, cultural, and security constraints, reporting may become distorted, potentially endangering public health and influencing harmful policy outcomes (Paul et al., 2021). These dynamics are central to understanding the COVID–19 communication ecology examined in this study.

The Arab media communication ecology

A defining feature of authoritarian Arab media ecologies is the use of direct and indirect control mechanisms to regulate media institutions and practices. These include state ownership of major outlets, the appointment of chief editors and executives, financial sponsorship of pro-government media, and repression of journalists who challenge official boundaries (Rugh, 2007; Sakr, 2013; Seib, 2007).

In the aftermath of the post Arab Spring democratic setbacks, this ecology has been increasingly characterised by digital authoritarianism, reinforcing a broader political authoritarianism (Dragu & Lupu, 2021; Khamis, 2020; Jones, 2022). Here, the use of digital technologies and internet governance is to control information flows and consolidate state power, which is an increasingly central feature of media systems in many Arab countries.

These dynamics intensified during COVID–19, as governments imposed strict controls on pandemic coverage and restricted journalists to official sources, thus limiting independent verification and access to information (Khamis, 2020). Punitive legal measures,

including vaguely worded *cybercrime laws* criminalising the spread of 'misinformation' or 'disinformation', further expanded state control during the crisis (Khamis, 2020).

Research questions

To analyse journalistic practices amid the COVID–19 communication ecology of the four countries under study, we attempt to answer the following questions:

RQ1*:* What impact did the external influences – namely the political, legal, economic and infrastructural factors – have on journalistic practices during the COVID–19 pandemic?
RQ2*:* What impact did the internal influences – namely media organisation routines and individual journalists' demographics and experiences – have on journalistic practices during the COVID–19 pandemic?

Research methods

To provide empirical data on the rapidly evolving Arab media landscape (Richter & Kozman, 2021), we conducted 20 semi-structured in-depth interviews to explore the COVID–19 communication ecology of the region. This method is particularly valuable in practice-oriented fields like journalism, allowing for in-depth analysis and contextualisation of findings (Richter & Kozman, 2021).

Conducted in 2020–2021, the interviews were conversational, enabling participants to elaborate on any issues they found important. Such an approach is useful for investigating complex behaviours, opinions, and experiences (Longhurst, 2009). Journalists were asked about media ecology in their countries, including pre- and post-2011 press freedom, the impact of COVID–19 on press freedom, pandemic-related challenges, generational, socioeconomic and gender differences in reporting, and anticipated post-pandemic journalistic shifts.

Not all participants were health correspondents or specialists, which reflects the structural reality of many Arab media systems, where health journalism is rarely institutionalised and expertise is limited (Gearhart et al., 2018; Tanner et al., 2015). In countries like Egypt, Syria, Bahrain, and Tunisia, pandemic coverage was often handled by general reporters within constrained institutions. This limitation highlights broader regional structural conditions, where political, economic, and organisational pressures shape journalistic practice. Thus, the findings capture the journalists' lived professional realities rather than specialised health reporting.

Sampling

Journalists covering pandemic-related stories were identified via snowball sampling, which facilitated trust and rapport. Selection considered political orientation, professional affiliation (government vs. private, mainstream vs. digital media), and regional diversity, including

Syria's three regions: Kurdistan, Idlib, and Damascus. Gender balance was achieved with 11 male and 9 female journalists.

Interviewees were anonymised using country-based codes (e.g. S1 for Syria #1). Due to pandemic and geographic constraints, interviews were conducted via Zoom or WhatsApp. Table 1 below summarises the details of the 20 interviewees.

Table 1:
Sample details

#	Name	Affiliation/ Media Organisation	Country/ Region	Gender	Interview Date	Interview Medium
1	S1	Director of ASO News Agency	Syria – Kurdistan	Male	3 October 2020	Zoom
2	S2	Independent Journalist	Syria – Idlib	Female	20 October 2020	Zoom
3	S3	Journalist with the German News Agency (DPA) in Syria	Syria – Damascus	Male	31 October 2020	Zoom / WhatsApp
4	S4	Freelance Journalist	Syria	Male	14 April 2021	Zoom
5	T1	Independent Investigative Journalist	Tunisia	Female	1 October 2020	Zoom
6	T2	Journalist and Researcher	Tunisia	Male	24 October 2020	Zoom
7	T3	Chief Editor of Shakshouka Times	Tunisia	Male	30 March 2021	Zoom
8	E1	Journalist and Media Trainer	Egypt	Female	17 June 2020	Zoom
9	E2	Independent Journalist	Egypt	Female	1 July 2020	WhatsApp
10	E3	Freelance Journalist	Egypt	Female	5 July 2020	Zoom
11	E4	Deputy Editor-in-Chief of *Al Ahram* newspaper	Egypt	Female	29 June 2020	Zoom
12	E5	Chief Editor and founder of *Daarb*	Egypt	Male	8 April 2021	Zoom
13	E6	Independent Journalist and Digital Media Trainer	Egypt	Male	6 April 2021	Zoom
14	E7	Journalist and Trainer	Egypt	Male	29 March 2021	Zoom
15	E8	Journalist, Eltareek Newspaper	Egypt	Male	9 April 2021	Zoom
16	E9	Senior Editor, *Forbes* Middle East Magazine	Egypt	Male	19 April 2021	Zoom
17	B1	Head of Local Affairs, Al Bilad Newspaper	Bahrain	Male	30 April 2021	Zoom
18	B2	Journalist and TV Presenter	Bahrain	Female	14 October 2020	Zoom
19	B3	Freelance Journalist	Bahrain	Female	1 & 5 October 2020	Zoom
20	B4	Journalist and Researcher	Bahrain	Female	25 October 2020	Zoom

Source: Compiled by the authors.

Findings and analysis related to RQ1

RQ1: External influences: political, legal, economic, and infrastructural constraints

External influences are examined through three interrelated sub-themes that constitute the structural layer of the COVID–19 communication ecology: 1. political–legal constraints; 2. economic precarity and ownership patterns; and 3. infrastructural inequalities and the *digital divide*.

The *Arab COVID–19 communication ecology* is characterised by capitalising on the pandemic to intensify already existing measures of media control, reflecting the nature of the media environment in which communication takes place (Perreault & Perreault, 2021). Arab governments struggled to frame the COVID–19 narrative through their officially controlled media to serve their interests and agendas, using a multitude of political, legal, and economic tools. In analysing the structure and dynamics of the Arab communication ecology during the pandemic, we address the relationship of media and politics, the legal aspects, and the technological, infrastructural, and economic factors of the period.

Political–legal constraints and informational control

This sub-theme examines how state authority, legal frameworks, and regulatory interventions structured the boundaries of pandemic reporting. Within the COVID–19 communication ecology, political and legal mechanisms operated as gatekeeping forces in defining permissible narratives, restricting access to information, and shaping journalists' risk calculations.

The politically and legally restrictive Arab media ecology intensified during the pandemic. In Egypt and other Arab countries, issuing new laws to smother media freedom became the new normal during the pandemic (Alashry, 2022). According to Egyptian journalist E4, "The Egyptian government imposed a total blackout on the coverage of controversial topics, including the spread of the pandemic". According to the Veteran Egyptian journalist E2:

> "The Supreme Council for Media Regulation warned journalists against quoting any unofficial sources when reporting on the pandemic. I had to avoid including my name on any pandemic-related stories to avoid governmental retaliation. [...] The Egyptian government capitalized on the pandemic to tighten its grip on the media and arrest journalists, using vague charges, such as spreading fake news, destabilizing society, and threatening national interests."

The Egyptian media is predominantly owned or controlled by the government, and as Egyptian journalist E7 describes: "This information blackout on the part of the regime contributed to the spread of misinformation around COVID–19, in the absence of factual and transparent reporting." This reflects the nature of media–government relationships in authoritarian countries (Abdulmajeed & El-Ibiary, 2023; Khamis & El-Ibiary, 2022).

Other interviewees made similar remarks, highlighting the many constraints Arab journalists suffered, such as limited press freedom, the issuance of new cybercrime laws which

make it easy to imprison journalists, the lack of access to accurate data about the pandemic, and the exploitation of advanced surveillance and tracing applications by authoritarian regimes to track opponents, activists, and truth-seeking journalists (Khamis, 2020). Laws that criminalise journalistic practices through extreme punitive measures carry the risk of being deliberately vague in order to serve the interests of the government (El-Ibiary, 2020; Alashry, 2022).

The Bahraini journalists concurred, saying that from inside Bahrain, expressing opinions on political issues online is not safe since the establishment of a 'Cybercrimes Department' in 2013, which can arrest people, ban them from travel, or file lawsuits against them under the cybercrime laws, which stifle freedom of expression and press freedom and restrict the journalists' ability to report on sensitive topics, such as COVID–19. Bahraini journalist B1 said:

> "Under the current 'Cybercrimes Laws' there are limits to what journalists can share online. If you tweet something that the regime does not like, the electronic army can draw the Ministry of Interior's attention to your tweet, and they can start acting against you immediately. Some journalists and activists deleted their tweets about COVID–19 and other sensitive issues out of fear of governmental retaliation."

In Egypt too, according to E5, "COVID–19 is linked to a crackdown wave, which includes imprisoning doctors who wrote about COVID–19 cases and the journalists writing about the doctors who were infected and other COVID–19 related issues". Punishments for spreading so-called 'fake news' (any news contradicting the official narrative) ranged from imposing fines on journalists and media organisations to withdrawing licenses or arrests. One infamous case was that Egyptian journalist Mohamed Mounir, who challenged the narrative of the Egyptian government on COVID–19, lost his freedom following arrest and, ultimately, lost his life after contracting the virus in jail, dying shortly after being released (Khamis, 2020). The crackdown on journalists who covered the pandemic extended to foreign correspondents and international media outlets in Egypt, too. The infamous case of the correspondent of *The Guardian,* Ruth Michaelson, who had her license withdrawn and was then expelled from Egypt for citing COVID–19 figures which contradicted the official narrative, is one example (Al Jazeera, 2020).

Likewise, journalist B3 remarked that some international media offices were shut down and their journalists were prohibited from reporting inside Bahrain during the pandemic:

> "When the government approved the reopening of some of these media's offices, such as AP and AFP, they gave them a hard time accessing pandemic news and made it difficult for them to get pandemic-related interviews, favouring local pro-government media instead, as the tight margin of press freedom became even tighter."

The complexities of the Syrian political landscape, riven by sectarian strife and civil war, and stretching across opposition and state-controlled zones, are reflected in its media ecology and COVID–19 coverage patterns, with journalists in government-controlled areas echoing the official narrative and journalists in opposition areas challenging it, as per our interviewed Syrian journalists.

According to S1, the Syrian regime, which had been sharpening its digital tools since the 2011 uprising (Khamis et al., 2013), 'strove to control the information flow on the pandemic, by blocking, sabotaging, or hacking any outlet transmitting a different story which challenges the official narrative'. This surge in digital authoritarianism, (Dragu & Lupu, 2021) indicates how technological innovation is abused by authoritarian regimes to smother opposition. Even for state-controlled media, S3, a DPA correspondent, complained about the absence of media freedom:

> "Media freedom simply doesn't exist, making Syria a most dangerous place for journalists. Anyone expressing an oppositional opinion can be forcibly disappeared, fired, imprisoned, or killed [...] You have no choice but to echo the official narrative to protect your safety."

Likewise, press freedom in Bahrain was largely stifled during the COVID–19 pandemic. According to journalist B4: "Most non-governmental media outlets and newspapers were shut down, independent journalists were banned from working, and their licenses were revoked. These practices exacerbated amid COVID–19." Journalist B3 added: "Many opposition figures, including investigative journalists, are either in exile or in prison. The only avenue for reliable communication for those in exile is the internet."

Therefore, when domestic and international media coverage of the pandemic became strictly controlled by the Bahraini regime, some journalists in the diaspora relied on the internet to fill the knowledge gap. According to B2: "Bahraini journalists abroad try to play the role that journalists inside Bahrain cannot play, providing more accurate information on the pandemic situation in Bahrain". This illustrates how "the inability to seek representation through official media outlets inevitably increased the importance of digital spaces and social media" (Jones, 2013). This is especially true since the Bahraini government's attempts to politicise the COVID–19 moment in order to polish its public image were unsuccessful. As B4 explained:

> "There is a major public distrust in the government and its official COVID–19 narrative, as evident in the public's increased reliance on alternative sources of information, such as WhatsApp messages and Facebook groups, rather than official sources of information."

Of Tunisia – the only country in the group that has had until recently a relatively broad margin of press freedom – T1 pointed out that "Despite suffering from multiple challenges, the picture is not too gloomy. We still have a reasonable press freedom margin, and we can criticise the government and challenge the state narrative by publishing alternative coverage." Both T1 and T3 concurred that this relative margin of media freedom means that there could be some criticism of the government's handling of different issues, including the pandemic, without fear of regime retaliation, a luxury which is not enjoyed by journalists in the three other countries.

One pandemic-related incident illustrates this. In March 2020, when a Tunisian parliament member proposed a draft law to combat disinformation during the COVID–19 crisis by controlling the information on social media, there was an immediate backlash. It was perceived as a threat to free expression online, muzzling journalists, and limiting access to

necessary information. Only hours after the proposal had been made the MP withdraw it because of the broadly critical response from the public on social media (Khamis, 2020).

The discussion above illustrates the way in which COVID–19 added new issues for journalists, as well as complicating already existing ones (Lewis, 2020). These dynamics illustrate how political authority and legal instruments shape the boundaries of communication ecology, structuring what can be reported, by whom, and at what risk.

Economic precarity and media ownership

This sub-theme explores how pandemic-induced economic pressures intersected with existing ownership structures to influence journalistic autonomy. Financial instability, declining advertising revenues, and ownership consolidation functioned as structural constraints that reshaped newsroom priorities and professional independence.

The exigency created by the COVID–19 pandemic in authoritarian countries to shift immediately to working online has exposed multiple economic and infrastructural constraints that several Arab countries have had to face. This became a major component of the Arab COVID–19 communication ecology. For example, in Syria, the economic and infrastructural gap between different areas was stark. According to journalist S2, the Syrian government always focused on developing more urban cities, such as Damascus and Aleppo, while neglecting other areas, such as Idlib, thus intensifying extant infrastructural, economic, and social challenges, and impacting the performance of the media. "A major problem in Idlib is lawlessness. There is no effective government, which means that there are no laws to regulate all aspects of life, including the media", S2 explained. This became a double-edged sword for journalists as, paradoxically, according to journalist S4, while they were freer to report on the pandemic, they faced increasing danger from lawlessness. The various political, economic, and infrastructural constraints which journalists face when working in a restrictive media environment can widen the gap between their conception of their role and their perceived role enactment (Arafat & Porlezza, 2023).

The Egyptian media also suffered from economic hardships during the pandemic (Khamis & El-Ibiary, 2022). As E3 remarked, "Egyptian newspapers suffered a sharp decline in advertising revenue, salaries were reduced, and some newspapers closed down or had to downsize and lay off journalists during the pandemic". Tunisia faced similar pressures. Journalist T1 indicated that

> "309 journalists were laid off between 2019 and 2020, including 190 journalists who lost their jobs during the three months lockdown during COVID–19. Some media laid off 10, 15, or 20 journalists at once. Many of them, especially during the lockdown, were unable to search for a job, due to mobility restrictions, and many did not have licenses, which complicated their situation."

Newspapers in Tunisia were not financially prepared for the shift to digital. According to T1, newspapers shifted from print to online, and those that did not have an electronic version had to create one. T1 remarked:

> "Our newspaper went on for three months without a print version. Afterwards, the number of pages, just like the number of journalists, declined [...] In April and May 2020, newspapers asked for governmental aid. They were promised a fund to aid in digitalisation and journalists' salaries. TV and radio stations were promised a free three-month broadcasting license. These promises were not enough to save the media, and they always fulfilled."

T2 highlighted some efforts to control the media economically "through advertising, buying media shares, and involving businessmen in private media ownership. While private funding is much-needed, due to the pandemic-related dire economic conditions, it compromises the media's autonomy."

Media ownership under such dire economic conditions is key to predicting the future of the Arab communication ecology. E7 remarked that

> "the future of Arab journalism depends on the pattern of ownership. We must have independent, publicly funded media to produce high quality journalism. This is the best model to ensure Arab media's professionalism and independence. Right now, We only have state-owned media. Even so-called private media have ties to the regime. This pattern worsened amid the pandemic, threatening Arab media's credibility."

Economic precarity operated not merely as a financial constraint but as a regulatory mechanism, reinforcing dependency structures within the media ecology.

Infrastructural inequalities and the digital divide

This sub-theme examines disparities in electricity, internet access, and digital resources. These infrastructural conditions shaped the capacity of journalists to gather, verify, and disseminate information, highlighting how communication ecologies are materially embedded as well as politically structured. According to journalist S2, poor infrastructure and lawlessness in Idlib meant that:

> "Practicing journalism in Idlib endangers journalists, who may easily get injured or killed. If they face any difficult situation, they can't file a complaint, in the absence of any official agency that can protect them. [...] Journalists face the double risks of infection and personal harm, when covering pandemic news. Media freedom without any regulation or protection equals chaos."

S3 also remarked:

> "Although many media organisations shifted to working online amid the pandemic, one major obstacle is inadequate infrastructure. Electricity is cut off more than 20 hours a day in some areas. In most areas it is cut off at least 10 hours daily. Moreover, the internet is slow and expensive, especially for low income journalists who work in neglected areas."

Mobile technology, explains S3, can help journalists overcome some of these challenges:

> "It is easy to send a picture, news, or voice messages through smart phones. Ironically, although the internet connection is worse for journalists outside the capital, they can use satellite internet from neighbouring countries to facilitate their coverage, which is prohibited in government-controlled areas."

In other areas, such as northeast Syria, journalists lived a different reality. According to S1, "[j]ournalists relied on online communication to spread awareness about the pandemic, verify information, collect donations, and buy and distribute essential resources". According to S3, the three newspapers run by the government in Syria stopped printing, and all print media switched to an online format. S3 remarked:

> "All media were impacted, as field coverage decreased to a minimum, out of fear of COVID–19, and tens of journalists were infected or lost their lives, due to the pandemic. Most journalists worked from home, with the least possible staff and resources."

Infrastructural asymmetries reveal how communication ecologies are materially embedded, with access to technology shaping journalistic capacity.

Findings and analysis related to RQ2

RQ2: Internal influences: media organisation routines and journalist demographics

Internal influences are organised into three sub-themes: 1. organisational routines and professional norms; 2. trust, credibility, and misinformation dynamics; and 3. demographic stratifications, including gender, generation, and employment status. These dimensions represent the micro-level of communication ecology.

Organisational routines and professional norms

This sub-theme analyses how newsroom routines, editorial hierarchies, and professional norms mediate the translation of structural constraints into everyday journalistic practice. Organisational cultures shaped decisions regarding sourcing, safety, self-censorship, and crisis adaptation. Our findings indicate that Arab countries imposed repressive measures on journalism during the COVID–19 pandemic (Price & Antonova, 2024). The new political, legal, economic, and infrastructural constraints exacerbated the already existing professional challenges and impacted routines and journalistic practices in Arab media organisations during the pandemic (Lewis, 2020). Further restrictive measures were imposed by the regimes on professional health journalism, which, even amid a health crisis, have been perceived as unnecessary by the leadership of both government and media organisations. This confirms

the findings of Gearhart et al. (2018) that journalists prioritised health as an important issue for their audience, yet it was not prioritised by the leadership of media organisations. Syrian journalist S4 remarked:

> "I believe that the COVID–19 media coverage both reflected, and intensified, the challenges and chaos in our fragile media scene. Even opposition media are not free of corruption, and they have their own political agendas and challenges which limit their ability to conduct professional pandemic coverage."

Egyptian journalists also complained about being smothered by many challenges, including censorship, cybercrime laws, lack of professional guidance from media organisations, and a government-controlled media environment. This led many of them to practice *self-censorship* because of fear of government retaliation, rather than *self-regulation,* which would have reflected attempts to boost journalistic professionalism (Badr, 2022). Most interviewees lamented the prevalence of self-censorship in the COVID–19 communication ecology at the expense of self-regulation. Barriers to obtaining accurate health information also posed another challenge. T1 stated:

> "Blocking health information by the authorities and the spread of contradictory official statements made it difficult for journalists in Tunisia to gather credible information about the virus. Some sources provide contradictory, incomplete, or inaccurate information, since they are not specialised epidemiologists. Also, some Tunisian officials used the pandemic as an excuse to avoid media interviews."

Likewise, S4 remarked: "The Syrian regime does not provide accurate statistics about the virus. They deny the reality, even though it is widespread in Syria. The regime does not conduct any testing, nor does it invest in the health sector", and another issue is the lack of trust in either the regime or the journalists; according to Bahraini journalist B2:

> "Bahraini journalists have been spreading information and safety guidance about COVID–19, but they have not been effective, due to limited trust in Bahraini media today. This pushed journalists abroad to play a bigger role on social media to fill this gap. However, they also face limitations, since they cannot be fully aware of the pandemic's situation back home."

Organisational routines functioned as mediating mechanisms between structural constraints and individual journalistic practice.

Trust, credibility, and misinformation

This sub-theme examines how diminished institutional trust and restricted information access contributed to the circulation of misinformation within the communication ecology, weakened credibility, and amplified reliance on informal networks and social media

channels. The absence of credible health information created a knowledge vacuum, which was oftentimes filled by misinformation and disinformation. According to S4:

> "Misinformation and disinformation have been widespread in Syria during COVID–19. Once they go viral on social media, it becomes difficult to stop them. Only few Syrian media organisations covered the pandemic responsibly and shared accurate information about it."

The interviewed Syrian journalists saw other challenges in lawlessness in the opposition areas and authoritarianism in the government-controlled areas, alongside the many socioeconomic and infrastructural constraints that hinder professional health journalism.

Some interviewees expressed frustration about being unable to play a more effective role in spreading correct information during and about the pandemic, raising public awareness, and changing the public's attitudes and behaviour. This confirms the findings of Tanner et al. (2015) that health journalists perceive their responsibility as going beyond simply gathering and providing credible information to supporting health education and promoting health behaviour change. It is also consistent with the findings of Viswanath et al. (2008), that health journalists prioritise the accuracy, trustworthiness, and credibility of the information they share publicly.

Ironically, the relative increase in media freedom after the initial success of the revolution in Tunisia proved to be a double-edged sword when it granted journalists the opportunity to develop their skills, to cross the red lines, and to expose corruption, because it introduced chaos and a lack of media professionalism in the absence of any regulation. Tunisian journalist T3 remarked: "The media became more unprofessional and sensational, no in-depth reporting and no valid sources, except for a few professional media. With the dependence on political money, media freedom and professionalism were compromised."

Several interviewees complained about the working environment in their media organisations during the pandemic. "During COVID–19, only a few media organisations in Tunisia provided clear safety instructions to their employees or took the necessary measures to ensure a safe working environment" – Tunisian journalist T1 stated. Likewise, Egyptian journalists felt that their safety was overlooked by media organisations. Egyptian journalist E4 remarked:

> "There is a strong resistance to change in many media organisations, even during a pandemic. The semi-official Al Ahram newspaper, for example, allowed journalists to stay home for the first couple of weeks only, and then everyone was required to go back to work, although all the work could be done remotely and sent via email. There was no need to risk the health and safety of journalists during a pandemic."

Some interviewees believed that responsible journalism is often too costly in the Arab region. "Objectivity and professionalism cost a lot in Tunisia. When you try to be neutral or objective you don't get advertising. You have to take sides and be sensational" – remarked Tunisian journalist T3, adding that this situation intensified with all the economic challenges posed by the pandemic.

However, Bahraini journalist B1 argued that the quality of journalistic coverage depends on the media organisation itself stating that:

> "Some media organisations used COVID–19 as an excuse to further stifle the information flow, while others continued to provide accurate information and sound reporting. We cannot say that COVID–19 itself has been an obstacle to information flow. It depends on each organisation."

While the COVID–19 communication ecology posed many challenges for Arab journalists in the performance of their professional roles, it also ushered new opportunities, such as the reliance on online communication to provide a convenient, accessible, safe, and reliable working environment for many journalists, albeit not for everyone, due to the infrastructural constraints in some areas. S2 explained:

> "Syrian journalists from Idlib were not able to travel to attend international events without travel documents. This year, since many events were held online, journalists from different parts of Syria could participate in international events, gain international visibility, cover the Syrian crisis for international media, and cooperate with international organisations to alleviate the suffering from the pandemic."

Online training was also useful for journalists who were interested in acquiring accurate scientific information about the virus. Tunisian journalist T2 stated:

> "Many young journalists learned new techniques, professional skills, and useful knowledge, especially since the trainings were online and free of charge. They became health journalists, and they learned how to protect themselves and others from the virus and from misinformation."

The Egyptian journalist E1 echoed the same sentiment stating: "Many Egyptian journalists are utilising this unique moment to advance themselves professionally, through online training, exchanging useful knowledge, and learning new skills to improve their pandemic coverage."

However, some interviewees remarked that the reliance on digitalisation has its limitations. For example, it cannot replace real-life field reporting and there are many socioeconomic and infrastructural barriers to digital access. The erosion of trust reflects ecological instability, where weakened institutional credibility amplifies misinformation flows.

Demographic stratification within the communication ecology

Some demographic variables placed constraints on journalists' practices during the pandemic in the countries studied. These included gender, generation, and employment status. Some Egyptian women journalists said that being a woman increased the risk of losing their job in the midst of the pandemic, confirming that "Arab women journalists are the hardest to hire and the easiest to fire" (Melki & Mallat, 2016). Similarly to the Bahraini women interviewees, the Egyptian journalist E1 remarked:

> "When making decisions about laying off journalists during the pandemic, many Egyptian media organisations fired women journalists first, using lame excuses, such as that women have male supporters or that they cannot work long hours like their male colleagues."

This gender-based discrimination against Arab women journalists (Khamis & El-Ibiary, 2022), even worse during the pandemic, reflects the glass ceiling that hinders women's advancement in Arab journalism (Melki & Mallat, 2016; Wharton Kaye-Essien & Ismail, 2020) and confirms what Mellor (2019) describes as "women's (in)visibility in Arab media".

Interestingly, the women from Tunisia and Syria we interviewed did not mention similar gender-related disparities. Similarly to the Tunisian women journalists, Syrian journalist S2 mentioned that there is reasonable acceptance of women's journalistic work in the Kurdistan and Idlib regions. She stated: "There is no remarkable gender-based discrimination among journalists in these areas. Rather, corruption, economic hardships, and weak infrastructure have been impacting both men and women journalists equally during COVID–19."

Ironically, there were some positive impacts on Arab women journalists, such as the growing reliance on digitalisation, which increased their gendered digital capital (De Vuyst & Raeymaeckers, 2019). Women interviewees across the four countries expressed views similar to Egyptian journalist E2 who said:

> "Online communication saves time, money, and effort, which is especially helpful for women journalists. They can do most of their COVID–19 coverage from the safety of their homes, while avoiding infection and inconvenience. Limitations to home-based reporting include missing live coverage, but, during a pandemic, the pros outweigh the cons."

Other pandemic-related factors impacting journalists were age and contract type. According to Tunisian journalist T1, "[y]oung journalists, especially freelancers or those with temporary contracts, and those who are close to retirement were more likely to lose their jobs during the pandemic in Tunisia". Echoing this S2 said:

> "The pandemic severely impacted freelance journalists in Idlib financially. Many of them were not given any pandemic-related assignments by media organisations, and their careers were less secure. The impact of COVID–19 on journalists in Idlib depends on the nature of media organisation and the political, economic, and infrastructural constraints. There are journalists who work in media organisations which protect them, and there are freelancers who have no rights whatsoever."

Egyptian journalist E3 likewise remarked:

> "Half of the Egyptian journalists' syndicate's members are working on a freelance basis, they have no media organisation to protect them, and they have been exerting an enormous effort to produce good journalism during the pandemic. Yet, many of them got laid off, due to this crisis."

Some interviewees highlighted the impact of generational differences, since older journalists often act as gatekeepers by resisting any change to professional routines when deciding on

content selection and the best techniques to use during the pandemic (Khamis & El-Ibiary, 2022). "Unfortunately, many older journalists, unlike the younger generation, are not willing to use new digital tools which became vital amid the COVID–19 crisis", Egyptian journalist E4 explained.

Concluding remarks: Current challenges and future potential

The findings of this study unpacked the traits of journalism as a microenvironment within the COVID–19 communication ecology (Perreault & Perreault, 2021), with multidimensional and intertwined external and internal influences which constrained journalistic practices during the pandemic in the countries under study. We argue that while the pandemic did not create these constraints, it exacerbated them. Taken together, the structural and internal sub-themes demonstrate how the COVID–19 communication ecology operated as a layered system in which power, resources, routines, and identities intersected.

Externally, media control mechanisms, ranging from total lawlessness and absence of media regulation to total governmental control and stifling of all freedoms, posed major threats to the safety and professionalism of journalists. Other external constraints included economic hardships and infrastructural barriers.

Internally, the nature of the routines and practices of media organisations posed other challenges. These included limited professionalism, scarce training, shortages in economic and technical resources, and the difficulties of obtaining and transmitting accurate health information. Other internal challenges included gender-based discrimination, generation-based discrimination, and employment status-based discrimination.

We argue that these external and internal influences constantly feed each other in a cyclical, ongoing process. For example, Arab regimes, representing varying degrees of authoritarianism, strove to politicise and monopolise the narrative around the pandemic by stifling media freedom. This has impacted the routines of media organisations, as was evident in the restrictive measures adopted by state-controlled media organisations. Moreover, because governments withheld accurate information about the pandemic, this negatively affected the ability of journalists to practice professional health journalism.

It is essential to examine how these constraints affect journalists across different demographic groups, particularly during the pandemic, which exacerbated the pre-existing inequalities related to gender, generation, and employment status. One aspect worthy of further investigation here is the digital divide and the *gender digital divide,* that is, the gap between the technological haves and have-nots, and the impact it has on journalists (De Vuyst & Raeymaeckers, 2019), and Arab women journalists in particular.

The findings of this study highlight the tug-of-war between Arab regimes and the journalists who dare to challenge their COVID–19-related narratives. In the future, both groups will likely increase their reliance on new technologies, highlighting the dual role of new media as tools for both liberation (Diamond, 2010) and repression (Gunitsky, 2015).

There were multiple ways in which some Arab journalists resisted the constraints, such as the diaspora practicing independent journalism and relying on digital technologies to acquire new skills. This invites further investigation of the phenomenon of digital authoritarianism

(Dragu & Lupu, 2021; Khamis, 2020; Jones, 2022) and its effects on many aspects of Arab journalism, including health journalism. Moreover, it is essential to continue exploring these issues beyond the pandemic, especially in understudied non-Western countries, to fill some of the gaps in the current literature on journalism, and to amplify marginalised voices from the Global South.

In analysing the dynamics of ongoing contestations between the regime-imposed constraints and challenges and journalistic resistance to them, it is important to highlight their impact on routines and journalistic practices of media organisations in this region in the future. Some interviewees believed that there is a need to develop alternative media economies to overcome similar future emergencies. They remarked that this crisis revealed the flaws of the current model of media funding, as it showed how advertising revenues can suddenly fall, causing huge economic losses, but also how the reliance on government funding can strangle media freedom. Consequently, they suggested systems of public funding which would enable the Arab media to survive, while safeguarding its independence.

Several interviewees also highlighted the need to develop effective health journalism practices in the Arab world, with a new generation of specialised journalists who can produce professional reporting during health crises to combat misinformation and disinformation.

Predicting the future of Arab journalism, the interviewees acknowledged some uncertainties, such as the future of the war in Syria, and future political changes in their respective countries. They agreed that these uncertainties create an equally uncertain future for Arab journalism.

Other predictions included the importance of digitalisation, and they agreed that the pandemic had ushered in a new era of increased digitalisation, which would restructure traditional journalistic practices and routines in the future.

There was consensus among the interviewees that the pandemic, with all its challenges, had paved the way for positive change in Arab journalism through the provision of new opportunities to train a new generation of qualified Arab journalists who will be more dynamic and technologically savvy, and, thus, enhance Arab journalism.

We argue that the interplay between these internal and external influences, and the amalgamation of these constraints and potentials, will give birth to new developments in the Arab media in a constantly transitioning region. We hope that some of the lessons learned from this crisis can help in overcoming similar constraints, maximising future potential, and creating new opportunities for Arab journalism moving forward.

Temporal scope and evolving communication ecologies

The findings of this study unpack journalism as a microenvironment within the COVID–19 communication ecology (Perreault & Perreault, 2021), shaped by the constant interaction between political, legal, economic, infrastructural, and organisational forces. This analysis is based on interviews conducted in 2020–2021 and therefore reflects a specific crisis phase marked by regulatory fluidity and institutional uncertainty. Importantly, the manuscript was developed before the fall of the Bashar al-Assad regime. All Syrian data were collected while the Assad government remained in power and exercised extensive territorial and

informational control. Accordingly, Syrian journalists' accounts reflect a communication ecology structured by authoritarian governance, surveillance practices, and constrained press freedom during that particular political configuration.

From a communication ecology perspective, crises do not create structures but intensify and reconfigure existing relational dynamics (Houston et al., 2021). In several Arab contexts – including Egypt, Syria, and Bahrain – pandemic-era informational controls appear to have been normalised, reinforcing patterns of digital authoritarianism (Dragu & Lupu, 2021; Khamis, 2020). In Tunisia, subsequent democratic backsliding has narrowed the relatively broad margin of press freedom observed during early COVID–19 coverage. At the same time, accelerated digitalisation, remote production routines, and online professional training have endured beyond the immediate crisis moment.

Thus, the COVID–19 communication ecology should be understood less as an exceptional rupture and more as a stress test that exposed and consolidated structural tensions within Arab media systems. Longitudinal research is needed to trace how these ecological configurations continue to evolve under shifting political conditions.

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