Policy Brief

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Social Media Toxic Public Opinion Formation in Migration Ecosystem

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Social media platforms have been documented to have negatively influenced and exploited a wide array of critical areas in our migration ecosystem, from: a) how (potential) migrants perceive migration, countries of origin, transit and destination, to how citizens of countries of origin, transit and destination perceive (potential) migrants, and from; b) how malicious actors (want to) exploit people on the move, citizens perceptions and migration policy, to d) how mis- and disinformation contributed to inaccurate narratives and anti-immigrant populism. Understood thus, social media platforms are places where torrential misinformation about migration is produced, disseminated, spammed, and consumed. Inevitably they shape network connections, create political spaces, influence citizens' perceptions and even grassroot movements that allow *social media toxic public opinion formation in migration discourse*. As a basic channel and source of mis- and disinformation, social media platforms can be double-aged swords: from the selection of personalised (news) content to the automated creation of news articles for the public; and from the detection and removal of harmful or copyrighted content to the creation of fake news and deepfakes through social bots. This brief offers across-the-board, critical and long-term systemic recommendations for policymakers concerning social media disinformation, content moderation and political microtargeting through their personal recommender systems and social bots that misrepresent migration.

INTRODUCTION

Today, a significant number of people with very limited technical capacity (knowledge and skills) and material resources to help them make informed decisions, primarily depend on consuming information distributed by online sources such as social media (Newman, 2016; 2020; DeNardis, & Hackl, 2015; Deibert, 2019). Meanwhile, the speedy increase of malicious actors in social media platforms calls for urgent instrumental policing to induce real change rather than just express a moral position. This is pressing because the rise of *toxic social media public opinion formation* intersects with the speedy transformation of media, due to media convergence, digitalisation and globalisation. In the context of today's 'migration politricks', social media platforms such as Twitter, Facebook, YouTube and Instagram are worldwide used by migrants, human traffickers, people smugglers, NGOs, and governments to disseminate or gain access to information about countries of origin, transits and destinations. Albeit attributed as sources and channels of misinformation by human traffickers, people smugglers, social bots used for disinformation as well as anti-immigration governments, a significant number of migrants depend on social media –knowingly or unwittingly– (and this seems only to intensify) for information about life in countries of transit (CoT) and countries of destination (CoD), before, during and after arrival. Likewise, the speed and ease at which both manually and algorithmically filtered information circulates on social media leads to (mis)information overload blurring up clarity in migration ecology. In fact, significant research findings demonstrate that a large part of social media information feeds is algorithmically filtered to users, while most potentially relevant information remains immense and hidden to them (Newman, et. al., 2016; Bucher, 2017; Reviglio, 2022). Understood thus, social media platforms exert their power to influence users through the decisions they allow or make for them.

PERCEPTIONS findings revealed that social media plays an increasingly critical influencer role in our globalised, mediatised and migratory world from the formation and dissemination of inaccurate narratives through targeted disinformation, to the potential use of social bots to influence public opinion in migration discourses. The rise of polarisation and *social media toxic public opinion formation* has encouraged investigation on the critical role played by disinformation, social bots, echo chambers, informational filters, or filter bubbles (Gorwa, 2019; Pariser, 2011; Helberger, 2020). On the theoretical level, the EU has strengthened the "Code of practice on disinformation" in 2022, however, policy negotiations should focus on implementing present regulations and improving reliable structural

Key Issues:
- Social media public opinion formation intersects with the transformation of media, due to media convergence, digitalisation and globalisation.
- Social media platforms are used by migrants, traffickers, NGOs, and governments to disseminate or gain access to information.

- Social media platforms do target disinformation to influence users.

- A significant part of social media information feeds is algorithmically filtered to users.

- Social media platforms exert their power through the decisions they make for their users.

- Policy should focus on implementing present regulations and improving reliable structural indicators to measure compliance.

indicators to measure their compliance. Per se, social media politricks is presented here as a systemic challenge both to our increasingly fragile political institutions and to our epistemology (knowledge not information). This is because social media has been long documented for using malicious social bots, recommenders and content moderation systems for political microtargeting and for flooding torrential disinformation pausing an epistemic threat (AlgorithmWatch, 2020; Fallis, 2020; Nahmias & Perel, 2021; Epstein & Robertson, 2015; Dobber, et. al., 2019). Accordingly, this brief answers the question: In which ways and to what extent do social media platforms pose a threat to genuine public opinion formation and for that matter, with what implications for public policy? It proposes across-the-board, critical analysis and suggests long-term systemic recommendations concerning social media's toxic public opinion formation in our increasingly hostile migration ecosystem.

The rise of toxic social media public opinion formation in the ecology of migration

As fast-growing performative platforms, social media should be understood as (a) a socio-economic construct; (b) embedded in institutions with their (imperfect) goals, enshrined values, and fundamental freedoms, and (c) they mediate and impact relations with the human and their socio-economic environment both on- and offline (Helberger, et al, 2020). They are to be considered as a continuously changing "complex assemblage of procedures, individuals and teams, ideology and datasets" (Reviglio, 2022) and cultures that are increasingly difficult to regulate or even to research about. Meanwhile, social media (algorithms) are deeply entrenched with human influences (i.e, subjective negative biases, racism, xenophobia, discrimination) whether in their interpretation, semantics, criteria choices, or training data (Kramer, et. al., 2014; Kingaby, et. al., 2020). Polemically, the quality of social media platforms – performance – still depends on their entrenched (algorithmic) recommendation and personalisation systems used as tools for 'knowledge' management as well as manipulation of users through design (González-Cabañas et al., 2021; Reviglio, 2019; 2020; Albanie, et. al., 2017; Moen, 2018). For instance, in our public debates social media malicious actors can strategically inflate content reputation and recommendation into mainstream discourse by increasing likes, shares and views on a particular subject to create online communities and spaces via fake followers, hashtag flooding, tweetbombing or cyberturfing (Diakopoulos, 2014; Cobbe, 2020).

PERCEPTIONS findings on social media analysis provide both theoretical and practical insights into how information develops and circulates there. Through the techniques of text mining and sentiment analysis on specific migration situations in the Greece-Turkey and Poland-Belarus border areas, our qualitative analysis on specific tweets (to probe the spread of

Key Findings:
- Social media (algorithms) are deeply entrenched with human influences in their interpretation, semantics, criteria choices, or training data.

- They are continuously changing and prove difficult to research about or regulate through public policy.

- Malicious actors use social bots to strategically inflate content reputation and recommendation into mainstream discourse.

- Social media made it more difficult to distinguish

misinformation on Twitter) demonstrates that it is a more daunting task to regulate social media platforms (Fortunato & Miccoli, 2022). On the one hand, PERCEPTIONS findings validate the increased difficulty to distinguish between accurate and inaccurate information circulating in such public spaces. On the one hand, these findings validate the increased difficulty to distinguish between accurate and inaccurate information circulating in such 24 hours actively engaged public spaces. This is also because disinformation spread faster through specific networks and communities than others particularly when social bots are involved. Globally, social media platforms such as Twitter, Facebook, YouTube are well documented as spaces where (mis)information is produced, disseminated and consumed giving rise to a *toxic public opinion formation on migration*. For our future, social media disinformation poses an increasingly intense democratic and epistemic threat. Everyday misinformation overload makes it more difficult to make scientific, democratic and informed policy decisions specifically when the sources and channels of such information is monopolised or difficult to verify. ***So, what must we do in the face of such a complex artificial challenge in an increasingly hostile environment?***

Social media do microtargeting and personalisation of users through recommender systems for the purpose of influencing public opinion. Recent research shows that the design of social media platforms such as Facebook, Twitter, and YouTube allows for microtargeting and personalisation of their users, permits misinformation overload, the creation of echo chambers and informational or filter bubbles (Bucher, 2017; Pariser, 2011; Reviglio 2022). As socio-technological systems designed for mediation and influencing human socio-economic and environmental interaction, social media platforms in their predominantly one-way communication styles, permit political microtargeting and aid malicious political parties to identify vulnerable voters and convince them through propaganda (Dobber, et. al., 2020). Although policies on social media content moderation have recently increased to remove irrelevant and illegal content (hate speech, child abuse, COVID-19 disinformation), a lot remains unchecked. On the one hand, there is need for enforcement of restrictive laws on content moderation, on the other, engineers, designers, policymakers, researchers and practitioners need ethical education for safeguarding our most cherished social and democratic values: "Privacy, Accountability, Safety and Security, Transparency and Explainability, Fairness and Non-discrimination, Human Control of Technology, Professional Responsibility and Promotion of Human Values" (Fjeld, et. al., 2020). More than ever before in human history, these values are universally under increased threat not least because they have significantly undermined our very contemporary democratic systems.

- between (what is) accurate and inaccurate information.

- Social media poses democratic and epistemic threat through misinformation overload.

- Social media can permit bots, PRSs, informational or filter bobbles for political microtargeting.

- Social bots inflate likes, shares, views, creat malicious online communities and spaces via fake followers, hashtag flooding, tweetbombing or cyberturfing.

- Social bots are used to foster fame through fake followers; spam misinformation; limit free speech, fish personal data; and generate bias public opinion on social media.

- Misinformation can be spread faster and is potentially more dangerous when spread by social bots.

Accordingly, **social media personal recommendation systems** (PRSs) are used for different purposes such as a) the selection of personalised content; b) the detection and removal of fake news, harmful or copyrighted content; c) classification and filtering/selection of news (content) for journalists; d) the automated creation of news articles for the general public, and e) using social bots (creating deep fakes) to influence public opinion (Reviglio, 2022). Unsurprisingly, the increased use of innovative algorithms, techniques and methods involved in the new media as well as computational journalism add up to feed social media with torrential content. As a way of example, the UK Press Association use AI tools to produce more than 30.000 local info per month; *The Guardian* (British*)* has developed algorithms that allow journalists to understand how audiences are responding to content and estimate their level of engagement; *LeMonde* used Syllabs during the departmental elections to write local articles on the results of the 36,000 municipalities and cantons affected by the elections; the *INJECT* project helps journalists scan articles, makes a proposal, ask incidental questions among many functions and this pattern promised to only increase with various political implications. In short, data-driven technologies such as *Serelay* (Star-up) are needed for analysis of social media platforms. This suggests that every wider application of data extraction technologies (AI tools) potentially allows content producers to understand the potential impact of specific content (such as racism, xenophobia, human trafficking, climate change and anti-immigration politics) on their audience. This knowledge allows social media platform designers and content creators to make and/or encourage more tempting and strategic decisions on types of content to recommend, style of dissemination and estimated financial as well as other gains including users' data and their time spent on these platforms. This suggests that to develop a cohesive comprehensive understanding of social media reality (both on- and offline getting more blurred), researchers and politicians need to agree that social media (algorithmic) are increasing toxic public opinion formation. Accordingly, we need human right-based efficient policy implementation where malicious actors can be traceable and prosecutable by law.

Opinion materialisation social (media) bots are automated computer software performing tasks along a set of other algorithms. The Department of Homeland Security (The US) describes social bots as programs used on social media platforms to perform several valuable and malicious tasks while simulating human behaviour. Meanwhile, recent research has revealed that over 37% of all internet traffic is performed by bots and up to 30% of users can be potentially deceived by them[1]. In the context of *social media toxic public opinion formation*, certain types of bots should be particularly policed: social bots used to automatically produce content and interact with humans;

- Malicious actors should be traceable and prosecutable by law.

- We are all potential victims and consumers of social media misinformation and information overload.

- Practitioners consider migrants at high risk of disinformation.

- Social media mis/disinformation creates negative narratives and perceptions about migrants.

- There is need to understand their technical complexity, variations, social embeddedness, and political influence, in our highly

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[1] https://www.imperva.com/resources/re-source-library/reports/2020-Bad-Bot-Report/.

and, Sockpuppets and trolls (bots) deployed by regular users or government employees to influence discussions, post fake comments about people, topics or institutions or fabricate reviews. Considered the most influential social media algorithms, social bots have been infamously renowned for: 1) fostering fame through fake followers; 2) spamming misinformation; 3) limiting free speech via recommender systems; 4) fishing out personal data; and for; 5) generating bias and negative public opinions. Understood therefore, social bots are purposefully used to strategically inflate content reputation and recommendation into mainstream discourse in migration. For instance, in other to understand what words are most frequently expressed in the Twitter environment during migration-related events at border areas and what sentiments are expressed in social media, PERCEPTIONS investigates information and misinformation existing in Twitter (content) during specific situations in the border areas of Greece-Turkey and Poland-Belarus, by examining tweets downloaded using keywords related to these conflict situations. Our findings revealed that the spread of misinformation on social media may potentially intensify the tension in crisis phases and could as well mislead (potential) migrants' perceptions about Europe (Fortunato & Miccoli, 2022). However, PERCEPTIONS analysis of retweet networks confirmed a marginal role of bots in both German and Italian networks as many of the bots in the dataset had no interaction with other users making it difficult to create echo chambers capable of increasing potentially threatening content. Furthermore, central users' retweets of bots were also not relevant, suggesting bots' low contribution in disseminating of influential users' messages and their poor ability to spread content via central users (Fortunato & Miccoli, 2022). Meanwhile, sufficient social media research suggests that misinformation can be spread faster and is potentially more dangerous when spread by social media algorithmics particularly in certain situations and moments of policy discourse. For example, researchers from the Universities of Southern Carolina and Indiana suggest that between 9% and 15% of active Twitter accounts are bots and of those accounts, most followers of politicians are found to be fake bots spreading propaganda and conspiracy theories on media to influence public opinion.

Social media polarisation leads to a dualism of light against darkness where 'we' only (want to) speak and share with those who speak to us, share our ideas, or think like 'us' –the politricks of "we" against "them". Accordingly, social media disinformation is a never-ending potential threat to accurate information and as a result, public perceptions and narratives can be seriously influenced by (others' deliberate) inaccurate narratives framed, embroiled, developed, disseminated and spammed on social media either through bots or humans. More than ever before, information spread on social media becomes more difficult (needing ever more technical skills and upskilling) to establish its truthfulness. This is a challenge for both researchers and policymakers with implications that the rise of toxic social media (algorithmic) public opinion formation poses a more general threat to

interconnected, digitally mediatised and migratory world.

● Human right organisations need to play a central part in the designing, regulation and governance of digital platforms.

● Misinformation on social media may potentially intensify the tension in crisis phases and could as well mislead (potential) migrants' perceptions about Europe.

● Different data sets regarding specific contexts and malicious contents on social media must be made accessible by researchers to inform public policies.

the future of our democracy and epistemology -where we all become potential victims and/or consumers of mis- and disinformation. As a way of example, PERCEPTIONS findings disclosed that (potential) migrants largely trust information (sources) related to them by their fellows and often mistrust institutional sources of information. But why? Unmistakably, many governments have been both found guilty or accused of xenophobic, discriminatory, and racist policies and treatments of illegalised and irregularised people (asylum seekers, refugees, displaced peoples, etc), by NGOs, migrant organisations, and human right advocates. Yet, the EU and member states use (social) media to convince its citizens on EU externalisation of migrant torture in North Africa (Libya, Tunisia, Niger, Morocco), in the central and western Mediterranean sea, in the Balkans, etcetera and internalisation of hostile environments for migrants within the EU. In fact, practitioners believe both migrants and native citizens are at high risk of targeting disinformation and/or political microtargeting on social media by malicious actors (right-wing propaganda, people smugglers, human traffickers, social bots etc). This suggest that regulating social media will potentially help to improve some of our century's biggest threats such as disinformation, polarisation, xenophobia, and racism. In other words, the increasing mistrust in institutions and consensuses. In this political collapse or enigma, the overarching key threat -disinformation- is yet to have a unanimous definition and consequently stakeholders see/interpret it differently (Treen, et al. 2020; Donato et al, 2022; Ruokolainen & Widén, 2020).

PERCEPTIONS' social media analysis confirms misinformation and disinformation create toxic narratives and perceptions about migrants. On the other side, this is particularly the case when Europe is one-sidedly depicted on social media as a "dreamland" for social and economic opportunities and not where hostile environments and border violence is everyday normalised. However, to contrast misinformation receivers (those who decode such information) must first perceive it as such. Only that mismatches between migrants' expectations and lived realities become evident after they migrated -when its already too late between the increasing wall of violence. As such, even expired, inaccurate or incomplete information deliberately kept on institutional and/or governmental websites and social media can potentially constitute misleading information with negative public policy implications. PERCEPTIONS findings suggest that during migration events: a) the debate on social media gets particularly harsh; b) the spread of fake news becomes more intense, and c) contents tend to be posted under common hashtags, which may be launched by common accounts or even by specific authorities (Fortunato & Miccoli, 2022). Recent research on social media revealed that content moderation, personalisation and political microtargeting is an imminent threat that is on the rise in our increasingly hostile migration ecosystem. All these findings suggest for researchers and policymakers to examine subsets of data related to specific pre-identified topics can provide

- The debate on social media gets particularly harsh, fake news spread faster and intense and news contents tend to be posted under common hashtags launched by common accounts or even by specific authorities.

- Examining subsets of data on social media can provide insights about how misinformation develops and spreads and with what implication for public policy.

interesting insights about whether and how misinformation is prevalent in specific discourses on social media. This can indirectly give a measure of the power that social media (algorithms) have in influencing certain ideas or spreading misleading information (news). Furthermore, continuous, and unrestricted research on social media is fundamental in understanding what kind of discourse emerges during critical situations in the migration discourse, and what role (mis)information (can) play to guide policymaking in building democratic institutions. Additionally, different data sets regarding specific contexts and malicious contents posted on social media must be made accessible by researchers to accurately inform public policies. **In fact, *Socrates* never wrote anything for fear of misinterpretation and disinformation.**

Granted, while these platforms are useful (in advancing) human-human interaction, machine-human interfaces and content analysis for policymakers and journalists, for both policymakers and researchers there is a need to better understand these platforms and deal with their limitations through efficient instrumental and timely regulations. Policymakers and researchers must understand that social media (algorithms) are neither one type of technology nor are they unpolitical; they can be either simple or complex, nevertheless, are a set of finite sequences (rules or instructions that might be well-designed or not) that can be used to solve or create problems and challenges. And since social media codes (algorithms) are not always explicit in their objectives, prioritisation, selection, removal or dissemination of information, they can positively or negatively affect public opinion formation and decision-making – as was the case in the United State election of Trump (Lessig, 1999). Thus, regulating social media implies that both researchers and policymakers need to understand their technical complexity, variations, social embeddedness, and ultimately political influence, in our highly interconnected, digitally mediatised, and increasingly hostile migratory world. Furthermore, governing social media (algorithms) requires policymakers and researchers to share a common ethical vocabulary and concerns on the values we all cherished to be maximally preserved and protected such as our human dignity and democratic institutions (EDRi, 2021; Kaye, 2019; Hirsch, 2010; Hildebrandt, et. al., 2010; Hilden, 2021).

In this challenge, both policymakers and researchers must be attuned to "the contextual and cognitive limitations" of both humans and social media platforms; understand "current algorithmic perceptions and behaviours of individual users" to share a common vocabulary to "raise awareness through digital, media and algorithmic literacy" (Reviglio, 2022). These findings suggest that policymakers, researchers, CSOs, migrant and human right organisations need to play a central part in the designing, regulation and thus governance of digital platforms not just an ethical principle but also as a prerequisite for a sustainable democracy (Floridi, 2018; Finck, 2018). Concretely, policymakers need to grant researchers full access to investigate

- There is a need to better understand social media and deal with its limitations through efficient instrumental and timely policies.

- There is need to understand the technical complexity, variations, social embeddedness, and ultimately political influence of social media platforms.

- Policymakers and researchers need to share a common ethical vocabulary on social media.

- There is need to raise awareness through digital, media and algorithmic literacy.

social media implicit codes and imperfect goals, negative biases and toxic narratives and their implications on public perceptions and thus human preferences. This would allow researchers to keep pace with social media development to make timely and evidence-based ethical recommendations to better orient future policies. Unmistakeably, it is these platforms we must regulate rather than fruitlessly endeavour to change the perceptions of its users.

RECOMMEDATIONS

Recommendation 1: To contrast negative social media (algorithmic) public opinion formation, different data sets regarding specific contexts and malicious content posted on social media must be made accessible to researchers transparently and legally to accurately inform public policies. Pre-identified topics can provide interesting insights about whether and how misinformation is prevalent in specific discourses on social media and indirectly can give a measure of the power that social media can have in influencing certain ideas or spreading misleading news, creating a public distraction, addiction, hate speech and xenophobia.

Recommendation 2: There is a need for continuous research to better understand social media platforms (algorithms) and deal with their limitations through efficient regulation. Policymakers need to grant researchers full access to investigate social media (algorithms) implicit codes and imperfect goals, inherent negative and toxic biases and their implications on public perceptions and thus human preferences.

Recommendation 3: Policymakers and researchers must be attuned to the contextual and cognitive limitations of both human users and social media platforms to understand current algorithmic perceptions and behaviours of individual users to share a common ethical vocabulary to raise public awareness on social media literacy.

Recommendation 4: Researchers need to keep pace with social media development to make comprehensive, timely and evidence-based ethical recommendations to better orient future policies and avoid malicious actors from threatening our epistemic and democratic institutions. Indeed, policymakers, researchers, CSOs and migrant organisations need to play a central part in the regulation of digital platforms as part of building a new scientific and democratic citizenship in addressing these increasingly hostile environments both on- and offline.

Key recommendations:
- There is need continuous and unrestricted research on social media to understanding what kind of discourse emerges during critical situations concerning the migration phenomenon.

- Researchers need to keep pace with social media development.

- Policymakers and researchers must be attuned with the contextual and cognitive limitations of both human users and social media.

- Policymakers, researchers, CSOs and migrant organisations need to play a central part in the regulation of digital platforms.

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