

The Digital Agora Fights Back: Building Disinformation Resilience One Initiative at a Time

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Abstract

Countering disinformation and challenging ideologically divisive social media tactics to protect electoral integrity requires innovative digitally driven changes within the public sphere. While there is growing scholarly interest in exploring novel ways of countering mis- and disinformation, research examining specific initiatives remains scarce. This article provides in-depth qualitative case studies of two successful collaborative civil society initiatives in the digital agora that used digital media to counter disinformation: (1) Comprova during Brazil's presidential election and (2) the Transparent Referendum Initiative in Ireland's 8th Amendment Referendum. As these cases demonstrate, fact-checking and debunking initiatives benefited from crowdsourcing. Crowdsourcing allowed these initiatives to counter disinformation while simultaneously building more knowledgeable, engaged, and empowered communities.

Keywords: disinformation, polarization, civil society, crowdsourcing, democracy, ICT, information networks, trust

1. Introduction

Digitally driven political participation has had profound effects on political communication and public opinion (Chadwick, 2019). Some of the documented negative effects are due to bad actors' malicious intent and criminal online activity (Townsend, 2017). For over a decade, Benkler, Faris, and Roberts (2018) collected data and studied how digital communication affects the politics of democracies. They argue that the ubiquity of technological processes, given the convergence of certain factors, such as the omnipresence of social media, artificial intelligence, and other factors, generated an environment within which democratic governability is reduced to a minimum; echo chambers create resistance to meaningful political communication, and trust becomes a rare commodity within the citizenry (Benkler et al., 2018).

There is a growing consensus that while new communication technology can improve the quality of our lives and facilitate global cooperation, it can also be weaponized to increase polarization. As Levitsky and Ziblatt (2018) explain, history has shown that social and political breakdowns can be caused by stress factors, such as extreme polarization. Considering the dangers that emanate from online disinformation, propaganda, manipulation, and radicalization, uncovering novel tools that help counter online falsehoods and tackle their amplification are crucial. This article aims to improve our understanding of what forms of public engagement can prove useful in responding to the combined threat of coordinated inauthentic behavior, online falsehood, and government propaganda.

The focus of this article is the science, technology, and society connection. It begins with a brief introduction of the problem—namely, the notion that social media driven international communication exacerbates the spread of disinformation, deepens group divisions, and weakens the democratic deliberative process. Overall, the goal of the article is to examine how innovative digital initiatives within the public sphere can be used to turn these tools from liabilities to assets, taming the effects of weaponized information. The article then proceeds as follows. The theoretical background section examines connections between online networks, trust, and the development of a more disinformation resilient society. To clarify, this study considers resilience to be understood as the extent to which people are able and willing to form cohesive communities to advance the quality of their lives when facing challenges (Hall & Lamont, 2013; Humprecht, Esser, & Van Aelst, 2020). The same section addresses how crowdsourcing can be a useful adaptation strategy in contemporary societies. The following section reviews contemporary challenges to democracy, as it illuminates some of the key issues in contemporary politics and propaganda. This is followed by a discussion of the relationship between pooling resources to strengthen democratic safeguards and networked civil initiatives that benefit from crowdsourcing. I argue that crowdsourcing is empowerment-oriented digital participatory citizenship that can benefit multistakeholder

governance. The methodological considerations section consists of two qualitative case studies, Comprova in Brazil and the Transparent Referendum Initiative (TRI) in Ireland. The discussion and caveats section identifies limitations. The final section is the conclusion and contributions, offering future directions.

2. Theoretical Background

2.1 Information Networks, Knowledge, and Trust

Constructivist scholarship suggests that the approach's focus on communicative action, an emphasis on discourse, and the process of creating shared meanings has the capacity to broaden our understanding of complex socio-technical systems in the information age (Risse, 2004; Saurugger, 2013). It is also acknowledged that power, knowledge, and institutions cannot be separated from the environment within which they operate. As Foucault (1980) suggests, power can be perceived as a phenomenon situated within the various social practices, formal and informal institutions.

Networks, information or otherwise, have become endemic in political communication and characterize political action in the information age; as Stone (2005) writing about knowledge networks (KNETs) explains, under the 'discourse coalition and communities' approach to understanding knowledge networks, KNETs constitute social and institutional practices that are discursively informed. Parmar (2002) defined knowledge networks at the international level as systems of coordinated intellectual exchanges among various actors within societies to advance a trustworthy pool of information upon which public policy decisions can rely. Stone (2005) emphasizes the role of discursively informed human communication networks and their power over knowledge-creation that is tamed through listening to the voices of the citizenry. As she reveals, the contribution of such networking modes of operation is not only invaluable to knowledge production, but they also act as reputational intermediaries and mediators, as they systemize knowledge from wide-ranging sources and, ultimately, constitute what we consider a global civil society (Stone, 2005). This article argues that the knowledge networks framework, understood as discourse coalitions and communities, allows for the formation and functioning of more inclusive information and communication networks that can be valuable assets in the process of building up "a new system of safeguards" against disinformation and the threat of coordinated inauthentic behavior worldwide (Lazer et al., 2018, p. 1094).

As stated in the introduction, Benkler et al. (2018) point out a connection between the widespread use of new technological means of communication in news consumption and communication and trust-levels in society. In what Giddens (1991) calls "abstract systems," such as human societies on the global scale, especially during the latest technological age, this idea is reinforced as states struggle to foster some equivalent of "personalized trust" that has served smaller human communities in history well overall. However, in our current age, novel ways of establishing and maintaining trust ought to be explored (Giddens, 1991). Trust is fundamental to democratic governance; as Putnam (2000), writing on the role of social capital in a democratic society, affirmed, the underlying trust among the various participants in a democratic society serves as a lubricant of social and political processes. Trust, cooperation, and the recognition of mutual interests are fundamental to the efficient functioning of any social entity. Trust encourages information exchange, and it allows for a more flexible adaptation of human societies in the face of adversity, which is characteristic of the fast-paced socio-technical system of our 21st century (Levi, 1998). As explained in detail later in this article, the connection between extreme levels of distrust and partisan polarization is rather remarkable. As this article argues, in complex socio-technical systems, the higher the levels of distrust, the higher the chance that the system will malfunction as it pertains to cooperation and democratic governability. As this article points out, collaborative initiatives, combined with crowdsourcing, can become a useful adaptation strategy in contemporary societies to remedy some of the malfunctions. This article synthesizes and builds on a range of theoretical approaches, frameworks, and concepts such as knowledge networks, crowdsourcing, multistakeholder, as well as networked, governance structures.

3. Contemporary Challenges to Democracy

Protecting the integrity of the democratic process, and efforts to maintain cooperative patterns spurred innovative configurations of policy actions worldwide. Lazer et al. (2018) argue that due to the combined threat of online falsehoods, coordinated inauthentic behavior, and propaganda, both the individual and institutions remain vulnerable to the whims of malicious actors, which can only be countered by developing "a new system of safeguards" (p.1094). There are different ways that are currently being explored to build such system of safeguards: intervention by government entities, such as regulations or tech company initiatives, including platform-based detection and intervention using algorithms and bots (Lazer et al., 2018). As for the individual voter, it seems that education and empowerment work best. What is called in the literature, the crowdsourced approach, is grounded in tapping into the wisdom of the crowd (Howe, 2006, 2008). Yet another approach is the facts-checker approach by experts and professionals that is based on the need to confirm the truthfulness of news (Collins, Hoang, Nguyen, & Hwang, 2021). A noteworthy combination, or hybrid approach, is the expert-crowdsourced approach (Collins et al., 2021). Finding innovative ways of transforming current and future research into easily digestible and communicable information for journalists and the public in general is of utmost importance,

joint efforts from researchers and the media to do so are critical for future success, as is the reinvigoration of local news that have relatively high levels of public trust (Lazer et al. 2017).

Emerging technologies have important implications for the political process and the quality of democracies. But what are the stakes locally and internationally? Information technology, artificial intelligence or robotics spur, and are spurred by, innovation, represent progressive development in their respective fields, and have the potential to improve the human condition. However, these represent both opportunities as well as potential threats within sociopolitical systems. Uncertainty and ambiguity accompany such, often profound fast-paced, developments and their impact on various actors, institutions, their interconnections, and the knowledge production process. As these developments have the potential to prompt social, political, and economic paradigm shifts, the only way to cope with the resulting shifts is to assess risks and opportunities and adapt. The strategies of adaptation demand a rethinking of responses and finding new ways to strike back.

As it is explained in more detail later in the article, exceptionally high levels of partisan polarization and high levels of distrust of the news media are closely related. As Radu, Zingales, & Calandro (2015) illuminate, the value that crowdsourcing might bring to build and restore trust can be impactful when fundamental building blocks of the democratic process, such as openness, accountability and legitimacy are at stake.

3.1 Networking, Civil Society Initiatives, and Crowdsourcing for Democracy

Building a pool of resources to safeguard and strengthen the defenses of the foundation of the democratic process have been important to democracies. There are various approaches and methods of building civil societal (Note 1) capacity to counter disinformation including, but not limited to, fact-checking, coalition building, digital forensics and research, advocacy, media literacy, or networking and coalition building (Studdart, 2021).

A promising aspect of digital communication technologies is that the research that links creativity and online participation focuses on collaborative and interactive practices that also emphasize co-creation, showing that there is room for optimism regarding integrating the technological, social, and political aspects of digital communication (Literat & Glăveanu, 2018). Writing about the transformative effects of web technologies, Monaci (2016) examines collaborative action on a variety of online platforms where crowdsourcing techniques lead to creative co-creation and solutions to problems. While the Internet might be considered a disruptive technology, reflecting the clash between fast-paced technological change and slow change in the social, political, and economic realm, strategies of adaptation ought to be developed to mitigate the negative side effects and/or failures of the use of web-based technologies on socio-technical systems (Franklin, 2012; Monaci, 2016). Changes in technology induce changing attitudes and practices, which, in turn, shape institutions that become both, a reflection of changes in norms and practices, as well as contribute to the formation of new societal value-systems. Reforming socio-technical systems requires investment in developing creative solutions to emerging problems. Scholars, working and networking together with policymakers and the public, need to make it a priority to develop multi-pronged approaches to counter network propaganda and find avenues to shaping the architecture of the media ecosystem in a way that becomes less susceptible to manipulation and the amplification of mis- and disinformation, or outright lies (Benkler et al., 2018).

Crowdsourcing emerges as a tool that has the potential to deliver valuable outcomes. First, crowdsourcing is beneficial for multistakeholder governance as it allows for a diversity of voices to be represented and it is also congenial to openness, transparency and building trust (Cogburn, 2008; Radu et al., 2015). The diffusion of innovative technological solutions in governmental affairs, domestic and international, led to the widespread use and incorporation of various non-state actors' expertise and policy advice, which, in turn, gave strength to these multi-stakeholder partnerships (Paár-Jákli, 2014). As Cogburn (2008) emphasizes, as state-centered governance approaches to solve complex global problems have often failed, we have been seeing the emergence of multi-stakeholder approaches as a boost to efficient solutions to such problems. Second, as different entities began to use crowdsourcing as a method to boost organizational efficiency and effectiveness (Howe, 2006; Liu, 2021); a wide range of scholars revealed that when crowdsourcing initiatives were effective, they had the capacity to generate additional benefits, such as reducing administrative costs, or improve relationships between government and the governed (Brabham, 2015; Clark et al. 2016; Dutil 2015; Mergel & Desouza 2013; Nam 2012; Prpić, Taeihagh, and Melton, 2015; as cited in Liu 2021). Third, following Sánchez, Álvarez, & Altamirano's (2015) crowdsourcing characterization that stresses the diverse set of actors' experiences and wide range of strength in particular policy practices, it becomes clear that there are potential benefits that could be reaped from such brainstorming and knowledge generated through synergistic processes to improve the quality of life of the citizenry. This article argues that crowdsourcing in both Comprova and the TRI initiatives were empowerment-oriented with the potential, but not the guarantee, to lead to preferred policy options.

4. Methodological Considerations

We are seeing a wide variety of responses to counter the threats that emanate from the fast and vast spread of

disinformation and propaganda online leading to widespread manipulation, extremism, hate, violence, and an overall undermining of democratic institutions worldwide. This paper examines initiatives that have been taking on the challenge and began to lay down the foundational building blocks of principles, norms, ideas, values, rules, and shared practices that could contribute to the norm diffusion process and, ultimately, regime creation and institutionalization of future defense mechanisms that bring us solutions to these contemporary challenges (Krasner, 1983). Understanding these initiatives as multi-stakeholder, networked governance structures and considering the role of information and communication networks in collaborative knowledge production and diffusion, this article argues that, as such, these innovative platforms have an ability to boost capacity and contribute to efficient solutions to policy problems, with the caveat that such problem-solving capacity to better reflect the wishes of the electorate does not occur in a vacuum, context and the historical development of the policy issue also has influence on the ultimate outcome of the initiative (Paár-Jákli, 2014). Global public policy networks have the ability to advance norm progression, thereby facilitating norms diffusion, ultimately, contributing to the development of best practices (Streck & Dellas, 2012). As this article explores, when these networked initiatives take advantage of crowdsourcing, not only might they act as models for distributed problem-solving, but they also are likely to deliver public goods (Liu, 2021).

By critically examining cases of coordinated responses to the central problem, the amplification and the disruptive potential of disinformation, this study helps us understand how new networked initiatives act as models of innovative adaptation to withstand the threat of coordinated inauthentic behavior, online falsehoods, and government propaganda. This article considers two specific projects: first, it critically examines Comprova that operated during the 2018 presidential elections in Brazil and was part of a larger initiative, First Draft, and second, it looks at the Transparent Referendum Initiative (TRI) in Ireland's 8th Amendment Referendum in 2018. As a research strategy, the comparative case study method embodies an empirical inquiry and deals with contemporary real-life events as it relies on multiple sources (Yin, 1989; Radu et al., 2015). These initiatives are indicative of the building up of fact-checking and debunking networks that are part of the networked governance process, and they also represent the trend of crowdsourcing as an essential part of multistakeholder participation (Radu et al., 2015). They can essentially serve as problem-solving mechanisms to the critical issue of amplification and disruptive potential of disinformation and eventual democratic backsliding. The evaluative approach taken here, by critically examining the two initiatives as case studies, demonstrates an emerging trend in crowdsourcing that empowers and otherwise benefits citizen initiatives and, simultaneously, multistakeholder governance structures, ultimately leading to an increase in democratic potential during the process (Ragin, 1987; McDonough & McDonough, 1997; Radu et al. 2015; Pattyn, Molenveld, & Befani, 2017). The insight we gain from this study should help us guide future policies that are crucial for exploring novel and efficient ways of countering misinformation, disinformation and populist politics that are, at the same time, stimulate participatory decision-making in politics and policies. The Comprova case in Brazil was selected for several reasons. First, it is one of the largest democracies of the Global South, and an important hub for disinformation where the populace has been highly polarized during and after the right-wing populist Bolsonaro's regime, who was dubbed "the Trump of the tropics" due to his heavy social media use, "benefiting from an 'industry of lies,'" and overall communication style (BBC, 2018; Phillips 2018 as cited in Santini, Tucci, Salles, & de Almeida, 2021, p. 51). "As a dysfunctional democracy penalized by a severe institutional crisis, Brazil has presented disturbing patterns of social media polarization since 2016, including the production of viral falsehoods" (Ribeiro & Ortellado, 2018 as cited in Wardle et al., 2019, p. 21). Second, it is a country with high WhatsApp, a closed messaging app, usage. Third, trust in media has plummeted in the time period between 2017 and 2018 (Wardle et al, 2019). Fourth, while fact-checking became a popular topic, "little is known about fact-checking operations in non-English-speaking countries and...in the Global South" (Wardle et al, 2019; Cazzamatta & Santos, 2023, p. 2). The TRI case in Ireland was selected from the Global North as an influential, impactful, and information rich case where essentially all societal actors, nongovernmental and governmental, came together and created a major crowdsourced operation with heavy social media use to stand up against a rather coordinated domestic and international misinformation campaign to achieve social change and institutionalize the will of the people in a major issue that is a focus of contemporary politics. While people came together to overwhelmingly defeat "the 8th," the issue was also highly polarizing in its character and the media was flooded by mis- and disinformation.

4.1 Case Study 1: Comprova/ First Draft

Comprova (Note 2), a research and collaborative journalist network and verification project that lasted 12 weeks, investigated viral WhatsApp and social media posts (images, texts, video and audio files) and countered mis- and disinformation leading up to Brazil's presidential elections in October 2018. To be successful, access to Apps and other social network platforms was vital to Comprova's project; this required the cooperation of those who run these apps and social networks. In this case, this was manifest in the setup of an application programming interface (API), which not only helped these journalists interact directly with users, but also allowed them to find patterns of misinformation. Editors helped with the WhatsApp tip line via Zendesk (Note 3) where Brazilians submitted the information related to the

presidential race that they deemed to be in need of fact-checking and/or debunking. Participating journalists also used tools such as Spike (Note 4), CrowdTangle (Note 5), and Torabit (Note 6) to monitor stories and track suspicious user-generated viral content on social media such as Facebook and Twitter (Kaiser, 2018; Lüdtke, 2018). Misinformation was then forwarded to the editors in the newsroom for consideration to be screened out and debunked. In this specific case of the Brazilian presidential election, all Comprova collaborators worked verifying the information authenticity, visual or otherwise (Rinehart, 2018). In deciding whether to include it in the published report, content had to meet two criteria: “significant risk for the public debate integrity,” and “significant engagement and share across social platforms and messaging apps” (Wardle et al., 2019, p. 8). Under this project, supported by Harvard Kennedy School’s Shorenstein Center’s project, First Draft, a range of organizations, such as newspapers, TV networks and other media platforms cooperated (Kaiser, 2018). Overall, this system of safeguards to combat mis- and disinformation can be considered a hybrid, or expert-crowdsourcing approach.

It is important to note that Comprova is one of the many specific projects of First Draft, a non-profit coalition, which began its operations in 2015 with nine founding partners and specializes in social media verification with offices in London and New York to combat disinformation globally (First Draft, 2017). Trying to combat information disorder, First Draft’s CrossCheck initiative facilitates its global verification and collaborative investigation network working on various projects in several countries as the organization aims to provide guidance and supports the work of all stakeholders in combatting disinformation and rebuilding trust in the digital age (First Draft, n.d.). The idea of CrossCheck model is that newsrooms that collaborate to combat disinformation will be less likely to be vulnerable to such threats (David Rockefeller Center for Latin American Studies, 2022).

While Comprova wrapped up after the Brazilian Presidential election and it did not stop the populist Bolsonaro from taking office on January 1st, 2019, research shows that these collaborative efforts have had measurable success in both, fighting disinformation and gaining back voters’ trust in news sources in Brazil, as the initiative continues. As researcher and expert on the topic, Claire Wardle, explained in a webinar on disinformation, Comprova lived on during the next presidential election in Brazil in 2022 and similar initiatives are being developed for elections that may face similar challenges in the future worldwide (David Rockefeller Center for Latin American Studies, 2022). The reach for internet users of the massive debunking operation in Brazil in 2018 was one in four and surveys have indicated that around 40 percent of respondents felt like Comprova’s work was a deciding factor in how they casted their vote. Additionally, 70 percent of respondents revealed that they communicated information they received through Comprova to inform others; overall, there was an 80 percent trust in Comprova’s reports among respondents (Wardle et al. 2019). It is important to note that about 88 percent of the most trending images that were shared during the 2018 Brazilian presidential elections were either fake or misleading (Tardaguila, Benevenuto, & Ortellado, 2018 as cited in Reis et al., 2020). A disproportionate number of the most trending messages were from Bolsonaro voters (Wardle et al., 2019). Considering these statistics, it should not at all be surprising that in the aftermath of this election, “factchecking agencies have proliferated within Brazil’s media landscape,” ultimately leading to the ousting of the right-wing populist Bolsonaro regime (Cazzamatta & Santos, 2023, p. 1). As Cazzamatta and Santos explain in their quantitative study on the 2022 Brazilian run-off election, *the successful defeat of the regime in 2022 can be better understood in the context of the previous presidential election in 2018.* During that campaign, disinformation was indispensable to Bolsonaro, whose team relied heavily on ‘digital soldiers’ who flooded “WhatsApp users with disinformation about the opposition” (Bursztyn & Birnbaum, 2019; Mello, 2020; Dourado & Salgado, 2021; Santini et al., 2021 as cited in Cazzamatta & Santos, 2023, pp. 2, 10).

Comprova was designed by First Draft, and it was managed by Abraji, the Brazilian Association of Investigative Journalism. The President of Abraji, Daniel Bramatti noted that as a result of Comprova’s activities they have been seeing an increase in politically active groups continuing the countering of disinformation. Confirming the idea that social media could be a medium for not only spreading, but also countering disinformation, Comprova was, in fact, backed by the Google News Initiative and the Facebook Journalism Project (First Draft, 2019). First Draft, a global nonprofit aiming to protect communities from misinformation, continues to lead numerous projects worldwide; their goal is to provide knowledge and specific tech tools to empower societal actors as they encounter false and misleading information (First Draft, 2019). As Wardle pointed out, the 22 elections worldwide that were taking place in 2022 alone should make everyone vigilant about defending the integrity of the democratic process; systematically building resilience is imperative when confronting the combined threat of coordinated inauthentic behavior, online falsehoods, and government propaganda as we are in the midst of developing ongoing projects to systematically do so (David Rockefeller Center for Latin American Studies, 2022).

4.2 Case Study 2: Transparent Referendum Initiative (TRI)

The Transparent Referendum Initiative (TRI) tried to protect the integrity of the political process and learn from the mistakes of the Brexit vote and the 2016 U.S. presidential election. A group of journalists and activists in Ireland

assembled to become part of an informal collective effort to try to counter misinformation and propaganda efforts online (Lavin & Adorjani, 2018). The Transparent Referendum Initiative was a civic initiative in Ireland led by volunteers, the goal of which was to promote transparent digital advertising throughout electoral campaigns (Transparent Referendum Initiative, n.d.). Sparked by the lack of regulations on digital political campaigning, TRI aimed to facilitate open, transparent, respectful, and truthful discussion during the 8th Amendment Referendum. Often times just called “The 8th,” the Eighth Amendment, adopted in 1791, but inserted into the Irish Constitution much later, in 1983, had effectively banned abortion in Ireland until this citizen movement led to the repeal of the amendment in 2018 (BBC News, 2018).

During the campaign, over 500 volunteers participated in crowdsourcing and used a large public database for Facebook ads associated with the 8th Amendment Referendum, many of them from foreign groups microtargeting Irish voters (Transparent Referendum Initiative, n.d.). Volunteers also used a unique Google Chrome browser extension, a plugin WhoTargetsMe (Note 7), to gather targeted Facebook ads, which then was returned to a central database (Note 8) (Lavin & Adorjani, 2018; McIntyre, 2018). Journalists and the Irish social media group Storyful helped translating the data gathered into a narrative in the form of news reports and accompanied by fact checks (Storyful, n. d.). TRI’s efforts to access the latent resources that large number of people represent, (Howe, 2006) including the use of hackathons, expert briefings, and other types of brainstorming brought multiple victories to them (Transparent Referendum Initiative, n.d.). During the lifespan of this initiative, the Irish Government made commitments to reforming election integrity and included social media ad related threats in the national risk register (Transparent Referendum Initiative, n.d.). In a surprising manner, Facebook and Google also acknowledged some responsibility and either withdrew or limited some of their services in Ireland during this time (Transparent Referendum Initiative, n.d.). It seems that due to political pressure and because a Private Member Bill was introduced before the Dáil, the Lower House of the Irish Parliament, requiring those ads to be traceable, Facebook has agreed to cooperate with TRI and the University College Dublin’s Geary Institute for Public Policy and produced data on such advertising (Leahy, 2018). There seemed to have been limits on the extent of cooperation however, due to several reasons: Facebook is a private company with its own responsibility to shareholders and its own rulebook, the lack of a global norms to regulate social media, and privacy concerns.

In the TRI case, several key issues stand out as problem areas for the initiative. First, it is important to note the percentage and composition of foreign ads targeting the Irish referendum; while ads that originated outside of Ireland made up about 9 percent, out of those TRI was able to identify 3 percent as US-based, one single ad from Canada, three from France, and found that the origin of 4 percent was unclear. Second, untraceable financing was another problem; electoral laws in Ireland require that political campaign donations of all kinds above a certain amount must be registered (Lavin & Adorjani, 2018). There was a significant number of ads that violated the law; 38 percent on the “retain” and 17 percent on the “repeal” vote side (Lavin & Adorjani, 2018). Third, the widespread presence and weaponization of bots, or automated social media accounts, has been one of the most dangerous automatic message generators and disinformation sharing propaganda methods in the toolkit of various cyber criminals. While bots, just like other emerging technologies, can be used to initiate positive change, they are frequently used for malicious purposes. Regulating their use is not typically on the agenda of legislators yet, thus they operate mostly without any constraint in cyberspace.

There is evidence that bot activities have played a role in disrupting the democratic process and have typically been glaringly uneven (Benkler et al., 2018); for example, supportive bot activity during the 2016 U.S. Presidential election was characterized by a 5-to-1 ratio between the two candidates, Trump and Clinton (Lavin & Adorjani, 2018). The 8th Amendment Referendum in Ireland seems to have been similarly affected; significant bot activity has been detected in the analysis of the 400,000 tweets leading up to this referendum. While 14 percent of the 165,323 tweets for the anti-abortion hashtag (#Savethe8th) appeared to be bots, out of the 267,274 tweets for the repeal hashtag (#Repealthe8th) botlike activity was half as much (Lavin & Adorjani, 2018).

During this debate about the 8th Amendment Referendum a unique tool, called the “Repeal Shield” (Note 9), was employed, which reduced the effects of bot activity by allowing users to block accounts that this tech tool suspected of being bots, trolls, or other types of fake accounts designed to spread lies and hateful messages (Lavin & Adorjani, 2018). This tool is a good example to demonstrate how activists have the ability to create digital experiments and withstand trolling and a toxic debate environment, which would otherwise tamper the effectiveness of personal storytelling and testimonies. However, there might be an important caveat, it is not entirely clear where to draw the line between just screening trolls out of the public space and building a specific moral space yet avoid maintaining echo chambers at the same time (Lavin & Adorjani, 2018; Wheatley & Vatnoey, 2020).

Lavin & Adorjani’s (2018) propositions have critical implications for future research. First, they explain how the “retain” campaign side of the Irish referendum was engaged in a rather negative, combative type of campaigning that was characterized by deploying all kinds of right-wing populist style messaging peppered with Trump-style attacks on the media, while, at the same time, the “repeal” side has been relatively clean in its tactics. Why this is the case requires further research. Second, these authors maintain that the combination of an engaged citizenry and an attentive media

that continually exposed the aforementioned scare tactics and fake news contributed to the downfall of such activities, and that reputation and societal norms do matter, which is what this paper argues by examining and uncovering various methods in the citizens' toolkit. Third, Lavin and Adorjani (2018) suggest that group size and social trust matters for democratic performance. While this is not a new suggestion, their proposition that building resilience in a particular social setting, which is smaller in size and close-knit in nature might be hard to replicate, also necessitates further research (Lavin & Adorjani, 2018).

Ultimately TRI was able to fend off misinformation-based propaganda, shady tactics, and dark ads in a divisive abortion referendum in Ireland (Lavin & Adorjani, 2018). Ireland voted on May 25th, 2018, by a *two-to-one margin to change the constitution and legalize abortion* (Carolan, 2018). *The Irish vote has had an effect both at home and abroad as it offers lessons on how to combat potential social media distortions that have implications on democratic elections* (Lavin & Adorjani, 2018). TRI received a tech award for the best use of data and for social impact achievement (DatSci Awards, 2018).

5. Discussion and Caveats

The two cases examined in this article demonstrate how the expansion of digital tools allows for online crowdsourcing of ideas. These fact-checking and debunking networks that were formed in both, the Brazilian as well as the Irish case, reveal that crowdsourcing through these information and communication networks facilitated both processes, the knowledge building, as well as the participatory decision making (Radu et al., 2018), which then, ultimately, helped these become part of an evolving safeguards system that fights back disinformation.

This article is based on the understanding that information and communication networks are a form of governance that not only help to build and systemize policy-relevant knowledge but can also be useful in the dissemination process (Stone, 2005; Paár-Jákli, 2014). Uncovering novel tools that help counter and challenge online falsehoods, and also help tackle amplification, became vitally important. As this study examines innovative, digitally driven initiatives, it aims to help us better understand what forms of public participation can prove useful in responding to the combined threat of massive deployment of online falsehoods and propaganda and growing surge of populism worldwide. It is imperative to develop multi-pronged approaches to counter network propaganda and find opportunities to shape the architecture of the media ecosystem in a way that becomes less vulnerable to disseminating manipulations and lies (Benkler et al., 2018).

The two cases are different in many regards. While Comprova did not go as far as stopping the populist Bolsonaro from taking power, research shows that these collaborative efforts have had measurable success in both, fighting disinformation and gaining back voters' trust in news sources in Brazil. It also led to a growth in political activism to fight divisive populist politics. Additionally, as Wardle et al. point out, "effective collaborations take time, time to build systems, develop trust...and to reach and engage audiences...[and] these projects produce incredibly important data sets for improving our understanding of the challenges associated with misinformation" (2019, p. 5). Other benefits include serving as a model for prospective and long-term collaborations, impacts newsroom partnerships, enhances digital literacy skills of audiences (Wardle et al, 2019). It is important to note that in the post-election survey, over "70 percent of respondents said they shared or discussed Comprova debunks in order to inform someone" (Wardle et al, 2019, p. 50). While the Comprova project represented a 12 weeks intense engagement on behalf of the participants, it was preceded by months long preparation and coalition-building in the first part of 2018, whereby the forming of the Comprova governance framework played a critical role in establishing key values, such as developing and maintaining trust, establishing guiding work principles, such as "accuracy, fairness and impartiality, independence, transparency, and ethical responsibility," as well as helped through extensive training sessions, workshops, webinars, and bootcamps to teach participants digital forensic skills (Wardle et al., 2019. p. 7). While one of the most important benefits of fact-checking and debunking operations is that these help withstand the attacks of cyber warfare, there are also some challenges along the way. What represented a key challenge, was "the competing pressures of immediacy and accuracy" (Wardle et al., 2019. p. 26). But certainly, the most chilling downside of the fact-checking and debunking operations for journalists was that they themselves became targets of threats in various forms, such as "physical aggression, hate speech, and leaks of personal data" (Wardle et al. 2019, p. 37).

An interesting and important finding in the Comprova project is that, in fact, the reach of social media is far from being independent from the market; while Comprova's page originally had 136,000 organic followers, "by the end of the project...sponsored Facebook posts reached almost seven million people," which also led to a wider and more balanced audience (Wardle et al., 2019, p. 41). It seems, therefore, crucial that "during the planning phase, the power of promoted posts was discussed with the technology companies" and Comprova received help in that regard (Note 10) (Wardle et al., 2019, p. 41). In accordance with previous research, the Comprova report found that right-wing belief sets in individuals made them less likely to hold favorable views of independent fact-checkers than those with political views on the other side of the spectrum (Nyham & Rieffler, 2015; Rasmussen Reports, 2016 as cited in Wardle et al., 2019, p. 41).

The Transparent Referendum Initiative has gone further than Comprova as this massive initiative ultimately led to major policy change in Ireland. TRI’s success is a lesson to all how extensive, inclusive, and creative collaborative online efforts that use crowdsourcing, and other digital media tools, to counter misinformation have the potential to ultimately fend off misinformation-based propaganda in a divisive environment (Lavin & Adorjani, 2018). *The Irish vote has had an effect both at home and abroad as it offers lessons on how to combat potential social media distortions that have implications on democratic elections* (Lavin & Adorjani, 2018). As these two case studies indicate, similar creative and collaborative online initiatives and programs have potential to generate change and help us better strategize when countering disinformation and online falsehoods within the public sphere. Moreover, it can be argued that these cases can be considered *examples of a hybrid approach, i.e., the expert-crowdsource approach* (Collins et al., 2021), where the public worked together with a wide variety of experts, including academics, and built coalitions to create change, as they were laying down the foundations of building a successful safeguards system to fight back disinformation and divisive tactics. Considering how contemporary complex global problems require coordinated and cooperative solutions amongst diverse groups globally, it is imperative that we collectively find innovative ways of adaptation to our constantly changing environment. Table 1. below summarizes some of the most important aspects of crowdsourcing in the two case studies examined in this article.

Table 1. Comparison of cases as they relate to crowdsourcing

| Aspects of Crowdsourcing | Cases | |
|-------------------------------|---|---|
| | Comprova | TRI |
| Trust | Restored audience trust in journalism & the collaboration created trust within the journalistic community in Brazil. | Created trust among diverse collaborating social units within Ireland. |
| Technology | Spike, CrowdTangle, Torabit Zendesk | Repeal Shield @repeal_shield to reduce the effects of bots, trolls, and other types of fake accounts (blocklist). Counter/fact-check/debunk political mis- and disinformation, and propaganda online. Promote transparency in political advertising and digital political campaigning. |
| Objectives | Counter/fact-check/debunk political mis- and disinformation online during the presidential election in 2018 in Brazil. | |
| Benefits | Restore audience trust in journalism & boost collaborative journalism & efficiency. | Defeat the 8 th Amendment & restore women’s reproductive freedom. |
| Democratic performance | Debunked large amounts of mis- and disinformation and paved the way to defeat the far-right populist regime that used extensive disinformation propaganda during the 2022 Presidential elections in Brazil. | The Eighth Amendment that banned abortion in Ireland was repealed in 2018 with the help of extensive debunking operations. |
| Contextual factors | Expert-crowdsource approach (hybrid). | Expert-crowdsource approach (hybrid), but with wider civic initiative & collaboration between journalists, volunteer activists, and virtually all kinds of social units, governmental & nongovernmental. |

Some caveats are in order, however. First, solving problems requires developing agreed upon definitions of problems. Framing and attributing meaning matters; as Sullivan (2018) observes, fake news loses any real meanings when there is no agreed-upon consensus at all in a society on what is communicated, but, rather, it could mean just about anything depending on who communicates those and in what context. When meaning becomes fairly blurred, ambiguous and even controversial, then societal norms break down easily and the social fabric endures damage (Sullivan, 2018). Manipulating content has been, and continues to be, a major problem. Mis- and disinformation that flows free and fast has the capacity to spur conflict. Without norms and practices regulated globally on global platforms, combating the amplification of disinformation, hate, and violence remains an urgent 21st century challenge. Second, a critical side of the science, technology and society connection is ethics; it has implications for democracy and the quality of life of citizens. With new discoveries and new technologies emerging, we are seeing more awareness involving recognizing the ethical implications of the information age, for example, computer science ethics is being taught for the first time. In an effort to influence the mindset of future computer scientists, a Harvard Initiative teaches skills of ethical reasoning and communication, and it might soon be a model for others in academia (Grosz, 2019; Karoff, 2019). From the ethics of

electronic privacy and other ethical challenges to moral considerations of a diverse set of context-specific issues, computing technologies are deeply embedded in our social, economic, and political lives.

While there are limits to generalizability, validity, and reliability, generalization of the case study findings is sought to be optimized by the strategic selection of cases with dissimilar immediate, yet similar long-term, outcome, geographical location (global north vs. global south), and size of the country, but linking them to a theoretical framework (Yin, 2009). Also, as Flyvbjerg suggests, information-oriented case selection aims to “maximize the utility of information from small samples...cases are selected on the bases of expectations about their information content” (2011., p. 307).

An important question is: how can we do better? While we are trying to figure out how to deal with the ethical and social impacts of the amplification of mis- and disinformation, along the way, one thing we can do is look at examples of citizen initiatives countering the phenomenon. *This research examines innovative, digitally driven initiatives that have the potential to generate change in the way disinformation and online falsehoods can be countered within the public sphere. The goal is to improve our understanding of what forms of public engagement can prove useful in responding to the combined threat of coordinated inauthentic behavior, online falsehood, and government propaganda.*

6. Conclusion, Contribution, and Future Directions

This paper has argued that the science, technology, and society connection necessitate a close look at the disruptive nature of modern technology, including ethical and moral issues. While the global picture is even more complex than that of the national, there is no regulatory process on either level. As Benkler et al. (2018) contend, technology ought not be considered destiny; its interaction with institutions and ideology shapes meaning, and influences culture and identity. While short-term tech-based solutions might not bring ultimate solutions to disruptive communication problems, a multitude of diverse initiatives and a systematic development and institutionalization of such structures can be a good start.

Problems run deep and we need a coordinated policy response and a multi-stakeholder approach internationally. Ideally, this would be preceded by an emergence of rules, formal and informal, that represent the sources of power, which would help shape a set of new rules for international communication online, mirroring the rules of communication offline. However, existing governance systems are not well-equipped to handle the combination of online threats facilitated by technology in the public sphere, democratic backsliding and rising authoritarianism, along with keeping markets free and competitive; institutional renewal and innovation is needed on every level, including a more engaged and inclusive public sphere that shapes global public policy (Polonski, 2016). There are many who share the sentiment of Polonski, who sees social media as a threat to democracy as it pertains to polarization and the development of echo chambers, instead of being a facilitator of intense, yet healthy and respectful public debates. While such digital public space, that allows for extensive public deliberation and boosts cooperation might remain a utopia for the most part, perhaps it is premature to conclude that, on the long run, the costs of internet technology to society will outweigh the benefits that are reaped from it (Polonski, 2016). There is ample evidence that shows that these concerns are justified; however, the defense mechanisms to protect the ‘public agora’ are gradually building up. Yet, we also need a simultaneous transformation of the other pieces of the ‘puzzle,’ i.e., fighting the battle for rewiring civil society online and offline into one that is more congenial to build rather than destroy. For that to happen, rebuilding trust in societies and in the media ecosystem is essential. As Wardle et al.’s evaluation of the Comprova project reports, “collaborative effort ...had an effect of building trust and personal relationships between journalists of normally competitive newsrooms” (2019, p. 36). In addition, there was also a “goal of restoring audience trust and journalists’ role as gatekeepers” (Wardle et al., 2019, p. 39). Journalists’ “willingness to take Comprova beyond the presidential race, turning it into a continuous effort, dubbed Comprova 2.0” underscores that goal (Wardle et al., 2019, p.40). Using various methodologies, such as content analysis, future research could look further into how Comprova impacted the lives of Brazilians.

This article argues that similar to economic development becoming unthinkable to separate from sustainable development, so should social, ethical responsibility be ingrained in the mindset of the technical expert or the policymaker of the 21st century, as well as everyone else. *As this study explores novel ways of trust-building mechanisms, it considers how creative online participation via crowdsourcing projects and fact-checking methods becomes a valuable tool for building new patterns of cooperation within the communication ecosystem.* While there is growing scholarly interest in exploring novel ways of responses to mis- and disinformation and populist politics, research on specific initiatives is scarce. *By examining ways to empower citizens to find avenues for making informed political choices so that they could become agents of change, this article aims to help filling this void by uncovering some of the entanglements of technology and society.* This research presented two different cases that both had a crowdsourcing aspect as they both aimed to fight disinformation through collaboration. *The strategies of adaptation to withstand threats emanating from the dark side of technology that has the potential not only unite, but also divide society creating exceptionally high levels of partisan polarization and high levels of distrust, demand a rethinking of responses and finding new ways to strike back.* An important contribution this article aims to make is to *demonstrate how innovative digital initiatives within the public sphere crowdsource and*

collaborate to build trust and a reliable information flow to develop a more disinformation resilient society with the ultimate goal of taming the effects of weaponized information and withstand attacks on institutions. To reiterate what was stated earlier in this article, this study considers resilience to be understood as the extent to which people are able and willing to form cohesive communities to advance the quality of their lives when facing challenges (Hall & Lamont, 2013; Humprecht, Esser, & Van Aelst, 2020). Additionally, these cases discussed here reinforce what Bennett and Livingstone (2018) illuminate connecting radical-right populist actors and disinformation escalation. Lastly, this article demonstrates how a hybrid approach, the expert-crowdsourcing approach (Collins et al., 2021) can be a resourceful approach to fight disinformation in different settings internationally. To sum it up, *empowerment-oriented digital participatory citizenship facilitates the formation of knowledge networks* (Stone, 2005), understood as systems of coordinated intellectual exchanges among various actors within societies to advance a trustworthy pool of information upon which public policy decisions can rely, which, in turn, *benefit multistakeholder, networked governance, potentially leading to a building up of "a new system of safeguards" against disinformation and the threat of coordinated inauthentic behavior worldwide* (Lazer et al., 2018, p. 1094). This article aims to make a theoretical contribution by synthesizing and building on a range of theoretical approaches, frameworks, and concepts and by connecting the literature on crowdsourcing, knowledge creation, civic initiatives and building disinformation resilient social units to multistakeholder, networked governance structures.

As previously stated, emerging technologies have important implications to the political process and the quality of democracies; important amongst those are the vulnerabilities of individuals and institutions. As this article argues, in complex socio-technical systems, the higher the levels of distrust, the higher the chance that those will malfunction as it pertains to cooperation and democratic governability. It is important to consider the pros and the cons of socio-technical systems with utmost care and guide and create policies recognizing potential impacts of emerging technologies on democratic institutions, on the individual's agency so that the digital revolution enhance the quality of life of the citizens, and we achieve our utmost potential individually and as groups (Reich, 2021). Due to a general lack of empirical research fighting disinformation internationally, future research can explore a wider variety of cases of citizen initiatives that aspire to combat mis- and disinformation.

Notes

Note 1. In this paper 'civil society' is understood as a range of social organizations and institutions that form the basis of a functioning society, distinct from the government and commercial or for-profit sectors. As the media, including print, broadcast, digital news outlets, and social media platforms, can play an important role in civil society to facilitate public discourse, hold institutions accountable, and/or gives voice to diverse perspectives, it is included here.

Note 2. Comprova: Projeto Comprova (2018). <https://projeto comprova.com.br/>

Note 3. Zendesk is a customer service platform that interacts and collects messages from WhatsApp: <https://www.zendesk.com/>

Note 4. Spike: <https://www.newswhip.com/spike-real-time-media-monitoring/>

Note 5. CrowdTangle: <https://www.crowdtangle.com/>

Note 6. Torabit (a digital platform expert) <https://www.torabit.com/>

Note 7. WhoTargetsMe: <https://whotargets.me/en/>

Note 8. TRI central database: <https://tref.ie/database/>

Note 9. Repeal Shield @repeal_shield: https://x.com/repeal_shield?lang=en, an application which used <https://blocktogether.org/>

Note 10. "Comprova's Facebook audience-targeting focused on two main groups, both of which were based on interests related to declared candidates and relevant news outlets. We initially targeted Brazilian residents over the age of 13 who identified interests in one or more of the main electoral candidates" (Wardle et al., 2019, p. 41).

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Authors contributions

Dr. Paar-Jakli was responsible for study design, data collection, drafting, and revising the manuscript. Dr. Paar-Jakli read and approved the final manuscript.

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