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Information integrity and information pollution: Vulnerabilities and impact on social cohesion and democracy in Mexico

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Information Integrity and Information Pollution

Vulnerabilities and Impact on Social Cohesion and Democracy in Mexico

Anita Breuer



Information integrity and information pollution

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Anita Breuer

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Abbreviations

ATI	access to information
BTI	Bertelsmann Transformation Index
CLIP	Centro Latinoamericano de Investigación Periodística
COFECE	Comisión Federal de Competencia Económica/Federal Economic Competition Commission
CSO	civil society organisation
ECLAC	Economic Commission for Latin America and the Caribbean
EDN	National Digital Strategy/Estrategía Nacional Digital
ENDUTIH	Encuesta Nacional sobre Disponibilidad y Uso de Tecnologías de la Información en los Hogares/National Census on the Availability and Use of Information Technologies in Households
HIK	Heidelberg Institute for International Conflict Research
ICT	information and communication technologies
ICT4D	information and communication technologies for development
IDEA	Institute for Democracy and Electoral Assistance
IFT	Instituto Federal de Telecomunicaciones/Federal Institute of Telecommunications
IFAI	Instituto Federal de Acceso a la Información/Federal Institute for Access to Information
INAI	Instituto Nacional de Transparencia, Acceso a la Información y Protección de Datos Personales/National Institute for Transparency, Access to Information and Personal Data Protection
INE	Institution Nacional Electoral/National Electoral Institute
INEGI	Instituto Nacional de Estadística y Geografía/National Institute of Statistics, Geography, and Informatics
MCCI	Mexicanos Contra La Corrupcion y la Impunidad/Mexicans against Corruption and Impunity
MORENA	Movimiento Regeneración Nacional/National Regeneration Movement
OECD	Organisation for Economic Co-operation and Development
OGD	open government data
RTI	right to information
SEGURIDAD	Secretaría de Seguridad y Protección Ciudadana/Secretariat of Security and Population Protection
SESNS	Secretariado Ejecutivo del Sistema Nacional de Seguridad Pública
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNISDR	United Nations International Strategy for Disaster Reduction
USAID	United States Agency for International Development
V-Dem	Varieties of Democracy Project

Executive summary

Motivation and background

Equal access to accurate information is crucial if societies are to function well. Digitalisation has transformed how information is transmitted and received, presenting both opportunities and risks.

Digital platforms offer potential for citizen engagement, transparency, and for empowering marginalised groups. However, these platforms are also exploited by those wishing to spread disinformation, which jeopardises informed decision-making, and fosters polarisation and conflict.

Information pollution has emerged as a threat to democracy and social cohesion, which has raised concerns amongst scholars and policymakers worldwide. Yet, so far, most of the research on this phenomenon has been conducted in English-speaking societies in highly developed nations that are long-established democracies. Important research gaps persist regarding how information pollution impacts democracy and social cohesion in younger democracies, in less developed contexts and in conflict settings.

Tapping into this gap, this study presents an analysis of the case of Mexico. It applies an analytical framework developed to investigate how enablers, drivers and consequences of information pollution are intertwined with other factors in the political, media, social and legislative contexts. Based on interviews with national experts from these contexts, the study sheds light on the causes and impacts of information pollution in and on society and politics.

Key findings

In essence, the study finds that information pollution in Mexico jeopardises, in particular, the sustenance of a shared inclusive national identity and vertical state–citizen cooperation, which are core elements of social cohesion. It also critically challenges the deliberative, participatory and liberal dimensions of democracy in the country. Social, media, legislative-institutional and political context factors enable and drive this vulnerability to information pollution.

In Mexico, several structural conditions converge that indirectly enable information pollution. Persisting poverty and socio-economic inequalities, as well as high levels of violence and corruption partly associated with organised crime and the drug economy, constitute widely shared societal grievances. The problems of transmigration, violence against women and the marginalisation of the country's indigenous population contribute to a complex structure of social conflict. The media landscape presents high levels of market concentration and low levels of transparency. While Mexico has a robust legal basis to ensure access to public information, implementation gaps persist due to a lack of supporting administrative infrastructure and the absence of an open data culture in the public sector. In addition, trust in state institutions is traditionally low in Mexico. Disenchantment with the political establishment and democracy stems from the inability of all democratically elected governments so far to substantially reduce poverty, inequality and violence. The combination of these conditions contributes to an increased vulnerability of Mexican society to information pollution.

This vulnerability is exacerbated by a number of factors that directly drive information pollution. Drug cartels use the digital space for deterrence as well as recruitment and the glorification of narcoculture. Divisive and discriminatory narratives against women and migrants also proliferate online. Freedom of the press, and with it accurate and reliable reporting on public affairs, is increasingly impacted by violence against media professionals, and government efforts to counteract this trend are insufficient. President Andrés Manuel López Obrador has a strained relationship with the press. He frequently delegitimises the reporting of critical journalists as fake

news and lies in the service of his opponents, whom he portrays as enemies of his political project of national development transformation.

This polarising discourse is also being spread through digital channels and damages trust in traditional news media. Mexicans nowadays consume news primarily via social media sites and messaging apps rather than traditional, editorialised media. Recent legislative initiatives contained problematic provisions for content regulation and user privacy. Important accountability institutions, including the National Transparency Institute, have come under stress as the government seeks to curtail their budgets and competences. These vulnerabilities pose a threat to both social cohesion and democracy in Mexico.

The increasing reliance on social media has negative effects on a shared national identity as citizens increasingly obtain important information concerning public life via digital echo chambers. In these echo chambers, identity-based controversies that are fuelled by digital disinformation divide society into two camps, pitting supporters of the president and his political project against his opponents. Disinformation disseminated via social media also frequently targets migrants and feminist activists. Further, state-sponsored disinformation and the resulting reduced trust in state actors have damaged relations between organised civil society and the state. One example is the decision of civil society organisations (CSOs) to discontinue cooperation with government institutions within the framework of the multi-actor partnership Open Government Alliance.

Limited media plurality and neutrality combined with an increasingly media-hostile environment has led to a degradation of the public debate. This threatens the deliberative dimension of democracy, which hinges on a culture of debate that is characterised by respect for the opposition and for counter-arguments, as well as the pluralism of opinions. Further, the CSO participatory environment has deteriorated. In particular, CSOs that perform government watchdog functions have suffered reputational damage by being framed as “agents of foreign interests”. Liberal democracy requires effective oversight and the accountability of government. This, in turn, is not possible without the transparency of government action and the availability of data on government performance. In this regard, government attempts to weaken independent accountability institutions and to restrict access to information about important issues of public life, including national security and large infrastructure projects, give cause for concern.

Conclusions and policy implications

The results of this study point to entry points for measures to curb information pollution, at both the national and international level.

Recommendations for Mexico include **strengthening public resilience to information pollution through** civic education and information literacy campaigns. In addition, strategic communication campaigns should counter disinformation by organised crime. Further, measures to **improve media capacity to manage information pollution** should be a high priority in the Mexican context. These should include capacity building for journalists and efforts to protect their safety, as well as support to non-commercial, local and community media. At the same time, it will be important to engage in strengthening **the capacity of public institutions to promote access to reliable and accurate information sources**. Capacity building of public officials and support to multi-stakeholder partnerships between public institutions, media and civil society can contribute towards building an open data culture in the Mexican public sector and tackling information pollution.

At the international level, efforts to counter information pollution should go beyond approaches that focus on the regulation of online content. The study of the Mexican case shows that information pollution can be elite-driven to an important extent. This is the case when political

leaders accuse institutions that ensure vertical and horizontal accountability of the executive of being ineffective and of standing in the way of addressing national grievances such as poverty, inequality and corruption. International efforts to counter information pollution and protect democracy and social cohesion **should bolster diplomatic and economic disincentives for leaders who attack critical state and non-state institutions** such as national transparency authorities and CSOs engaged in the field of rights to information and freedom of expression. At the same time, they should prioritise **measures to strengthen these institutions proactively and effectively**, even if they still appear to be stable.

1 Introduction

1.1 Risks of information pollution for democracy and social cohesion. Topic statement and literature review

Access to high-quality information is a global common good. It is well established under international law (United Nations General Assembly, 1948, Art. 19), and has been enshrined in national constitutions around the world since the 1990s (Riegner, 2017). It is also recognised by the United Nations 2030 Agenda for Sustainable Development, which, under SDG target 16.10, calls for ensuring “public access to information”. Access to information (ATI) is widely considered a necessary condition for individuals’ ability to make informed decisions, to engage in democratic processes and to build inclusive, peaceful and just societies (Héretier, 2011; Yannoukakou & Araka, 2014; Lloyd, Lipu & Kennan, 2010; Lor & Britz, 2007). Open information flows between citizens and government are further seen as essential for government transparency and accountability (Relly, 2012; Yannoukakou & Araka, 2014; Breuer & Leininger, 2021). Political science literature has therefore identified ATI as a necessary condition for enabling citizen–state collaboration and citizen trust in state institutions, as well as for creating a sense of common identity. These, in turn, are key attributes of social cohesion (Leininger et al., 2021).

The advent of the internet in the early 1990s, and the subsequent emergence of social media, starting in the mid-1990s, substantially changed the way information is created, distributed and consumed (Adèvol-Abreu, Hooker & Gil de Zuniga, 2018). For citizens, these developments expanded opportunities to circumvent traditional information gatekeepers, to discuss public affairs, to monitor the behaviour of officials and to engage in new forms of collective action (Breuer, 2011; González-Bailon & Lelkes, 2022). For governments, the new digital technologies created additional opportunities to engage with their citizens, to increase transparency through the provision of open government data, and to improve the efficiency of public administration through e-government initiatives (Matheus & Jansen, 2019; Doran et al., 2023).

Alongside these opportunities, however, digital media have created a distinctive set of problems for information integrity. They have facilitated the dissemination of large volumes of information at a rapid pace and without quality control. Online content is mostly published on internet platforms whose economic model is based on advertising. In the logic of this model, sensationalist or controversial content that has the potential to capture the emotional attention of users is preferable to accurate and editorially curated content (Lischka & Garz, 2023; Sismeiro & Mahmood, 2018; Braun & Eklund, 2019). Diverse actors exploit this model to spread disinformation for economic, political or ideological gains, and rely on both technical solutions and paid human services to do so. This new business model has not only reduced the access to revenues of traditional news media through advertising (Accenture, 2021), but has also led to substantial *information pollution*, i.e. the circulation of false, misleading or manipulated information, which spreads faster and has greater outreach than information from trustworthy and reliable sources (UNDP, 2022; Vosoughi, Roy & Aral, 2018). The combination of information pollution and information overload not only affects people’s ability to find and identify accurate and reliable information, but also their ability to build trust in information (Pandita, 2014; Lewandowsky, Ecker & Cook, 2017; Malin & Lubienski, 2022).

The potential negative effects of information pollution on the quality of democracy and social cohesion are substantial. Evidence indicates that disinformation, toxic levels of polarisation, and autocratisation are global trends that reinforce each other (Tucker et al., 2018; Kubin & Sikorski, 2021; V-Dem, 2023).

With regards to democracy, digitalisation has vastly increased the amount and speed of information surrounding important political events and processes such as elections, changes of government, and salient policy debates. Information pollution makes it difficult for citizens to

make informed choices regarding the political and policy issues at stake. This may undermine public decision making and participation (i.e. the input legitimacy of democracy) as well as transparency and accountability (i.e. the throughput legitimacy of democracy) (Carlsson & Rönblom, 2022; Scharpf, 1999). Political and government actors can both be victims and perpetrators of information pollution (UNDP, 2022; Guriev & Treisman, 2022; V-Dem, 2023). Where disinformation strategies are employed by government agents this may not only tarnish the public's perception of the government but also of state institutions in general. This is particularly problematic in contexts where baseline levels of citizen trust in state institutions are already low as it may accelerate processes of democratic erosion and drive political polarisation (Unger, 2020; Musgrave, 2021; Hunter, 2023). Autocratising governments use disinformation to fuel social division and polarisation to strengthen their political support base (Guriev & Treisman, 2022). Elevated levels of polarisation, in turn, can prompt citizens to abandon democratic principles in order to obtain their preferred policies (V-Dem, 2022). More generally, information pollution degrades public political deliberation through the inflation of minor concerns and polarised opinions.

Information pollution can also act as a driver of social polarisation and erode social cohesion. Disinformation strategies frequently exploit existing resentments or prejudices against minority groups and lead to their further stigmatisation and marginalisation (Palau Sampio & Carratalá, 2022). Such strategies, however, need not necessarily be directed against vulnerable groups; they can also target political opponents or elites that are perceived as unfairly privileged, or actors in international development cooperation (see Brozowski, 2023). Populists, in particular, in their discourse frequently recur to the construction of a binary societal divide, in which an "in-group" of ordinary people that is portrayed as homogenous is pitted against societal "out-groups" such as foreign elements or corrupt elites (Cover, Haw & Thompson, 2022; Romero-Rodríguez, Castillo-Abdul & Cuesta-Valino, 2023; Uysal, Jurstakova & Ulusahin, 2022). Such simplistic, divisive rhetoric, amplified through social media, can reduce interpersonal trust between individuals, and thus their willingness to cooperate with others for the common good (González-Bailón, 2022).

More dangerously yet, disinformation strategies also have the potential to endanger social peace and stability. As illustrated by the storm on the Capitol in the US in 2021, even relatively stable democratic societies are not immune to the possibility of (violent) protests or riots triggered by disinformation.

Over recent years, social media has come to the forefront of debates that seek to identify (and, ideally, address) the risks of information pollution for democracies and social cohesion (see e.g. Vaidhyanathan, 2018). Although public awareness and concern about digitally driven information pollution and its impacts are growing, **important gaps persist** both in academic research and international development practice.

First, while some studies have made significant contributions in this direction (e.g. Gonzalez-Bailón, 2022; Lorenz-Spreen et al., 2023), **analysing, measuring and quantifying the societal and political impacts of information pollution continues to be a challenge**. Methods to systematically capture root causes of information pollution and to effectively assess its social and political impacts have been slow to emerge, and well-tested analytical frameworks do not yet exist (UNDP, 2022).

Second, a bias exists in that the majority of research on this topic has thus far been confined to studies in high- and middle-income, technologically developed states, many of which are digitally advanced and have stable democratic institutions. Furthermore most of this research has either been confined to English-speaking populations or focused on English language content. Although some studies have ventured beyond these confines (e.g. Pan & Siegel, 2020; Asimovic et al., 2021; Gaineous, Abbott, & Wagner, 2021) **more research is needed on poorer and technologically underdeveloped states and on conflict-affected or fragile states**.

Third, the information and communication technologies for development (ICT4D) paradigm that emerged in the late 1990s, conceptualises ICTs as a useful tool for development (Heeks, 2017). National and international donor agencies have since sought to systematically integrate ICTs into their operational activities. Yet, **digitally based or supported initiatives often lack robust theoretical and empirical underpinning** and there is a need to refine theories of change (Breuer et al., 2018; Heeks, 2006; Dodson, Sterling & Bennett, 2012).

1.2 Research questions and objectives

Against the background, this study focuses on two research questions:

1. What factors contribute to societal vulnerability to digitally enabled information pollution? How are these factors related to other factors in the political, media, social and legislative environments?
2. How does digitally enabled information pollution impact social cohesion and democracy?

In doing so, the study seeks to make three main contributions.

First, it addresses the analytical challenge of systematically capturing causes of information pollution and assessing its impacts on democracy and social cohesion. It does so by applying an analytical framework first proposed by UNDP in 2022 and using empirical data from Mexico. Second, by choosing Mexico as a case, the paper adds to the number of academic studies that investigate the relation between information pollution, democracy, and social cohesion in states whose democratic institutions are under strain (BTI, 2022b; Munro, Faust & Thunert, 2022), that are affected by conflict (HIIK, 2023), and that are non-English speaking. Third, at the practical level, the paper seeks to identify entry points for country level and international democracy and governance support to counter-information pollution.

Given that the causal mechanisms at play have rarely been studied so far, the paper adopts an explorative, hypothesis-generating, rather than hypothesis-testing, approach. By doing so, it aims to contribute towards building more robust theories of change for interventions that seek to counter information pollution.

1.3 Conceptual framework

As explained in the previous section, the fundamental academic objective of this paper is twofold: first, it aims to understand what social, political and institutional context factors impact negatively on access to quality information and increase the susceptibility of societies to information pollution that is enabled by digital media. Second, it seeks to assess the impact of digitally enabled information pollution on social cohesion and democracy in the context of Mexico.

To ensure clarity, this section will provide definitions of key concepts and terms, and formulate expectations regarding the relationship between the phenomena described by these concepts.

Digital media, digital news media and social media

In this paper, the term **digital media** is used to refer to computer-mediated communication, including messages sent through media devices, commercial platforms and apps (Walther, 2012; Steele, Hall & Christofferson, 2020). Prior to 2007, mobile phones supported only two modalities: voice calls and texting. Currently, smartphones place few limits on the modality of communication and have become the primary device through which mobile and internet-based communication flows, next to PCs and tablets. This paper therefore uses the term *digital media*

to refer to all computer-mediated design flowing through media devices. The umbrella term digital media comprises the subordinate terms “digital news media” and “social media”.

Digital news media is difficult to define. Scholars of media and mass communication often distinguish between “legacy” digital news publications, referring to those derived from long-established journalistic brands and “digital native” or “online-native” news publications, referring to those that are characterised by their exclusively digital nature (Salaverría, 2020; Harlow & Salaverría, 2016). This paper will use the term *digital news media* to describe online journalistic publications irrespective of whether they are online born or spin-offs of traditional print or broadcasting organisations. Similarly, to date, there is no single agreed-upon definition of “**social media**”. While the term is frequently used to describe web-based applications that facilitate the creation and exchange of user-generated content, there is no single mode of communication (Breuer, 2011). According to Steele et al. (2020), social media are typically characterised by a set of features that are built into a stand-alone online platform and allow for searchable and scalable peer-to-peer communication. This paper joins comprehensive conceptualisations of social media that include not only social networking sites (such as Facebook) but also microblogs (e.g. Twitter), photo- and video-sharing platforms (e.g. Instagram, TikTok, and YouTube), and messaging apps with end-to-end encryption (e.g. WhatsApp, Telegram, Signal, Viber) (Ellison & Vitak 2015).

Access to information, information integrity and open government data

The **right of information** is derived from the human right to freedom of opinion and expression. The underlying notion is that an individual will only be capable of freely expressing opinions if he or she has the necessary information to form these opinions in the first place (Yannoukakou & Araka, 2014; Riegner, 2017). The related concept of **information integrity** implies that citizens have access to trustworthy, balanced and complete information on current affairs, government activities, political actors, and other issues that are important for their political perceptions and decisions (Club de Madrid, 2018).

The concept of **access to information (ATI)** refers to the existence of a system that effectively satisfies the rights of citizens to request and receive government information, defined as the “information generated, collected, maintained and held by public organisations during the performance of their operational tasks” (Yannoukakou & Araka, 2014, p. 333). This includes both information collected by government bodies about citizens as subjects of government, as well as information that enables citizens to assess the performance of their governments. Transparency and ATI are key elements of government accountability, which involves the right of citizens to receive information about government action and the corresponding obligation of governments to release all necessary details (Breuer & Leininger, 2021; Schedler, 1999). As such, ATI is an important part of functioning democratic societies.

Essentially, states can fulfil their obligation to ensure ATI in two ways: **reactively**, whereby government information is released upon request, and **proactively**, whereby government information is released voluntarily by government bodies (UNESCO, 2022; Yannoukaka & Araka, 2014). The latter, proactive dissemination of government information can be accomplished through the provision of **open government data (OGD)**. The term OGD refers to data produced or commissioned by government or government-controlled entities, which can be freely used, reused and redistributed by anyone. According to expert criteria, government data can be considered open if they are complete, primary, timely, accessible, machine readable, non-discriminatory, non-proprietary and license-free (OpenGovdata.org, 2007). At its core, the OGD movement aims to increase accountability and transparency by providing access to data that provide insight on the inner workings and performance

Disinformation and information pollution

So far, a standardised terminology related to the issue of false or low-quality information disseminated on the internet or other media has not yet evolved. The popular term “fake news” may be too narrow and, at the same time, too value-laden, given that it has also been co-opted by political actors who use it to delegitimise critical media reporting. Drawing on UNDP (2022), this paper therefore uses the more neutral and broader term **information pollution** to refer to the presence of an array of types of low-quality information in the information ecosystem. On the lower end of the spectrum are irrelevant or unsolicited messages such as spam email or redundant information that contribute little to knowledge, including various forms of online entertainment (Wanless, 2023). On the other end of the spectrum is information that is verifiably false, misleading and manipulated, which is created, produced and disseminated intentionally or unintentionally, and which has the potential to cause harm (UNDP, 2022). In its most extreme form, false information created and disseminated with the intention to encourage violence towards a person or group based on something such as race, religion, sex, or sexual orientation is often referred to as “hate speech”.

Information pollution encompasses various categories of content and practices for its dissemination, including:

- **misinformation**, which refers to content that is false or inaccurate but shared without intention to cause harm (Wardle & Derakhshan, 2017);
- **malinformation**, which refers to a situation where genuine information is shared to inflict harm on a person, organisation or country (by detaching information from its original meaningful context or by publicly disclosing information that was meant to remain in the private sphere) (Wardle and Derakhshan, 2017); and
- **disinformation**, which refers to fabricated information (sometimes blended with facts) that is disseminated with practices that go well beyond news reporting (e.g. automated accounts, targeted advertising, organised online trolling,¹ internet memes²) with the intention to harm a person, social group, organisation or country (Howowitz, 2018).

Democracy

This paper adopts an encompassing concept of “liberal democracy” that builds on Robert Dahl’s (1972) concept of polyarchy. Following the conceptual proposition of the Varieties of Democracy (V-Dem) project, it conceives of democracy as a complex aggregate of multiple continuous dimensions rather than one of several categorical regime types. These dimensions include liberal democracy, participatory democracy, deliberative democracy and egalitarian democracy, each of which can be measured by assessing the stronger or weaker presence (or the absence) of certain components and sub-components. While this conceptualisation recognises different varieties of democracy, it considers electoral democracy, i.e. the selection of government in free and fair elections, essential to any kind of democracy (Coppedge, 2023).

Empirical research indicates that digital media is a double-edged sword for democracy (Lorenz-Spreen et al., 2023). On the one hand, it can empower civil society, as seen in the Arab Spring, Fridays for Future, and MeToo movements (Breuer, Landman & Farquhar, 2015; Jackson,

1 The term “trolling” refers to deliberate, deceptive and mischievous attempts to provoke emotional responses from other online users.

2 Internet memes are short bits of information that are easily reproduced, altered and shared by large online audiences. They usually combine visual and textual content that may pick up on political headlines and twist them in a humorous or mocking way.

Bailey & Welles, 2020). It can also contribute to the exposure of citizens to a variety of opinions. These features potentially **strengthen the liberal and participatory dimension of democracy**. On the other hand, political disinformation circulates mostly on social media (Valenzuela et al., 2022). By facilitating the circulation of hate speech and disinformation, digital media may **weaken the deliberative dimension of democracy**, which focuses on the need for respectful debate amongst an informed citizenry (Coppedge, 2023; Habermas, 1996). Research also suggests a **mixed record** regarding the impact **of digital media on electoral democracy**. On the one hand, a considerable number of studies have found a positive relation between social media use and voting in representative and direct democratic elections, although these impacts are often minimal and mediated by socio-demographic factors (e.g. Boulianne, 2018; Breuer & Groshek, 2014). On the other hand, countries frequently find their electoral processes targeted by hacktivists, cybercriminals, and even political actors intent on manipulating information and swaying public opinion. Such manipulation and disinformation tactics may severely damage citizens' ability to choose their leaders based on factual news and authentic debate (European Commission; 2018; Freedom House, 2020).

Social cohesion

Social cohesion refers to the bonds that hold societies together. Although there are several ways to conceptualise social cohesion, there is a growing agreement that three crucial elements are essential. First, relationships between the different types of actors that make up a society are at the core of social cohesion. Second, social cohesion is shaped by individual and group behaviours. Third, social cohesion involves two dimensions: a horizontal dimension that refers to the relationship between different individuals and groups within a society, and a vertical dimension that refers to the relationships between individuals or groups and the state (see, for example, UNDP, 2020). Hence, for the purpose of this paper we adopt the definition of social cohesion proposed by Leininger et al. (2021). According to these authors "social cohesion refers to the vertical and horizontal relations among members of society and the state that hold society together. Social cohesion is characterised by a **set of attitudes and behavioural manifestations** that includes **trust**, an **inclusive identity** and **cooperation** for the common good." (Leininger et al., 2021, p. 3).

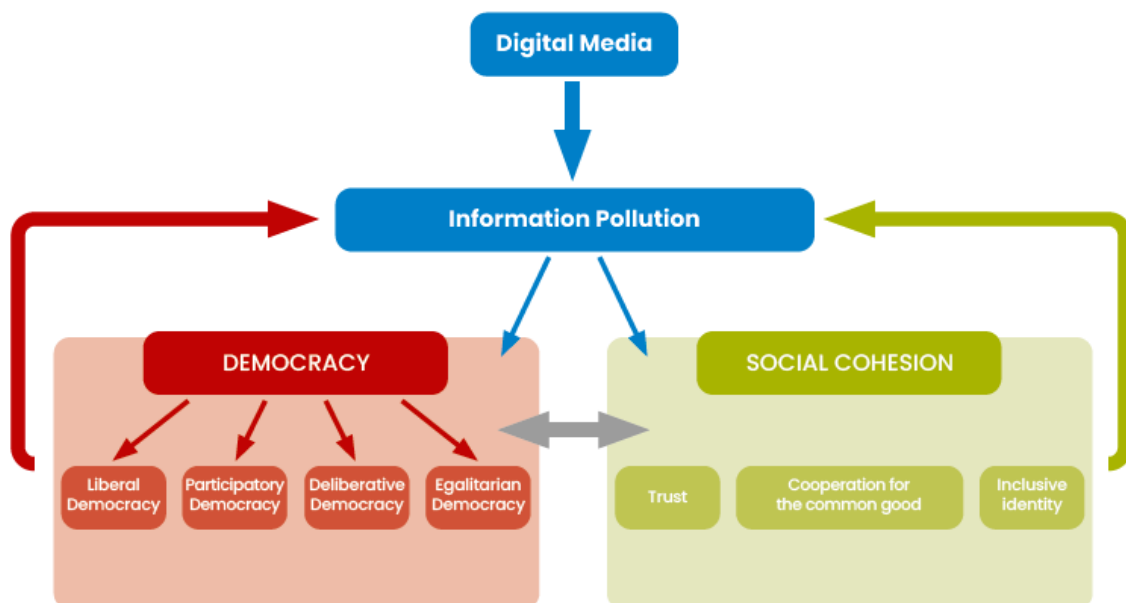
Digital media can impact social cohesion through different channels and mechanisms (González-Bailón, 2022). For example, social media can enlarge or rewire networks and create new opportunities for membership and affiliations. Social media platforms enable users to **increase the interaction within groups**, thus strengthening so called bonding ties (e.g. Bond et al. 2012). They have also been found to contribute to building bridges between geographically and socially distant groups (e.g. Breuer, Landman & Farquhar, 2014; Park et al., 2018). By strengthening bonding ties and increasing the number of bridging ties within a society, social media can have the beneficial effects of **enhancing inter-personal and inter-group trust** (Chetty et al., 2022a, 2022b) as key elements of social cohesion. Further, digital media have substantially increased the amount of information that individuals are exposed to and the speed at which this information is diffused and consumed. Such heightened connectedness is similar to the information cascades that typically precede collective action and successful mobilisations (e.g., Lohmann, 1994). These cascading effects of digital media can have **positive implications for political participation and mobilisation and may foster pro-social, cooperative behaviour**, such as participation in peaceful protests, to pursue collective causes (González-Bailón & Lelkes, 2022; Bond et al., 2012; Steinert-Threlkeld et al., 2015). However, they can also have negative consequences when they increase the reach of misinformation or toxic, inflammatory speech (e.g., Grinberg et al., 2019; Lazer et al., 2018). Research indicates that social media posts that contain identity signals are more likely to be re-shared and liked and that this is particularly true for posts that attack an outgroup (Hopkins, Lelkes, & Wolken, 2022). By increasing the salience of identities, social media can thus **contribute to increasing intergroup bias**, which is **detrimental to the formation of inclusive identity** within a society,

another key element of social cohesion. Furthermore, increased reliance on social media also increases the risk of echo-chamber effects. The **echo-chamber effect** manifests as a phenomenon in which individuals or groups are confined to a limited range of opinions that echo their own beliefs. This asymmetry in content visibility not only **creates biased perceptions and pluralistic ignorance** but also fosters a falsely perceived social reality that undermines social cohesion (González-Bailón & Lelkes, 2022; Barbéra, 2020).

The terms social cohesion and democracy are often mentioned together and there is a general scholarly understanding that several of their respective sub-components are interdependent. To pick just one example, Zmerli and Newton (2008) report robust and statistically significant correlations between confidence in political institutions and satisfaction with democracy (i.e. important conditions for democratic stability) on the one hand, and generalised social trust (i.e. a key element of social cohesion) on the other, although to date the exact nature of this interdependent relationship has neither been fully theoretically established nor empirically demonstrated (Lewis et al., 2019; Newton, 2001). Since doing so is beyond the scope of this paper, the impacts of information pollution on democracy and on social cohesion will be discussed separately. It is important to note, though, that this paper does not assume a singular direction of effect ($x \rightarrow y$). Rather, we assume the relationship between the concepts explained above to be bi-directional in a mutually reinforcing cycle and that positive as well as negative feedback loops may therefore exist.

Figure 1 summarises the assumed relationships between digital media, information integrity and pollution, democracy and social cohesion

Figure 1: Visualisation of conceptual framework



Source: Author

As shown in this section, over the past two decades a considerable body of literature has been generated that deals with the effects of digital media on democracy and cohesion. However, literature in this field is heavily US dominated (Valenzuela et al., 2022). Furthermore, to a large extent, studies are based on correlational data (for comprehensive reviews see González-Bailón & Lelkes, 2022; Lorenz-Spreen et al., 2023; and Boulianne, 2018) and are thus unable to make strong claims about causality. Far less research has been dedicated to the political and sociological factors that explain what makes societies vulnerable or resilient to information pollution driven by digital media or, conversely, under what circumstances they will likely exhibit higher levels of information integrity.

Against this background, case studies can provide the necessary thick descriptions of how the mutual relationships between digital media, democracy and social cohesion play out in different cultural and political context settings, thereby helping to unpack and understand underlying causal pathways (Geertz, 1973; Creswell, 2013; Klenke, 2008, Seawright & Gerring, 2008). To contribute towards closing this research gap, the exploratory case study of Mexico presented in this paper investigates the complex phenomenon of information pollution within its real-life context. By doing so the paper seeks to generate ideas and help develop hypotheses for the further study of both the social and political factors that enable information pollution as well as its impact on democracy and social cohesion.

The following section introduces Mexico as the selected country case.

1.4 Context: Mexico as a case

Mexico constitutes an appropriate case for exploring the mutually interdependent relationships between digitalisation, ATI and information pollution, and democracy and social cohesion. As put forth by Seawright and Gerring (2008), research case studies should be selected on the basis that they fulfil the twin objectives of (1) representativeness and (2) variation on the dimensions of theoretical interest. Mexico fits both of these objectives, as it can be taken to be representative of current global trends on some of the dimensions relevant to this study, while representing an outlier case on other dimensions of interest.

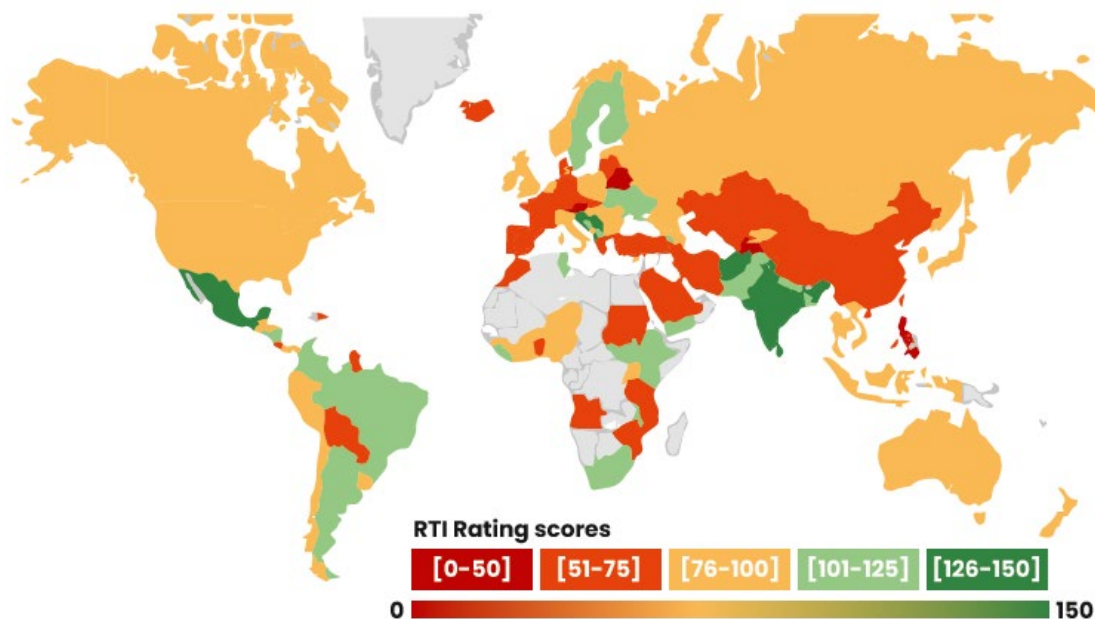
Mexican provisions for access to information and open government data in international comparison

Mexico has a robust legal basis in terms of access to public information (ATI). Over the past decade, the country has also made successful efforts to improve the provision of open government data. However, implementation gaps continue to persist in both areas.

World-wide, considerable progress has been made in terms of binding laws and policies giving individuals a right to access information held by public authorities. In 2021, 132 UN Member States had adopted constitutional, statutory and/or policy guarantees (UNESCO, 2022). In Latin America, countries began to adopt ATI legislation as early as 1980 (Fumega & Scrollini, 2014). By 2021, 25 countries in Latin America and the Caribbean Region, including Mexico, had adopted ATI guarantees. Yet the quality of ATI provisions varies considerably.

The Mexican ATI law “General Act of Transparency and Access to Public Information” dates back to 2002. Having undergone a considerable reform in 2014, in 2016 the law obtained 136 out of the possible 150 points of the Global Right to Information Rating (RTI Rating),³ which put it in first place out of the 112 countries analysed in that year (Centre for Law and Democracy, 2016). In the most recent wave of the RTI Rating, carried out in 2018, Mexico ranked second out of 123 countries. The 2018 RTI Rating shows a significant spread, with nine countries scoring less than 50 and nine countries scoring more than 125 points. As can be seen from Figure 2, Mexico is the only Latin American country to have made it into the latter, highest category.

3 The leading methodology for assessing the strength of legal frameworks for the right to information is the Global Right to Information Rating (RTI Rating) carried out by the Centre for Law and Democracy. At the heart of the methodology is an aggregate index consisting of 61 Indicators, each of which corresponds to a particular feature of a good RTI regime. The maximum index score is 150 points in terms of giving legal effect to the right to information, with higher scores representing stronger laws.

Figure 2: Global Right to Information Rating Map

Source: Author, based on the Centre for Law and Democracy 2016 RTI rating, <https://www.rti-rating.org/>

Although this makes Mexico a (regional) outlier in terms of ATI legislation, the RTI rating results should be interpreted with caution. Two caveats must be made here. First, the rating is limited to measuring the legal framework, and does not measure the quality of implementation. It is telling in this regard that it was Afghanistan, of all countries, that took first place in the ranking in 2018, thus relegating Mexico to the second place. Second, the rating's 61 indicators are focused on assessing legal provisions that enable people to request information on an individual basis (i.e. the reactive dimension of transparency) but do not provide information about provisions requiring governments to proactively publish information (i.e. the proactive dimension of transparency) in the form of open government data. However, reports published by the Organisation for Economic Co-operation (OECD) provide some insights into Mexico's international standing in the area of open government data.

From a comparative perspective, Mexico performs well in the area of open government data. In the OECD OURdata index, which is compiled by means of a survey based on self-assessments by governments, the country ranked seventh out of 36 countries and achieved index scores well above the OECD average (OECD, 2018a; OECD, 2019). However, several country-specific OGD reviews carried out by the OECD indicate the persistence of a significant implementation gap in Mexico. A 2016 review report found that key challenges remained at the very core of the Mexican public sector (in particular line ministries), with public sector institutions "struggling to fully understand, internalise and put OGD into practice", and formulated policy recommendations to overcome these challenges (OECD, 2018b, p. 20). A follow-up review conducted in 2017 found that out of seven governance recommendations to support building a "pro-open-data public sector" only one had been fully achieved (OECD, 2018b).

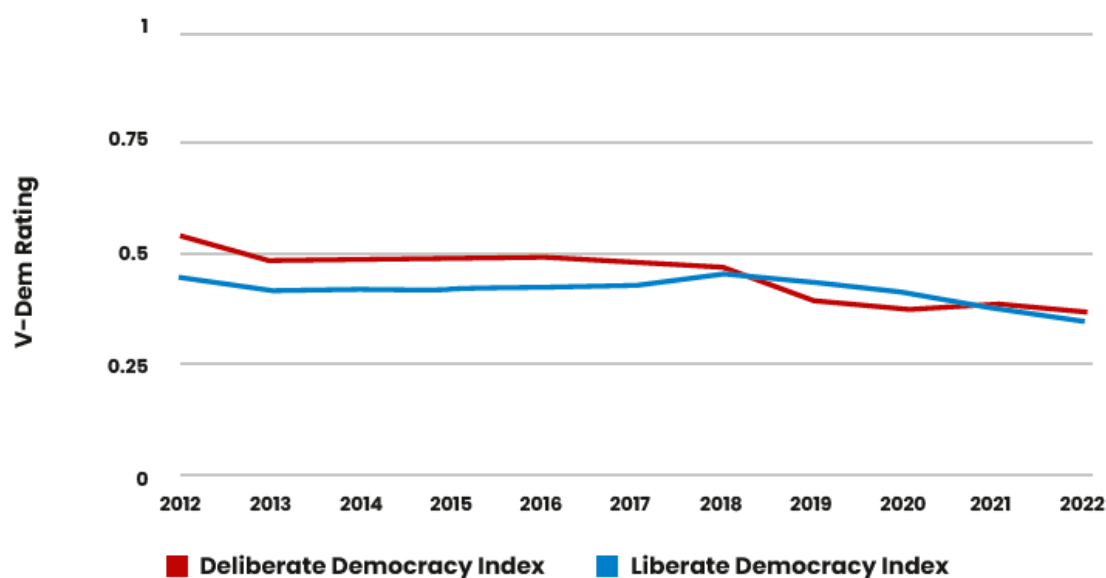
The state of democracy and social cohesion in Mexico

Over the past two decades, autocratisation has become a concerning global trend (Carothers & Press, 2022; Leininger, 2022). Unlike previous waves of autocratisation, the current "third wave" is not characterised by fully fledged democratic breakdowns (for example through a coup or

invasion). Instead, autocratisation processes of the third wave presents themselves in the form of gradual setbacks on key elements of democracy, such as the erosion of political participation beyond elections, shrinking spaces for civil society, restrictions on the freedom of the media, and the undermining of mechanisms to hold government accountable (Lührmann & Lindberg, 2019). “Democratic backsliding”, “democratic recession” or “democratic erosion” are terms that have been coined to describe this more subtle form of autocratisation (e.g. Carothers & Press, 2022; International IDEA, 2022; Mechkova, Lindberg, & Lührmann, 2017).

Mexico is part of this global trend, with leading democracy indices reporting a decline in the country’s quality of democracy over the past decade. On the Freedom House index, which combines *political rights* and *civil liberties* indices into a single *global freedom* index with a maximum score of 100, Mexico declined from an index score of 65 in 2013 to 60 in 2023 (Freedom House, 2023). Over the same period, the country lost 0.6 points on the *representative government* sub-indicator of IDEA’s Global State of Democracy (GSOD) index and 0.4 points respectively on the sub-indicators *rights*, *participation* and *rule of law* (International IDEA, 2023). From 2012 to 2022, Mexico’s status on the BTI *political transformation* index declined by 0.89 points, including a downgrade from the category “defective democracy” to “highly defective democracy” in 2022 (BTI, 2022b). Currently, the most fine-grained and multidimensional framework for the measurement of democracy is provided by the Varieties of Democracy (V-Dem) project. Mexico has been rated as an electoral democracy by V-Dem throughout 2012 to 2022. However, as can be seen from Figure 3, over the same period country values declined notably on V-dem’s indices of deliberative democracy and liberal democracy.

Figure 3: Development of liberal and deliberative democracy in Mexico, 2012–2022



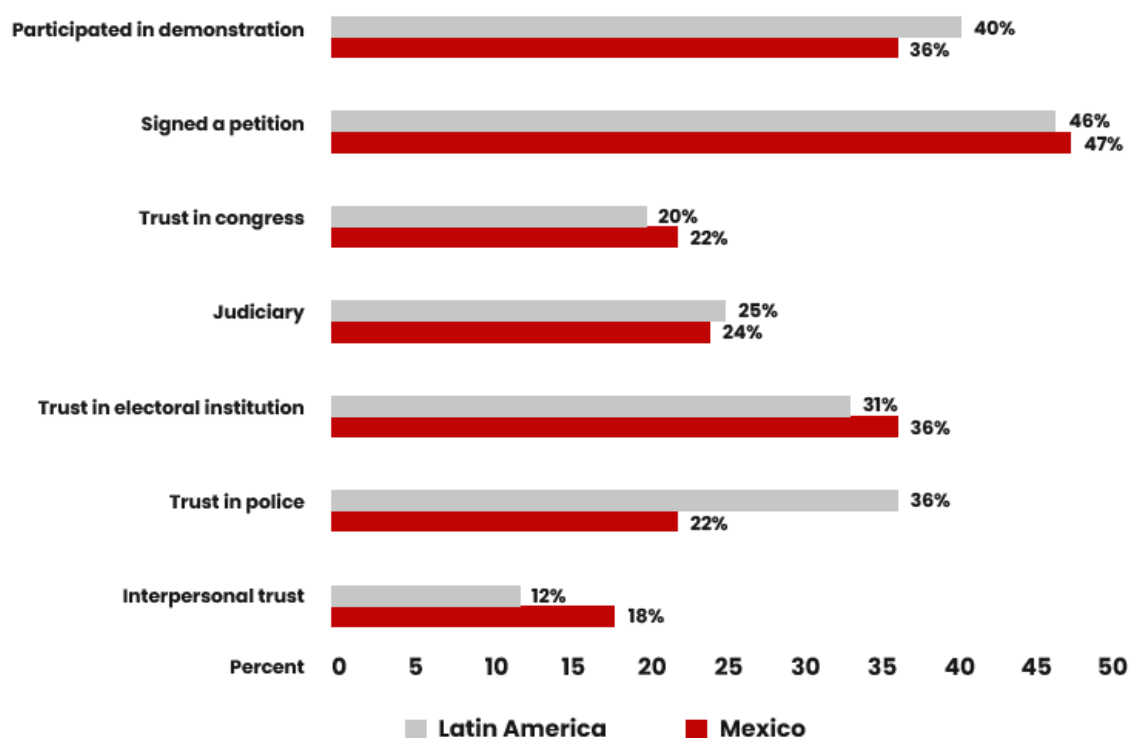
	Deliberative democracy	Liberal democracy
2012	0.54	0.45
2022	0.36	0.35
Diff.	-0.182	-0.1

Source: Own elaboration based on V-Dem (2023)

Unlike those for democracy, to date there are no established indices for measuring social cohesion that have been applied worldwide. Therefore, providing a longitudinal, internationally comparative account of the status of social cohesion in Mexico is a difficult undertaking. Regional comparative studies have thus far mainly relied on data on inter-personal and

institutional trust taken from the World Values Survey, Afrobarometer and Latinobarometer as proxies for the state of social cohesion (e.g. ECLAC, 2007; Kasmaoui & Errami, 2017; Walle, 2023). Indeed, the 2021 Latinobarometer dataset includes data on several variables that are constitutive of the definition of social cohesion adopted in this paper (Leininger et al., 2021). These include levels of interpersonal trust, as well as trust in government institutions (congress, the judiciary, the national electoral authority, and the police). Furthermore, participation in an authorised demonstration and signing a petition can be interpreted as proxies for the willingness to join others to raise an issue of public concern and cooperate for the common good. However, indicators of inclusive identity – the third key element of social cohesion – are not included in the Latinobarometer. Also, not all of these questions were collected uniformly across multiple survey waves. Therefore, Figure 4 below merely provides a snapshot that allows for a proximate insight into how certain dimensions of social cohesion in Mexico compare to the Latin American average.

Figure 4: Trust and cooperation for the common good in Mexico and Latin America (% of respondents), 2021



Source: Own elaboration based on Latinobarómetro (2021)

As can be seen from Figure 4, Mexico does not deviate substantially from the Latin American average on variables that can be considered as indicative of social cohesion, except for three variables. While trust in the police is considerably lower than in the rest of the region, both trust in the national electoral authority and the level of interpersonal trust are well above the regional averages. Notwithstanding, several well-established country reports on Mexico unanimously attest to a climate of increasing social polarisation over recent years (e.g. IEP, 2023; EIU, 2023; BTI, 2022b; Blomeier & Philipps, 2023).

Conceptually, social polarisation cannot be understood as the opposite or the absence of social cohesion. Rather, it must be assumed that low levels of social cohesion foster social polarisation. As with social cohesion, to date there are no established indices for measuring polarisation that have been applied worldwide. This study uses a V-Dem sub-indicator to gain

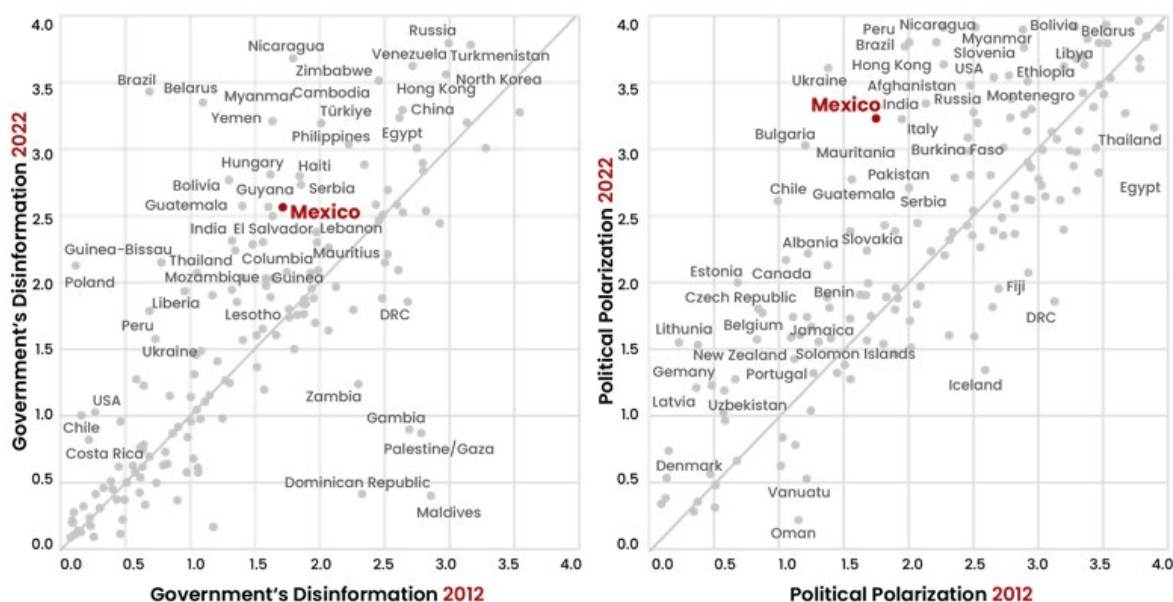
an impression of the evolution of social polarisation in Mexico in international comparison. Data for this indicator is collected through expert-coded surveys asking respondents to rate differences of opinions on major political issues in the respective society on a five-point Likert scale, with 0 indicating serious polarisation and 4 no polarisation (V-Dem, 2022); Mechkova et al., 2019). According to this indicator, starting from a high level, social polarisation has further risen over the past decade (2012: 0.68; 2021: 0.3).

Since the late 2010s, a rich body of literature has emerged on the interaction of social and political polarisation and increasing levels of disinformation (e.g. Marwick & Lewis, 2017; Azzimonti & Fernandes, 2023; Wilson, Parker & Feinberg, 2019). However, findings about the exact nature of interaction between the two phenomena have been mixed, and related empirical research has mostly been conducted in the US (Tucker et al., 2018).

An indicator for measuring disinformation was developed in the context of V-Dem's Digital Society Project. Based on expert opinion, it measures the frequency with which government and its agents use social media to disseminate misleading viewpoints or false information via digital media. The response scale ranges from 0 (never or almost never) to 4 (extremely often). The indicator only partially covers the phenomenon of disinformation, as it is limited to state agents as producers of disinformation. However, it provides an impression of the evolution of the problem. According to this indicator, starting from a medium level, the amount of disinformation disseminated by the government has risen to relatively high levels over the past decade (2012: 1.33; 2021: 2.3).

Figure 5 puts the evolution of social polarisation and government disinformation in Mexico into a global comparative perspective. Disinformation (shown in the left panel) and polarisation (shown in right panel) increased in countries above the diagonal line and decreased in countries below it. Countries have been labelled with their name in those cases where the difference between 2012 and 2022 was significantly and substantially meaningful.

Figure 5: Change in government dissemination of false information and political polarisation in Mexico in global comparison



Source: Author based on V-Dem (2023)

In summary, Mexico is a global outlier in terms of the outstanding evaluation of its ATI legislation. It also stands out in regional Latin American comparison with regards to the favourable

assessments of efforts in the area of open government data. Interestingly, though, regarding the latter, the critical assessment of the implementation status of OGD deviates considerably from this positive assessment. The reasons behind this apparent implementation gap warrant exploration – not least because causal factors detected in Mexico may help to explain similarly deviant cases (Seawright & Gerring, 2008).

Furthermore, the survey data and indices discussed in this chapter indicate that Mexico constitutes a representative case of a widely observed global trend whereby increasing disinformation, toxic levels of polarisation and autocratisation mutually reinforce each other (Freedom House, 2020; Tucker et al., 2018; International IDEA, 2023, V-Dem, 2022; V-Dem, 2023). Key aspects of democracy have considerably eroded over the past decade, while polarisation and levels of disinformation have been simultaneously on the rise. Against this background, the present in-depth study of the Mexican case aims to identify and understand the factors that drive these trends as well as the ways in which they interact.

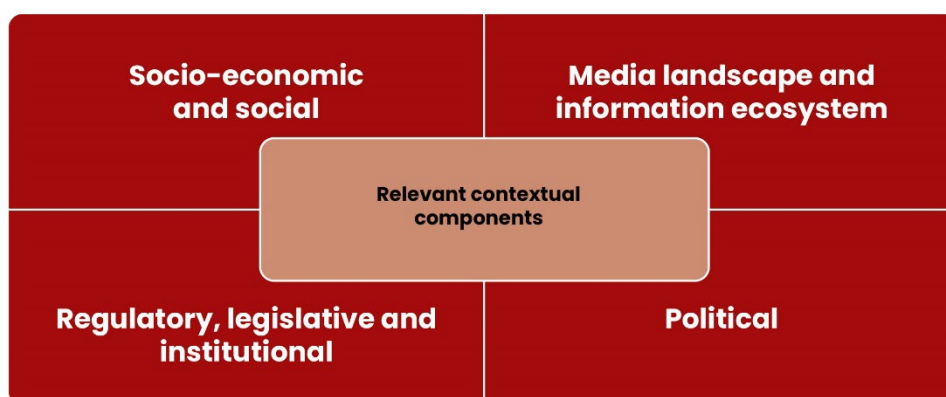
2 Analytical framework and data-collection methods

As sketched out in the conceptual framework (Section 1.2) the causes and consequences of information pollution are cyclical and mutually reinforcing. To gain an understanding of these complex relationships, this paper adapts an analytical framework originally proposed by UNDP (2022). This framework assumes that the presence of certain enabling and driving factors increases societal vulnerability towards information pollution, which, in turn, can cause adverse impacts.

Enablers are understood here as structural conditions that indirectly facilitate information pollution (UNDP 2022; Gilmore, 2013), whereas drivers are actions that directly contribute to information pollution (UNDP; 2022; Wu 2021). Vulnerability, in turn, is understood as the propensity of a society to be adversely affected. It is determined by a variety of factors that increase a society's susceptibility to be impacted by a hazard and the lack of ability to cope and adapt to this impact (see e.g. IPCC, 2001; UNISDR, 2009).

The framework further assumes that analyses aimed at detecting the enablers and drivers of information pollution and at understanding how they interact to create vulnerability need to pay special attention to four relevant contextual components: 1) the socio-economic and social context; 2) the context of the media landscape and information ecosystem; 3) the regulatory, legislative and institutional context; and 4) the political context. Figure 6 below visualises the analytical framework. Two exemplary illustrations of such potential interactions and their consequences in different environmental components are provided in Table 1.

Figure 6: Analytical framework: Identifying enablers and drivers of information pollution, and assessing the resulting vulnerabilities and impacts



Source: Author

Table 1: Illustrative example of potential enablers, drivers, vulnerabilities and impacts of information pollution in social and political contexts

Context	Enablers (indirect structural conditions)	Drivers (direct actions)	Vulnerabilities	Impact of information pollution
Socio-economic & social context	Existence of inter-group tensions	Divisive narratives around vulnerable groups (e.g. migrants)	Reinforcement of stereotypes and prejudices	Degradation of horizontal social cohesion
Political context	Prevalence of identity-based politics	Engagement of state or political actors in dissemination of disinformation	Reduced public trust in political actors and institutions	Delegitimisation of democratic processes

Source: Author

The framework proposed by UNDP identifies potential enablers and drivers that may be contained in the four contextual components. It also lists the potential resulting vulnerabilities towards and impacts of information pollution. However, which factors are actually present and how they interact is highly dependent on national contexts. Understanding these complex interactions is important for the identification of entry points and the design of effective interventions to effectively address information pollution in a given country context.

For this purpose, in an initial desk-research phase, the framework was adapted by complementing enabling and driving factors whose existence appeared likely in the Mexican context.⁴ On this basis, four different guidelines for semi-structured interviews were prepared for experts on and from each of the four contextual components. Interview questionnaires were designed to enquire about the presence of these factors as well as the assessment of their consequences. Furthermore, experts were asked to provide concrete empirical examples of interactions between enabling and driving factors and respective vulnerabilities.

⁴ A table containing the full list of enablers, drivers, vulnerabilities and impacts that served as the basis for the preparation of interview guidelines is given in Table A2 in the Annex.

Findings presented in this paper are based on document analysis of primary sources, in-depth review of secondary academic literature, and semi-structured interviews with expert informants. During a five-week field research stay in Mexico from January to February 2023, a total of 20 expert interviews were conducted. Interview partners included experts from academia (7), media professionals (3), members of CSOs engaged in rights to information and freedom of expression (5), civil servants working in the fields of media and transparency (3) and development cooperation practitioners (2). To ensure anonymity, interviews were numbered consecutively and cleaned of any information that could reveal the identity of interview partners. Statements based on interviews are referenced with the corresponding interview identification number in brackets. A summary overview of the interviews by actor category is given in Table A1 in the Annex.

3 Causes and consequences of information pollution in Mexico: Findings and discussion

This chapter presents the findings and discussion. While Section 3.1 provides empirical insights on the root causes of information pollution in Mexico, Section 3.2 discusses the implications of these findings for democracy and social cohesion.

3.1 Information pollution in Mexico: Enablers, drivers, and vulnerabilities

The following presentation of empirical findings is structured according to the four contextual components proposed by the analytical framework (see Section 2.2). For each component, a distinction will be made between enabling factors, driving factors and the resulting societal vulnerabilities towards information pollution.

3.1.1 Socio-economic and social context

Enablers

While the World Bank classifies Mexico as an upper middle-income country, vast social disparities continue to persist. In 2022, 36.3 per cent of the population was living in conditions of multi-dimensional poverty and 9.1 per cent in extreme poverty (CONEVAL, 2022). Development disparities clearly run along geographical lines. Of the six federal states with the highest Human Development Index (HDI) values, five are located in the north of the country and the sixth is the capital district, while the five states with the lowest values are located in the centre and south. This is also where the largest part of the country's indigenous population is concentrated, which constitutes approximately 10 per cent of the overall population. Mexico's indigenous peoples are particularly affected by poverty and social exclusion, with 65.2 per cent living in poverty and 26.3 per cent in extreme poverty (CONEVAL, 2022).

These development disparities have enabled the persistence of multiple digital gaps. According to the latest National Census on the Availability and Use of Information Technologies in Households (ENDUTIH) conducted by the National Institute of Statistics, Geography, and Informatics (INEGI), 78.6 per cent of the population aged six years and older used the internet in 2022. The largest gap in internet use is observed between different socio-economic groups, with 94.2 per cent of individuals living in high-income households being internet users compared to 83.8 per cent from upper middle-income, 80.3 per cent from lower middle-income, and only 57.8 per cent from low-income households. There are also clear differences in the number of internet users living in urban areas (83.3%) and rural areas (62.3%). By comparison the gender

gap is relatively small, with 79.3 per cent of men and 78.1 per cent of women using the internet (INEGI, 2022).

However, gaps exist not only in terms of internet access and use but also in terms of digital literacy. A 2018 OECD survey found that 39.3 per cent of Mexicans lack very basic computer skills and have low levels of proficiency in problem solving in technology-rich environments (OECD, 2018a). According to interview partners, the ability of parts of the population to find, evaluate, and communicate information by utilising digital media is considerably limited due to language barriers or low levels of education (interviews 3, 8).

In addition to the above development deficits, Mexico has long been struggling with structural and deeply entrenched problems of violent conflict, crime and corruption.

The country's conflict structure is predominantly shaped by organised crime surrounding the drug economy. The strategy pursued by Mexican governments since 2006 of militarising the fight against the drug cartels has had fatal consequences. In the course of the military offensive, the cartels increased and modernised their weapons arsenal and achieved a higher degree of professionalisation. The state has lost its monopoly on the use of force in parts of the country. In several states, the situation is approaching state failure, with drug cartels controlling the economy and politics and thus also large parts of public life. In 2022, the Secretariat of Security and Population Protection (SEGURIDAD) recorded 30,968 homicides, which is a homicide rate of 25.2 per 100,000 inhabitants. It is estimated that between 68 and 80 per cent of homicides are related to organised crime. Due to the massive escalation of violence the Mexican drug conflict is classified as "limited war" by the Heidelberg Conflict Barometer (HIK, 2023).

Furthermore, the extent of violence against women in Mexico is alarming. In 2022, 3,800 women were victims of homicide (INEGI, 2023). Of these homicides, 947 were classified as femicides (SESNS, 2023), which represents an average of 2.5 femicides per day. Women receive inadequate protection from authorities against gender-based violence. Complaints are often trivialised by male state officials, or the reporting women are discriminated against, especially if they are of indigenous origin.

This conflict matrix is completed by a complex migration dynamic. Mexico is a transit country for Central American migrants heading for the USA. El Salvador, Guatemala, Honduras and Nicaragua are among the poorest countries in the Western hemisphere. Out of 444,439 undocumented migrants registered by Mexico's migration agency in 2022, 41 per cent were from El Salvador, Guatemala, Honduras or Nicaragua (SEGOB, 2023). The Mexican territory is the most dangerous section for migrants on their way to the USA. Their transport across the border is organised by professional people-smuggling gangs, often under the control of organised crime. Between 2017 and 2021 5,245 persons were officially registered as victims of human trafficking (Kánter Coronel, 2022). Human rights organisations estimate that the number of unreported cases is significantly higher. Some of the trafficking victims are held near the US border in order to extort ransom from their families, others are forced to work for the drug cartels or engage in prostitution, and still others are subjected to forced labour on farms. Some of the abuses are also carried out by corrupt members of the Mexican migration authorities. In order to protect themselves from attacks, since the mid-2010s, Central American migrants in particular have joined together in so-called migrant caravans, which in some cases involves up to 6,000 people.

Drivers

The indirect structural conditions of conflict and violence described above are also reflected in the digital space, where they directly drive information pollution and social polarisation.

While the cartels previously used to operate in secret, they have long discovered the digital space for their purposes and weaponised social media to advertise their exploits. On the one

hand, platforms like Facebook, WhatsApp and Instagram are used by gangs and drug cartels to threaten rivals, sell drugs and contraband, coordinate violent attacks, and lure victims into dangerous and sometimes deadly situations. On the other hand, social media has become a key component of a strategy known as *narcocultura*. The term refers to the process by which people involved in the drug trade seek to increase social legitimacy and acceptance by creating a positive online counter-narrative about their activities. This narrative praises the rewards of the narco life – such as mansions, fancy cars, beautiful women and exotic animals – while projecting power and also highlighting the philanthropic deeds of cartels in areas where poverty is often widespread. According to the Alliance to Counter Crime Online (ACCO, 2023), the powerful Sinaloa cartel, for instance, has more than 100,000 Twitter followers from around the world. About one quarter of the cartel's social media output presents seductive images of gang life and another 22 per cent contains threatening messages and images of torture, mutilations and executions.

Against the background of violence and discrimination against women, over recent years the women's rights movement in Mexico has grown in significance and has turned into one of the most important grassroots movements. However, in a country where the culture of *machismo*, which glorifies male supremacy, remains deeply rooted in significant parts of the population, feminism also faces resistance. Women's rights activists and journalists are frequently targeted in sexist defamation and insult campaigns. In 2021, Amnesty International reported several cases of excessive use of force and sexual violence by security forces against participants in women's rights demonstrations (Amnesty International, 2021). Female protesters are also often accused of senseless vandalism and are discursively associated with fascism in social media, for example by the use of the hashtag *#feminazis* (Salas Siguenza, 2021).

Information pollution also plays multiple roles in the context of transmigration. On the one hand, migrants frequently fall victim to fraudulent individuals who spread disinformation and prey on the vulnerable. The scammers range from human traffickers (so called *coyotes*) to social media influencers, who pose as work recruiters, legal advisors or immigration coaches, and trick migrants into paying for fake legal advice, work visas, political asylum or alternative ways to cross the US–Mexico border. In a survey of 210 migrants conducted by the Mexican CSO Conexión Migrante in 2023, two thirds of respondents reported having fallen victim to some sort of fraud or disinformation circulated on Facebook or in WhatsApp groups (Spinardi et al., 2023). On the other hand, disinformation about migrants, particularly participants in the migrant caravans, abounds in digital media. Narratives on social media frequently contend that the caravans contain dangerous criminals and terrorists. These narratives have contributed to fuelling anti-migrant sentiment in the Mexican population, which has escalated into physical violence against migrants – including lynchings – on various occasions in the past (Ward & Beyer, 2019; Zizumbo-Colunga & del Pilar Fuerte-Celis, 2020).

Vulnerabilities

The enabling structural conditions – socio-economic and digital development disparities, the war on drugs and gender-based violence – and their online ramifications result in a specific vulnerability of Mexican society toward information pollution. Since Mexico's democratic transition in 2000, no government has succeeded in significantly reducing poverty and inequality, violence and systemic corruption. This inability has led to the formation of an anti-elite sentiment in Mexican society that, according to interview partners, constitutes a grievance that is widely shared across different social classes (interviews 11, 12). This perception is supported by results from the recent Edelman Trust Barometer survey (2023), in which 59 per cent of respondents expressed the view that “the rich and powerful” are a “divisive force that pushes people apart”. Such grievances can easily be used by leaders with illiberal intentions who exploit it for political purposes. The chance that disinformation disseminated for these purposes in digital media will be taken at face value and sway people's opinion is even greater

in a situation where important parts of the population have low digital literacy and ability to verify information.

3.1.2 Media landscape and information ecosystem context

Enablers

Media pluralism is an essential pillar of the right to information and freedom of expression, and is of paramount importance in a healthy and informed democratic society. In the course of the democratic transition in 2000, and further spurred by the emergence of numerous digital media outlets with the advent of the internet, the Mexican media landscape has become more diverse over the past two decades. In particular, the establishment of a large number of local and indigenous radio stations has led to a greater plurality of opinions than at the start of the millennium. Nevertheless, the Mexican media system continues to be highly concentrated to date. This is especially true for the television sector, where only two media organisations – Televisa and TV Azteca – own almost all TV stations. Similarly, in the radio sector many radio stations belong to a few companies that enjoy oligopoly status and follow very similar editorial lines. Consequently, increased media plurality has not led to true information plurality (interviews 10, 17). At the same time, transparency in media ownership is low. According to one of our interview partners, the regulatory authority in charge of issuing broadcasting licences (Federal Institute of Telecommunications, IFT) intentionally creates opacity regarding ownership structures:

By law we are obliged to have a public registry of concessions precisely to make media ownership transparent. But the IFT provides this [information] on its website in a way that makes it an impossible mission to understand who owns what and which economic interest group manages how many stations. (Interview 10)

By and large, the measures imposed by the IFT have not succeeded in decreasing the control over media by the main operators. On the contrary, concentration levels have even increased in some market segments, such as pay television (Interviews 10, 17; GMR, 2018)

Information plurality and media neutrality are further constrained by favouritism and the entanglement between media and politics. Mexican media organisations gain substantial revenues from government advertising and are highly dependent on it (interviews 10, 17). An analysis conducted by the Global Media Registry in 2018 found that although more than 1,000 companies competed for these advertising funds, half of the amount was allocated to only 10 business groups. Grupo Televisa alone received 17 per cent of the total, and TV Azteca 9.8 per cent, followed by the newspaper *El Universal* (2.7%) and the radio network Grupo Fórmula (2.7%). By contrast, the online media outlets with the largest audience reach, such as Aristegui Noticias and Animal Político, received only very small amounts of government advertising for being perceived as government critics (interviews 10, 17; GMR, 2018). It is also common for broadcast concessionaires to serve in the legislature. This is notably evident in the participation of prominent executives from the two leading television corporations, in both Senate and Chamber of Deputies. Some of these executives were even appointed to media-relevant parliamentary committees, such as the committee on “Communication and Transport” or the committee on “Radio, Television, and Cinematography”. They represent the interests of the Mexican media moguls and are referred to as *telebancada* (television bench).

Regarding the quality of journalism in general, interview partners note that, as elsewhere in the world, it has been negatively affected by digitalisation to some extent. According to their observation, even the digital news publications of long-established and well-reputed journalistic outlets do not escape the sensationalist logic of the business model of internet publishing. As one interviewee observes:

[In Mexico] we are dealing with a redesign of the information ecosystem to the extent that, perhaps, we can no longer even call it an information ecosystem [...] I would say that all national newspapers are part of this process. With digitalisation, even the quality of prestigious newspapers and radio stations has decayed. They still maintain a print version that is more informative than propagandistic, but their digital version usually operates in a different way and is deteriorating year by year. (Interview 8)

Furthermore, Mexico's indigenous peoples are marginalised in the information system. As is the case in many post-colonial societies, ethno-linguistic discrimination remains widespread (e.g. Cruz, 2019; Olko et al., 2023). Mainstream media cater almost exclusively for the dominant Spanish-speaking *mestizo* audience, and important government information is disseminated primarily in Spanish (Interview 14).

Drivers

While political entanglement indirectly fosters media self-censorship and thus constrains freedom of expression, structural violence in Mexico poses a direct and imminent threat to press freedom. Media professionals who report on drug-related crime and corruption have long been at particular risk. In recent years, the situation has deteriorated dramatically. According to Reporters without Borders in 2022, 11 reporters were killed in Mexico, making it the most dangerous country in the world for journalists (Reuters, 2022). For the same year, the human rights organisation Article 19 recorded a total of 696 attacks against media professionals, including illegitimate use of public power, physical attacks, harassment and stigmatisation (Article 19, 2023).

A concern raised by all interviewees in this study is the strained relationship of President Andrés Manuel López Obrador with the press. During his morning press conference, known as *mañanera*, the President frequently dismisses legitimate questions or fact-based criticism by journalists as “fake news”, and accuses media outlets with a critical stance against his administration as corrupt and as being paid to orchestrate disinformation campaigns against him (e.g. Casasola, 2019; López Obrador, 2020).

According to Freedom House (2023), coordinated pro-government networks have been found to manipulate online discussion in favour of AMLO, and to attack his political opponents. Scientific network analysis of social media data shows that the President's verbal attacks on journalists are amplified through social media (e.g. Signalab, 2022). Networks of bots, trolls and fake accounts launch targeted cyber-attacks against critical media professionals, discrediting them with hashtags such as *#PrensaSicaria* (murderous press) or *#PrensaProstituta* (prostituted press). An investigation by the Western Institute of Technology and Higher Education (Signalab, 2020) suggests that the state news agency Notimex has been involved in such campaigns, which on several occasions have escalated into physical attacks on journalists in the streets (see e.g. Regidor & Melesio, 2021). While anti-press violence in Mexico has been high under previous administrations, no visible effort is currently being made by the government to reduce it. On the contrary, as one interviewee points out: “The President's discourse generates an even more permissive environment” (Interview 18).

Vulnerabilities

Limited information plurality and media neutrality, a decreasing quality of journalism, and the marginalisation of the indigenous peoples as enablers in the information ecosystem, as well as violence and a media-hostile political environment as drivers that severely limit press freedom, result in a specific vulnerability of Mexican society toward information pollution. Attacks on journalists contribute to a climate of self-censorship that negatively affects the right to receive diverse and reliable information. Combined with a political discourse that discredits the remaining critical news media, this has led to a reduced trust of the population in mainstream

news and information whereby many citizens no longer perceive media professionals as neutral and reliable reporters (interviews 10, 17). As a consequence, Mexicans increasingly rely on social media, groups in messaging apps and digital platforms for news and information. According to the latest Reuters Digital News Report, social media use slightly exceeds the use of television and more than doubles the use of print media for news consumption, and 34 per cent of Mexicans share news via messaging or email (Reuters, 2022). The increasing reliance on social media such as Facebook, Twitter and YouTube is also reflected in the latest National Survey on Civic Culture (INEGI, 2020). When asked about their preferred sources to learn about issues of national relevance, 44.7 per cent of participants indicated social media, compared with 21.9 per cent who indicated radio, and only 9.6 per cent who indicated print media.

3.1.3 Regulatory, legislative and institutional context

Enablers

National information ecosystems are crucially shaped by legal and institutional settings that aim to facilitate the transparency of public information and to counter information pollution.

In Mexico, to date, regulatory authority over digital communication market remains disputed. A natural candidate to be in charge would be the Federal Telecommunications Institute (IFT), which is responsible for the telecommunications and broadcasting sector. However, the Federal Economic Competition Commission (COFEC), a competition oversight authority with the constitutional mandate to safeguard the competitive process in all markets of the Mexican economy, also claims jurisdiction over digital markets. The rivalry between IFT and COFEC has created grey areas in the regulation of digital markets (OECD, 2022). Furthermore, in Mexico, currently no specific laws exist to regulate content on digital platforms (e.g. Schneider, 2022; ECIJA, 2021). On the contrary, the 2014 Federal Telecommunications and Broadcasting Law (DOF, 2014) prohibits internet service providers from proactively obstructing or filtering content. However, since 2020, the amended Federal Copyright Law (DOF, 2020) provides that internet service providers “may” actively monitor content that is contrary to human dignity, affects rights and freedoms or encourages violence or crime.

In the absence of specific legislation and clear institutional responsibility to counter disinformation, when asked about policies, legislation and institutions that impact the integrity of information in Mexico, interview partners mainly referred to issues pertaining to the area of proactive and reactive government transparency.

With regard to ensuring proactive transparency through the provision of Open Government Data (OGD), there appears to be significant room for improvement in Mexico. In the opinion of interviewees, political interest in the topic is rather low. The government of López Obrador only presented a national digital strategy (Estrategía Nacional Digital, EDN) three years after he took office (DOF, 2021). The EDN is oriented toward the national development goal of reducing poverty and inequality and therefore focuses mainly on closing digital gaps in internet access. The topic of OGD, on the other hand, is treated only marginally in the EDN. Critics fault the document primarily for its failure to define clear goals and measurable and verifiable indicators. According to some, in its current form the EDN appears rather as a collection of good intentions, which implies a certain ignorance of the ICT sector and is not a suitable basis on which to develop a clear work plan to address existing deficiencies (e.g. Covarrubias, 2021; González, 2021). Interviewees were also critical that the form in which OGD are published often does not correspond to good standards of open government data (see Open Government Working Group, 2007) such as completeness, timeliness and machine readability. Several interviewees attributed these deficits to a general lack of data culture in the public sector (interviews 2, 4, 5, 7). However, there are also commendable exceptions in the field of OGD. In the area of budget transparency, for example, Mexico scored 82 out of 100 points in the Open Budget Survey conducted by the

International Budget Partnership (IBP, 2021), which places the country above the global average of 45 points, and the OEDD average of 67 points. In addition, over the past decade, public interest in the topic of OGD has grown. At the urging of civil society organisations, Mexico joined the Global Open Government Alliance of the Open Government Partnership in 2011. The national Coordinating Committee of the Open Government Alliance (Alianza por el Gobierno Abierto) is a multi-stakeholder group composed of the Government of Mexico, represented by the Ministry of Public Administration, the National Institute for Transparency, Access to Information and Protection of Personal Data (INAI) and several civil society organisations (Alianza por el Gobierno Abierto, n.d.)

In the area of reactive transparency, Mexico is a global forerunner as far as the legal basis is concerned. Mexico's ATI law the "General Act of Transparency and Access to Public Information" dates back to 2002. Having undergone a considerable reform in 2014 (DOF, 2016), in 2016 the law obtained 136 out of a possible 150 points of the Global Right to Information (RTI) rating, which put it in first place out of the 112 national ATI laws analysed in that year (Center for Law and Democracy, 2016). The law establishes the rules and procedures to guarantee the right of access to information in possession of public enterprises, as well as autonomous bodies, trusts and public funds, and any other person or organisation that receives or spends public resources or perform acts of authority. The national authority in charge of implementing the law, the National Institute for Transparency, Access to Information and Personal Data Protection (INAI) is a constitutionally guaranteed collegiate body, which is presided over by seven senate-appointed commissioners and is autonomous in its operation, budget and decision-making. Among INAI's most important tasks is the operation of the National Transparency Platform (Plataforma Nacional de Transparencia), which allows uniform access to public information across Mexico. Theoretically, the platform enables any person with internet access to obtain basic government information that is available on the platform, or to request data that is not yet available free of cost. Citizens who submit a request can even appeal to the INAI when their requests are not met or when the information provided does not correspond with their requests. However, the INAI also struggles with enforcement on both the federal and state levels in its day-to-day activities. One of the institute's biggest challenges in operating the platform is to ensure the interconnectedness and interoperability of data-exchange formats of the more than 8,000 obligated parties (interviews 4 and 7). Another frequently expressed criticism of the platform refers to its lack of user friendliness. As one interviewee put it:

As far as I can see, there is a lot of disorganisation of information and [the platform] is difficult to navigate. I have noticed that specialised knowledge is required to navigate the large amount of data. So, I'm not sure that [the platform] does much to improve processes. (Interview 12)

Interviewees assumed that the platform is used more by academics and journalists than by lay citizens (Interviews 4, 5, 7, 8). This assumption is supported by the user statistics of the platform published in INAI's annual reports. In 2022, the platform received over 300,000 requests. Out of these, 56.6 per cent were submitted by people with a master's degree and 26.6 per cent by people with a higher post-graduate degree, whereas people who only completed secondary school accounted for 1.8 per cent of the platform's users, and persons who only completed primary school 0.5 per cent. There is also a considerable gender gap (INAI, 2023) among users of the platform, with 38.5 per cent female and 61.5 per cent male.

Another concern shared by several interviewees is that the information requests channelled through the platform generate an additional administrative workload that exceeds the capacities of many public entities. Officials have to handle the response to these requests in addition to their ordinary duties, often without receiving additional time, remuneration or specific training for this task. According to one interviewee, this poses a problem in particular for public-service-oriented sectors such as education and health:

Doctors, teachers, professors [...] they are “doers”. They come to work and they perform. But they have neither the time, nor the habit, nor the incentive to write their own records. They are not people who have that administrative tradition. So the most opaque sectors are [health and education], but they do have a justification. (Interview 7)

Overall, it can be stated that the Mexican legal framework concerning access to information clearly focuses more strongly on reactive than on proactive transparency. In the words of one interviewee:

In the Mexican legal framework [...] transparency is understood as “if you actively ask for the information, I will give it to you”. In other words, there has to be an action on behalf of the citizen to obtain the information [...] I am very much against this type of transparency, because in the end: if information is public, then it should be out there and it should be accessible. (Interview 5)

Drivers

In addition to the above enabling factors, a driver that directly jeopardises transparency and information integrity in Mexico is the difficult relationship between the INAI and the government. Since the beginning of his administration in 2018, President López Obrador has argued that the existence of the INAI – as well as other autonomous bodies such as the National Electoral Institute (INE) and the Federal Telecommunications Institute (IFT) – is putting an unnecessary strain on the national budget. Between 2018 and 2022, the budget of INAI was cut by 16.9 per cent. In the President’s opinion, the work of these bodies is ineffective and duplicates the functions of the federal government’s own agencies. In his morning press conferences, he has therefore repeatedly announced administrative reforms to abolish some of the independent bodies and integrate them into agencies of the government. Among the proposed options was to transfer the functions of the INAI to the Federal Supreme Audit Office (ASF) and the functions of the IFT to the Ministry of Communications and Transport (SCT) (e.g. Forbes, 2021; Sheridan, 2021; López Obrador, 2023). In 2023, the absence of a quorum in the plenary forced the INAI to suspend its sessions for five months, since the appointment of the institution’s commissioners by the Senate was blocked by the government party MORENA (Freedom House, 2023; García, 2023). The critical attitude of the government towards the INAI contrasts starkly with its positive assessment by the experts interviewed in this study. The majority of interviewees assessed the creation of checks and balances on the executive through autonomous bodies as a major achievement of Mexico’s democratisation. In their view, initiatives by the government to restrict the operational capacity of these bodies represent worrying attempts to concentrate power in the executive. They also pointed to the important role of the INAI in exposing various high profile corruption cases in the past and argued that journalists using freedom of information requests have made the Mexican public more aware of corruption in general (interviews 2, 3, 6, 11, 15).

Another critical development with the potential to drive information pollution are several legislative initiatives promoted by the ruling MORENA party. Two proposals made in 2021 to amend the Federal Telecommunications and Broadcasting Law sought to vastly expand the powers of the IFT in the areas of content moderation, user speech rights and licensing of social network operators (Chacón, 2021). A 2023 attempt to create a Federal Cybersecurity Law, in turn contained several potentially problematic provisions for content regulation, the criminalisation of online expression, and user privacy (Freedom House, 2023). Interview partners considered these initiatives as direct attacks on the right to freedom of expression and net neutrality (Interviews 9, 16).

Vulnerabilities

The enablers and drivers in the regulatory, legislative and institutional context presented above give rise to information pollution.

In the absence of legislation to regulate online content, the combat of information pollution in Mexico is thus far mainly left to the operators of digital platforms, who self-regulate through community standards and terms of use (Giardini & Pierotic, 2023; Schneider, 2022). Meta's Facebook, for example, voluntarily operates with fact-checking partners, which in the case of Mexico include the global news agencies, Agence France-Presse (AFP) and Reuters, as well as the digital news magazine Animal Político (Meta, 2023). However, reliable data on the extent to which platform operators actually comply with these voluntary commitments in Mexico is not available. According to the assessment of interview partners, these self-regulatory activities are rather limited (Interviews 6, 10, 15, 17). Given the lack of hard legal incentives for internet companies to curb information pollution, there is a high risk that ill-intentioned actors continue to spread malinformation and disinformation for economic, political or ideological gains.

The described shortcomings in the proactive and reactive provision of public information make it difficult for both journalists and ordinary citizens to identify and debunk such disinformation by contrasting it with high-quality official data.

Furthermore, the observed attempts to curtail the right to information pose a potential risk. If successful, the legislation resulting from such attempts could restrict the civic space and limit information plurality through the repression of dissenting voices.

3.1.4 Political context

Information pollution is often a game of power and influence, as malinformation and disinformation frequently serve political aims. While the socio-economic and media contexts, as well as the legislative-institutional setting discussed in the previous sections, all play an important role, information pollution in Mexico is currently most critically enabled and driven by the political context.

Enablers

The trust of Mexican citizens in political institutions has traditionally been low. Persisting poverty, the precarious security situation, and the entanglement of political actors with organised crime have severely damaged the reputation of political institutions.

The population's perception of state corruption is high. In 2022, Mexico was ranked 126 out of 180 countries on the corruption perception index of Transparency International (Transparency International, 2023). According to the latest Latinobarómetro survey (2023), the proportion of the population that trusts in the Government (38%), Congress (31%) and political parties (24%) is considerably lower than the proportion that trusts in non-political institutions such as the armed forces (58%) or the church (61%).

By contrast, the head of state enjoys high and rising popularity. Despite his administration's disappointing record in reducing poverty and corruption so far, in the latest national census (INEGI, 2023) 68 per cent of respondents stated that they trusted President López Obrador "somewhat" to "strongly". This development is in part attributable to the personalised approach to political representation of the President. López Obrador's presidential candidacy heavily relied on an "us against them" rhetoric, which positioned him against the political establishment (Beltrán, Ley, & Castro Cornejo, 2020; Castro Cornejo, 2022). Empirical studies show that his electoral victory in 2018 was largely driven by "affective polarisation", a term that describes a tendency to view co-partisans positively and opposing partisans negatively (Iyengar, Sood, & Lelkes,

2012; Mason, 2018) and in which polarisation is not primarily rooted in political ideology but in identity and a feeling of belonging.

Affective polarisation is further driven by a simplistic populist rhetoric in which the President pitches his supporters, to whom he often refers as *el pueblo sabio* (the wise people), against his opponents, all of whom he assigns to the so-called “conservative bloc” (Monsiváis Carrillo, 2023; Dresser, 2022; Villanueva Ulfsgard, 2023). One interview partner summarises this charismatic populist leadership style as follows:

People accept him because they think of him as a good person, but they don't link this to his government's performance. [He] is present everywhere, almost inescapable. It's a constant effort of self-promotion [...] he never accepts that he's wrong, he always criticises, but he doesn't use arguments, only disqualifications. And I think that's part of what explains his popularity: his omnipresence and his simplistic style – that's basically it.” (Interview, 12)

Drivers

In Mexico, orchestrated disinformation campaigns emanating from the political sector are by no means a new phenomenon. Online disinformation campaigns have been regularly deployed during elections since at least 2012, with candidates using bots and paid trolls to improve their standing and damage their rivals' reputation (Valenzuela et al., 2022; Bravo Regidor & Melesio, 2021).

However, besides an enabling climate of social and political polarisation, information pollution in Mexico is currently directly driven by post-factual politics, in which political discourse, opinions, and decisions rely more on strategically crafted narratives and emotional appeals rather than factual evidence or reasoned debate. President López Obrador has been criticised for routinely and categorically rejecting criticism of his administration's performance, even when it is backed by data from official sources. In doing so, he frequently argues either that the interpretation of these data is distorted or wrong, or he points to “other data” that are allegedly available to him (interviews 1, 2, 3, 18, 19, 20). This habit has been mocked in Mexican social media with the viral hashtag and meme *#YoTengoOtrosDatos* (I have other data).

The government has also been found to actively engage in the dissemination of malinformation and disinformation via different platforms. One of them is the InfodemiaMX project of the Mexican State Broadcasting System (Sistema Público de Radiodifusión, SPR), which is present on social networks, radio and television and is allegedly dedicated to fact-checking on current national and international affairs. Another is a weekly segment of the Presidential morning press conference entitled “*quien es quien en las mentiras*” (who is who in lies) that attacks journalists who have published news that the government considers false or manipulated. While both platforms claim to combat false publications, a review of their content by a cross-national journalistic alliance coordinated by the Latin American Center for Investigative Journalism, confirmed that they often disinform or manipulate facts in favour of the government and the ruling party (CLIP, 2023). Against the background of increasing violence against journalists in February 2022, the Special Rapporteur for Freedom of Expression of the Inter-American Commission on Human Rights, urged López Obrador to suspend the “who is who in lies” segment, which he criticised as “totally foreign to democratic standards of freedom of expression” (Barragán, 2022).

A further factor driving information pollution is restrictions imposed by the government on access to important areas of public information (interviews 1, 2, 3, 4, 5, 6, 11, 14). Experts interviewed in this study indicated, in particular, national security and social transfer programmes as lacking in transparency. Another particularly opaque area is the government's infrastructural mega-projects such as the touristic railway project Tren Maya and the new international airport of Mexico City. Parts of the implementation of these projects have been transferred to the armed

forces, and the government regularly refuses requests for information on these projects, claiming that they affect national security (e.g. Navarro, 2023). In 2022, 3,850 information requests to the National Transparency Platform were denied on the grounds that the requested information was reserved or confidential (INAI, 2023).

Where official information is lacking, journalists and activists seek to complement and contrast government data. Numerous CSOs in Mexico engage in critical data journalism. Examples include the journalistic think tanks Data Crítica and México Evalúa, and CSOs that advocate for the right to freedom of expression and access to information, such as Artículo 19, SocialTic and R3D. Besides fact-checking and exposing cases of disinformation, these organisations have in the past also made significant efforts to relay reliable information to digitally lagging groups in times of crisis, for example in the aftermath of the earthquake that shook Mexico City in September 2017, as well as in the context of the COVID-19 pandemic. Furthermore, feminist CSOs such as Data Cívica, Intersecta or Gire dedicate part of their work to understanding femicides, while other CSOs such as Mexicanos Contra la Corrupción y Impunidad (MCCI) focus on exposing crime and corruption. However, the relationship between critical journalists and human rights organisations and the government has been traditionally precarious in Mexico. In 2017, the Pegasus scandal revealed that over the course of a decade Mexico spent more than USD 160 million on counterterrorism spyware in order to monitor journalists, activists, and government critics (e.g. Asher-Schapiro & Murray, 2021). While López Obrador officially denied repeatedly that digital surveillance was continued under his government, the investigative project EjércitoEspía, coordinated by several CSOs and media outlets, documented several cases of the military use of Pegasus for the surveillance of journalists and activists between 2019 and 2021.

Furthermore, since the federal government's strict austerity policy has cut all funding to CSOs (BTI, 2022b), many of them rely on foreign funding for their survival. López Obrador has repeatedly used this as an opportunity to discredit CSOs that are critical of his government as agents of "US imperialism". In May 2023, the President sent a letter to his US counterpart, President Biden, asking him to refrain from interfering in the country's sovereign affairs and to stop interventionism in the form of payments from the United States Agency for International Development (USAID) to CSOs such as Artículo 19 and MCCI.

Vulnerabilities

While previous governments' relations with the media and activists were already difficult, they have further deteriorated under the administration López Obrador. This has increased the vulnerability of Mexican society towards information pollution in several ways.

The repression of media and civic watchdogs, whether through verbal attacks or the withdrawal of financial resources, poses the risk of shrinking civic spaces and the silencing of dissenting voices, which, in turn, threatens information plurality. Such repression also damages the trust relation between the state and civil society, thus reducing the likelihood of vertical citizen–state cooperation. In Mexico, a concrete example of this was the decision of CSOs to end their cooperation with the government in the context of the multi-actor partnership Open Government Alliance, after the continued digital surveillance of journalists and activists with Pegasus spyware had been exposed (Equis Justicia, 2022).

Furthermore, the strategy of routinely discrediting and delegitimising critical media can reduce citizens' trust in the news media in general. The trends referred to in Section 3.1.2 on the media landscape indicate that such a development is already underway in Mexico. More critically, the government's post-factual approach to reality and politics is not only damaging the reputation of the media but may negatively affect the ability of citizens to trust in data and facts in general. One interviewee expressed this concern as follows:

I think that to some extent people are so polarised that they have become somehow immune to data and [their decision to] distrust or trust in data mainly depends on the messenger who is providing the information. (Interview 2)

3.2 Implications of information pollution for social cohesion and democracy in Mexico

Literature contends that information pollution implies substantial threats to social cohesion and democracy and has identified digital disinformation, toxic levels of social polarisation, and autocratisation as global and mutually reinforcing trends (e.g. Lorenz-Spreen, et al., 2022; González-Bailón & Lelkes, 2022; Tucker et al., 2018; Kubin & Sikorski, 2021; V-Dem, 2023). Against this background, using the case of Mexico, this study set out to gain a better understanding of the specific factors that contribute to the vulnerability of societies towards information pollution, and of the implications of information pollution for social cohesion and democracy.

Empirical findings presented in this study show that in Mexico, in all contextual areas that are of particular relevance for equal access to integer public information – i.e. the social, the media, the legislative-institutional and the political context – enabling and driving factors exist that lead to an increased vulnerability to information pollution. These vulnerabilities particularly jeopardise the sustenance of a shared inclusive national identity and state–citizen cooperation as core elements of social cohesion. They also pose a threat to the deliberative, liberal and participatory dimensions of democracy. The following sections will discuss these risks in more detail.

3.2.1 Implications for social cohesion

There is scholarly consensus that trust, an inclusive identity and cooperation for the common good constitute the core dimensions of social cohesion (Leininger et al., 2021). Findings of this study indicate that in Mexico all three of these dimensions are threatened by information pollution.

As shown in Section 3.1.2 on the media landscape, trust in news media in Mexico has been declining for years, and Mexicans nowadays increasingly rely on social media, groups in messaging apps, and digital platforms for news and information. Admittedly, this is a trend that has been observed worldwide as digitalisation has increased, and clear proof of a causal connection is difficult and highly context-dependent. In the case of Mexico, experts interviewed for this study see this development as partly facilitated by the current government’s strategy to discredit and delegitimise critical media. Survey data reflect that there are strongly polarised views among the population regarding which party can be trusted as a provider of information, yet news media still outperform the government in this regard. In 2023, 55 per cent viewed the government as a “source of false or deceptive information”, while 41 per cent considered this statement to be true for news media. In contrast, 32 per cent considered the government a “source of reliable information”, while 42 per cent found this to be true for the news media (Edelman Trust Barometer, 2023).

The increasing reliance on social media for news consumption also implies negative effects on a shared national identity as citizens increasingly obtain important information concerning public life via digital echo chambers. Social media studies show that information circulating among like-minded members of such echo chambers and appealing to identity-based grievances have the potential to solidify viewpoints and thereby create a self-reinforcing mechanism that moves the entire group towards more extreme positions (González-Bailón & Lelkes, 2022). Given their potential to act as catalysts of social polarisation, digital echo chambers have been pointedly

described as the “trenches in which culture wars are fought as people enlist in identity-based controversies” (Díaz Ruíz & Nilsson, 2023; p. 21).

Further, as shown in Section 3.1.1 on the social context, in Mexico such identity-based “us versus them” controversies, fuelled by digital disinformation, frequently target migrants and feminist activists.

As shown in Section 3.1.4, information pollution arising from the political context also primarily threatens the identity dimension of social cohesion. Specifically, the existing divisive populist government discourse pits the imaginary in-group of “wise people” against the out-group of a constructed “neoliberal conservative bloc”. Studies have shown that the government also uses orchestrated digital disinformation campaigns to spread this narrative (Signalab, 2022; Signalab, 2020). This fosters a climate of affective social polarisation that threatens the sustenance of a shared national identity. One example of such a divisive narrative is the President’s framing of long-established CSOs who are committed to freedom of expression and access to information and who had critically monitored and reported on previous governments as paid agents of the US American government and corporate interests and belonging to “the conservative movement that is against us” (López Obrador, 2021).

As for willingness to cooperate, the third pillar of social cohesion, this study finds no conclusive evidence that information pollution has damaged the willingness of citizens to cooperate with each other for the common good. On the contrary, anecdotal evidence suggests that there continues to be willingness to participate in associational life. One example of this is the efforts of CSO to compensate for government deficits, for example by facilitating access to public information for socially disadvantaged groups in the context of the COVID-19 pandemic and the 2017 earthquake. Another example is the efforts of CSO to collect and curate data to compensate for lack of transparency in important areas of public life, such as violence against women or grand corruption schemes involving high-level politicians. Despite a deteriorating participatory CSO environment, many citizens in Mexico continue to be engaged in organisations that dedicate their work to freedom of expression and access to information.

Finally, the study has found evidence that state-sponsored disinformation and the resulting reduced trust in state actors have damaged the willingness to engage in vertical state–citizen cooperation. One example is the decision of CSOs to discontinue cooperation with government institutions within the framework of the multi-actor partnership Open Government Alliance. The decisive factor for this decision was the refutation of the statement of President López Obrador that the government had stopped monitoring journalists and activists.

3.2.2 Implications for democracy

The deliberative dimension of democracy critically depends on respect for opposition and counterarguments, as well as the pluralism of opinions. Limited information plurality and media neutrality, as well as structural violent conflict have long posed serious limitations on the freedom of press and expression in Mexico. As this study shows, more recently this situation has been aggravated by an increasingly media-hostile political environment in which journalist and activist voices that are critical of the government are routinely delegitimised and discredited, which in turn poses the risk of a general degradation of the public debate.

The existence of an enabling environment for CSOs that engage in protecting fundamental civil liberties such as the rights to information and freedom of expression is important for both the participatory and the liberal dimension of democracy. Findings of this study indicate a precarious situation in this regard. On the one hand, due to the discontinuation of state funding of CSOs under the pretext of necessary austerity measures, the Mexican CSO participatory environment in general has deteriorated under the current administration. On the other hand, those CSOs

that perform government watchdog functions by fact-checking official information suffered reputational damage from being framed as “agents of foreign interests” by the government.

Furthermore, the transparency of government action and the availability of data on government performance are key prerequisites for citizens to be able to hold their governments accountable through elections. This study has shown that serious deficits exist in this regard. On the one hand, access to important public areas, including national security, social policy and important infrastructure projects, has been increasingly restricted by the government. On the other hand, the government itself has been found to actively engage in the dissemination of malinformation and disinformation on digital media on several occasions. Theoretically, Mexico’s General Act of Transparency and Access to Public Information constitutes an excellent legal basis on which to counter such deficits. However, the practical implementation of this legislation is apparently constrained by several factors. Limiting factors particularly emphasised by interview partners in this study are the absence of a supporting “administrative transparency infrastructure” and insufficient human and capacity resources in many public entities, as well as a general lack of data culture in the public sector as a whole. In this regard, the strained relationship between the government and the INAI, the autonomous agency responsible for the implementation of transparency and ATI legislation, is particularly problematic. The 2014 General Transparency Law created the INAI⁵ and made its resolutions legally binding. Prior to this, journalists, activists, and citizens had no recourse when the government denied them access to basic public information they needed in order to reveal abusive practices. Eliminating this independent body and transferring its functions to entities that report to the executive, as has been repeatedly proposed by President Lopez Obrador, would be a serious setback for government accountability.

In addition, trust in political institutions has been traditionally low in Mexico owing to the inability of all democratically elected governments so far to significantly alleviate socio-economic development deficits, as well as the persistence of corruption and the entanglement of political actors with organised crime. An exception to this is the figure of the President, who has managed to exploit existing grievances and related anti-elite sentiments for his political project through a simplistic, divisive, populist discourse that drives political affective polarisation. By contrast, support for democracy has decreased alarmingly under the current administration. In 2020, 43 per cent of Mexicans still considered democracy the best form of government, only 35 per cent did so in 2023 (Latinobarómetro). A situation in which important segments of the population place higher trust in the transformational power of a strong leader than in the institution of democracy clearly implies a heightened risk of autocratisation and democratic backsliding. In the longer run, it may also have negative repercussions on citizen trust in state institutions, i.e. the horizontal dimension of trust, which is a key element of social cohesion.

Interview partners further expressed concern about an increasingly post-factual style of politics in which the government of López Obrador uses digital media to spread malinformation and disinformation about both its opponents and its own performance. In a situation in which important segments of the population have inadequate means to verify and identify digital disinformation, this poses a threat to truth as the necessary basis for valid democratic policy decisions.

Summing up, this study found that information pollution in Mexico primarily threatens the liberal, participatory, and deliberative dimension of democracy. However, it did not produce evidence on whether, how, and to what degree information pollution affects the work and legitimacy of key political institutions such as parliament and the judiciary. Given that the survival of democracy critically depends on the ability of these institutions to exercise checks and balances on the executive, future research should pay close heed to this question.

5 The INAI’s predecessor, the Federal Institute for Access to Information (IFAI), created in 2002, had considerably less autonomy and fewer competences.

4 Conclusions and policy recommendations

This study has found that in the social, media, legislative-institutional and political contextual areas in Mexico, which are of particular relevance to equality of access to public information, there are enabling and driving factors that lead to an increased vulnerability towards information pollution. This poses a threat to democracy and social cohesion.

Based on these findings, this section formulates recommendations for policy measures that appear particularly suitable in the Mexican context. Furthermore, it discusses implications for international efforts to protect democracy and social cohesion against the perils of information pollution that can be derived from the Mexican case.

Strengthening public resilience to information pollution is a long-term outcome that should enjoy high priority in the Mexican context. Although social media plays a crucial role in the dissemination of disinformation, the focus of countermeasures should be expanded to consider the wider media ecology and individual traits of media users, rather than adopting a social-mediacentric approach. Such measures should also consider the way in which information pollution travels from online to offline spaces and vice versa.

This study has pointed out that socio-economic development disparities, educational backlog and language barriers have led to the persistence of pronounced digital gaps in Mexico. While the current National Digital Strategy focuses on closing gaps in access to internet infrastructure, more attention should be dedicated to closing gaps in information literacy. This is also suggested by prior research in Mexico that found belief in political disinformation of individuals to be less strongly related to the time they spend on social media and more strongly to lower levels of information literacy and digital skills, and the absence of the habit of discussing politics with others (Valenzuela et al., 2022). Civic education and information literacy campaigns tailored to the needs of young people with lower educational attainment thus seem particularly suited to sustainably countering information pollution in the Mexican context.

In addition, strategic communication campaigns should be developed to counter disinformation that emanates from the realms of organised crime. Information campaigns to demystify narratives that glorify narcoculture are an important contribution to peace building in the Mexican context. Such campaigns should also seek to cooperate with the operators of online platforms, as much of this disinformation is likely to violate their community standards and terms of use.

Furthermore, targeted awareness campaigns should aim to protect groups that are particularly affected by disinformation in the Mexican context. These include (trans-)migrants, who are not only victims of defamatory and discriminatory online narratives but also targets of online frauds aimed, exploiting them economically, as well as women and, in particular, feminist activists. In view of the persisting pronounced urban–rural gap in internet access, it will be important to couple such online strategic communication campaigns with offline community-based dialogue and awareness raising. Respective projects should engage with locally influential individuals, such as community, political and religious leaders, as well as traditional indigenous authorities who can promote authoritative and accurate information to their constituencies.

Improving media capacity to effectively manage information pollution should be another top concern in the Mexican context. As this study has shown, Mexico's democracy is moving towards a post-factual state, in which opportune political narratives replace facts and evidence as the basis for political debate, opinion formation and decision making. To counter this trend, it will be important to continue capacity building for journalists, in particular providing training in fact-checking, strategic use of available open government data and critical data journalism. In Mexico the conditions for such efforts are good as there are numerous well-established CSOs that have long been active in the field of freedom of expression and the right to information, and which are well networked, both among themselves and internationally.

However, in an environment that is becoming increasingly hostile towards the media and human rights activism, it is important to critically reflect do-no-harm aspects in such activities. While fact-checking is crucial and must continue, it can be deconstructed as an oppositional act that feeds into the national controversy, and This implies the risk of national cooperation partners becoming targets of accusations that frame them as agents of foreign interests. It is therefore important to engage with the government in a constructive dialogue about improving the safety of journalists. Part of such a dialogue could be consultation on improving the existing mechanism for the protection of human rights defenders and journalists.

Furthermore, the Mexican media market remains highly concentrated. The few media outlets that dominate this market are also closely entangled with the political class, which leads to a lack of media plurality and neutrality. To ensure pluralism and diversity of opinions and voices, which are necessary for democratic public debate and inclusive societies, continued support should be provided to alternative non-commercial, local and (indigenous) community media outlets.

This study has further identified the need to **strengthen the capacity of public institutions to promote access to reliable and accurate information sources**. To date, many Mexican public sector authorities lack the human capacity as well as the technological and knowledge skills to respond to citizen information requests in a fashion that complies with the high-quality data standards of accuracy, completeness, reliability, relevance and timeliness. To improve this situation and foster reactive government transparency, it is necessary to invest in building an adequate administrative transparency infrastructure. Capacity building and training of public officials will be important building block of such efforts.

Alongside these efforts, in order to strengthen the proactive dimension of transparency it will be important to continue working towards an open data culture in the Mexican public sector. For such an endeavour to succeed, the existence of working coalitions and alliances between public institutions media, and civil society is essential. Against this background, it would be desirable for the Open Government Alliance to resume its work. The Alliance's portfolio could be expanded to include the fight against disinformation. In addition, in the medium term, the existing Transparency and Access to Information Act should be reformed in a way that furthers strengthens the dimension of proactive, open government data (OGD). Of course, for the effective implementation of this legislation the continued existence and maintenance of the operational capacity of the INAI, as the competent independent authority, will be a necessary condition.

The Mexican case also offers general lessons for **international efforts to protect democracy and social cohesion against the perils of information pollution**.

The discussion on combating information pollution worldwide often narrowly focuses on the demand for increased regulation of online content, especially on social media platforms. In fact, the governments of democratic countries such as Germany and Spain have taken steps to regulate the content shared on social media, banning hate speech and misinformation, and imposing fines on companies and users who post such content (Tucker et al., 2018). However, it is questionable whether this approach is a suitable panacea in all contexts. In less-established or eroding democracies, in particular, the question of the long-term consequences of regulatory measures for the pluralism of public debates arises, given that they may be used by illiberal-minded leaders as a pretext to curtailing the right to freedom of expression.

Against this background, international efforts that seek to counter information pollution and the risks that it entails for democracy and social cohesion should not fixate on regulatory approaches focused on social media but look at the bigger picture. The present study shows that information pollution can be elite-driven to an important extent. Mexico represents a case of democratic backsliding, in which the deliberative and liberal dimensions of democracy have come under

pressure from a political project that capitalises on persisting poverty, inequality and corruption as widely shared grievances. While such grievance-fuelled projects of democratic backsliding may be able to garner significant popular support, it is important to understand that they tend to be driven by leaders rather than by dissatisfied citizens, who are swayed by online political disinformation. Such political leaders frequently argue that institutions that ensure vertical and horizontal accountability of the executive stand in the way of effectively addressing these grievances and hence need to have their powers restricted or be abolished altogether (Carothers & Press, 2023). Relevant institutions to prevent and counter political disinformation include national transparency authorities on the state side and media and CSOs engaged in the field of access to information and freedom of expression on the non-state side. In light of this, international efforts to counter information pollution and protect democracy and social cohesion should bolster diplomatic and economic disincentives for leaders who attack these critical state and non-state institutions. At the same time, they should prioritise measures to strengthen these institutions as early and effectively as possible.

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Annex

Table A1: Anonymised list of interviews by expert category

Interview ID	Expert category
1	CSO
2	CSO
3	Dev Com
4	Academia
5	Civil servant
6	CSO
7	Civil Servant
8	Civil Servant
9	Academia
10	Civil Servant
11	Academia
12	Academia
13	Development Cooperation
14	Media Professional
15	Media Professional
16	CSO
17	Media Professional
18	Academia
19	Academia
20	CSO

Table A2 below contains potential enabling and driving factors of information pollution as well as the resulting societal vulnerabilities towards and impacts of information pollution. It has been adapted from an analytical framework originally developed by UNDP's Oslo Governance Center (see UNDP, 2022) and expanded for the purpose of this study. The list was used as the basis for the development of guidelines for semi-structured interviews with experts from the four different contexts. Interviews were conducted during field research in Mexico from January and February 2023.

Table A2: Analytical framework. Potential enablers, drivers, vulnerabilities and impacts of information pollution in four environmental components

Environment	Enablers	Drivers	Vulnerability	Impact of information pollution
Political context	<p>Low public trust in state institutions and political actors</p> <p>Exclusionary political discourse</p> <p>Prevalence of identity-based groups/politics</p>	<p>Political processes (e.g. elections, referenda)</p> <p>Political crises (e.g. disputed elections, unconstitutional power transfer)</p> <p>State or political actors engaged in influence operations</p> <p>Government restricting access to information</p>	<p>Reduced public trust in official information sources</p> <p>Reduced public trust in political actors and institutions</p>	<p>Degradation of the public debate</p> <p>Reduced citizen participation</p> <p>Reduced women's participation in politics and public office</p> <p>Delegitimised democratic processes</p> <p>Long-term damage to social contracts and vertical social cohesion</p> <p>Decreased government accountability and transparency</p> <p>Reduced buy-in for public policies</p>
Media landscape and information eco-system	<p>No independent public service broadcaster</p> <p>Increased use of alternative information sources</p> <p>Spread of junk news stories online and offline</p> <p>Lack of media plurality or neutrality</p> <p>Media closures or downsizing</p> <p>Poor-quality journalism</p> <p>Lack of transparency of media/ website ownership</p>	<p>Limited press freedom due to government or self-censorship</p> <p>Hyper-partisan or highly politicised media</p> <p>Prevalence of junk news sites</p> <p>Targeting of mainstream media by disinformation actors</p> <p>Increased reliance on closed messaging apps, groups and platforms for news and information</p> <p>Prevalence of coordinated disinformation campaigns</p>	<p>Reduced trust in mainstream news and information</p> <p>Reduced quality of information and news</p> <p>Certain populations not adequately served by news/ media outlets</p> <p>Mainstream media amplifies information pollution</p>	<p>Reduced public access to accurate and reliable news</p> <p>Increased use of alternative information sources</p> <p>Spread of junk news stories on and offline</p>

Environment	Enablers	Drivers	Vulnerability	Impact of information pollution
Socio-economic and social environment	<p>Prevalence of inter-group tensions and identity-based politics</p> <p>Highly polarised or divisive public discourse</p> <p>Low media and internet literacy levels</p> <p>Cultural norms allow unchecked information sharing</p> <p>Misogynistic or hyper-nationalist narratives</p> <p>Structural violence or conflict</p>	<p>Discriminatory discourse around, women, migrants, refugees and other vulnerable groups</p> <p>Online/offline influencers (political, social, religious, etc.) creating or amplifying disinformation</p> <p>Targeting of activists, journalists, human rights observers, etc. through media and online</p> <p>Social unrest or violence</p> <p>Prevalence of online harassment of women or minority groups</p>	<p>Manipulation of information for political or ideological purposes</p> <p>Low public awareness of disinformation and its risks</p> <p>Low public capacity to verify information</p> <p>Echo chambers</p> <p>Reinforced stereotypes and prejudices</p>	<p>Heightened political and social polarisation or radicalisation</p> <p>Marginalisation and stigmatisation of vulnerable groups</p> <p>Increased risk of communal violence</p> <p>Increased gender-targeted trolling, harassment and cyber violence</p> <p>Stifling of activists and opposition voices</p> <p>Long-term degradation of horizontal social cohesion</p>
Regulatory, legislative and institutional context	<p>Ineffective or repressive disinformation legislation</p> <p>Lack of transparency and accountability of internet companies</p> <p>Lack of public dialogue on issues related to internet governance</p> <p>Lack of incentives for internet companies to curb disinformation</p> <p>Lack of consistency in content curation policies between internet companies</p> <p>Lack of robust legislation on access to public information (ATI)</p> <p>Lack of open data culture in the public sector</p> <p>Unclear competences of administrative authorities regarding regulation of online content</p>	<p>Social media algorithms promoting sensational content ("click bait") creating financial incentives</p> <p>No independent body tasked with online content oversight</p> <p>Inconsistent enforcement of policies by internet companies</p> <p>Government interference in online space, e.g. internet shutdowns</p> <p>Government attempts at curtailing right to expression through online censorship</p> <p>Weakening of accountability and transparency mechanisms and institutions</p>	<p>Elevation of disinformation on social media platforms</p> <p>Slow, ineffective moderation of content</p> <p>Ill-intentioned actors continue to profit from creating and disseminating disinformation</p>	<p>Shrinking civic spaces and disappearance of dissenting voices</p> <p>Growth of "disinformation industry"</p>