Pakistan in the Age of Algorithms: The Hidden Cost of Social Media

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Abstract

In the digital age, the dissemination of information has become more rapid, accessible, and influential than ever before. Alongside the benefits of global connectivity and communication, there has been a parallel rise in the use of digital platforms for propaganda and psychological operations. These tools are often employed to influence public opinion, manipulate perceptions, and destabilize societal harmony through the strategic spread of misinformation and disinformation. Social media algorithms, designed to enhance user engagement, inadvertently amplify polarizing content, creating echo chambers and deepening ideological divides. As a result, individuals, especially those frequently engaged in online spaces, become more susceptible to targeted narratives that may not always reflect reality. The psychological impact of repeated exposure to such content can include increased anxiety, social distrust, and radicalization. Moreover, these dynamics are not limited to any one region or group but are increasingly becoming a global phenomenon, affecting political discourse, public behaviour, and national security. Within the ambit of this context, having an adequate understanding of the mechanics of digital influence is indispensable, especially for developing effective countermeasures. Promoting digital literacy, encouraging critical thinking, and instituting transparent regulatory frameworks are essential steps toward safeguarding individuals and societies against the harmful effects of online manipulation. This research articulates the requisite need to recognize and address the evolving threats posed by algorithm-driven content ecosystems in the digital era.

Keywords: Social Media, Algorithms, Pakistan's Digital Landscape, Digital Misinformation, Social Media Propaganda

Introduction

Social media has revolutionized the way we communicate, access information, and engage with the world. Platforms like Facebook, Twitter, Instagram, and TikTok have become an integral part of daily life, connecting people globally. However, these platforms are designed to keep users engaged, often at the cost of their mental well-being, privacy, and social harmony. The article highlights the manipulation behind social media and its impact on society. While generally studies focus primarily on Western societies, its lessons are highly relevant to Pakistan, where social media has become a powerful force shaping politics, public opinion, and youth behaviour (Naz et al., 2024).

In recent years, the digital landscape in Pakistan has transformed rapidly, with social media emerging as not just a communication tool but a major cultural and political force. From influencing election narratives to redefining youth aspirations, these platforms have embedded themselves into the very fabric of Pakistani society. The unchecked influence of these platforms has introduced a set of unprecedented challenges, involving misinformation, emotional

manipulation, surveillance, and mental health crises, especially among vulnerable populations. As Pakistan continues to modernize its digital infrastructure, understanding the consequences of algorithm-driven media becomes crucial (Taj et al., 2024). This requires a closer examination of how algorithms silently influence thought processes, public behaviour, and national discourse.

Social Media Addiction and Mental Health

Pakistan has witnessed a significant increase in social media usage, with over 82 million internet users and 46 million active social media users as of 2023. On average, Pakistanis spend approximately 2.5 to 3 hours daily on social media, which raises concerns about vulnerability to online manipulation. Social media companies often operate based on a business model known as surveillance capitalism, where user data becomes the primary commodity. These platforms utilize artificial intelligence (AI) to monitor user behaviour, predict interests, and maintain engagement. Every like, comment, and share contribute to algorithms specifically designed to maximize screen time (Shafiq, 2022). In Pakistan, this dynamic has contributed to the rise of clickbait journalism, where engaging but misleading headlines attract more attention. Sensational news, sometimes lacking verification, has become more prevalent.

Furthermore, some YouTube influencers and TikTok content creators may focus on trending topics primarily for viewership, occasionally compromising factual accuracy. This system not only benefits tech companies financially but also keeps users engaged with content that may not always align with responsible information-sharing practices. Social media overuse is also affecting productivity among various segments of the population. Many students and professionals experience distractions stemming from excessive social media use, which may result in decreased efficiency in both academic and professional settings (Begum et al., 2024). Moreover, the psychological design of these platforms often encourages prolonged usage, leading to procrastination and diminished focus on real-life responsibilities. Beyond the immediate effects on productivity, the long-term psychological implications are also a matter of concern. Research indicates that excessive social media use can alter the brain's reward pathways, fostering dependencies akin to substance addiction. The release of dopamine—the 'feel-good' chemical—each time a user receives a like or comment can reinforce habitual behaviour (Saurwein & Spencer-Smith, 2021).

Over time, this may affect self-esteem, emotional stability, and even attention spans. In Pakistan, where discussions surrounding mental health are gradually evolving, the subtle impacts of such behavioural changes may remain underappreciated or attributed to unrelated factors. Additionally, the culture of curated perfection prevalent on social media can contribute to feelings of inadequacy, particularly among the youth in urban areas. Many young Pakistanis feel pressured to emulate online trends and lifestyles, which can lead to challenges related to self-image and well-being (Taj et al., 2024). Educational institutions and workplaces are still developing effective strategies to address these emerging psychological concerns, and awareness campaigns focused on healthy social media use could offer valuable support.

Furthermore, in rural and semi-urban areas, where digital literacy is limited, the addictive nature of social media poses additional dangers. Individuals unfamiliar with the manipulative design of these platforms are more likely to fall into time-wasting cycles and clickbait traps without recognizing their addictive patterns. The lack of targeted awareness campaigns and digital hygiene education has left vast segments of the population susceptible to long-term digital dependency, with few available resources to address it (Umar & Noman, 2024).

Fake News & Political Polarization

Pakistan has experienced a significant increase in misinformation and political polarization, partly driven by social media usage. Social media platforms have become active arenas where political narratives often clash, particularly during election periods. Fake news and digitally altered videos, including deepfakes, sometimes surface before elections, influencing public opinion. Addressing this challenge requires a collaborative effort among stakeholders to promote accurate information and discourage the spread of false narratives. Health-related misinformation also poses challenges, particularly during public health crises. For instance, during the COVID-19 pandemic, false information about vaccines circulated widely on platforms like WhatsApp and Facebook. Misleading claims, such as vaccines containing harmful microchips or targeting specific communities, gained traction among certain groups (Hussain et al., 2025). Such misinformation, while not representative of the broader population's stance, did impact vaccination efforts.

To counter this, public health campaigns have increasingly focused on digital literacy and credible health information dissemination. One of the major contributing factors to polarization is the manipulation of social media algorithms, which can create ideological echo chambers. In these environments, users are primarily exposed to content that aligns with their existing beliefs, which can hinder open dialogue and critical thinking. Political parties and social media influencers sometimes utilize these echo chambers to their advantage, shaping public discourse in ways that may deepen societal divides. Despite these challenges, digital platforms in Pakistan still hold the potential to promote positive civic engagement and political awareness. However, some instances of orchestrated online campaigns during elections, involving bots and paid influencers, have raised concerns (Iftikhar et al., 2025). Trending hashtags supporting or opposing political figures may not always emerge organically, as some digital media cells strategically influence discourse.

Addressing such practices requires transparent regulation and ethical digital campaigning to ensure that public perception reflects genuine sentiment (Nasir et al., 2025). Moreover, the use of artificial intelligence for targeted messaging can inadvertently amplify divisions when used irresponsibly. Content tailored to provoke emotional responses can intensify political debates, leading to prolonged engagement with divisive topics. While the economic model of social media benefits from sustained user activity, the resulting polarization can strain societal cohesion. Misinformation is not confined to politics; economic policies, religious beliefs, and historical narratives are also affected. Limited fact-checking resources and gaps in media literacy sometimes contribute to the unchecked spread of false information (Khattak et al., 2025). To address these issues, there is a growing recognition of the need for digital literacy programs that equip citizens with the skills to critically assess online content. Additionally, collaborative efforts between social media companies, fact-checking organizations, and government bodies can help mitigate the impact of false information. Promoting media literacy, transparency, and responsible online behaviour remains essential for maintaining social harmony and fostering informed public discourse in Pakistan.

The Mental Health Crisis

Social media addiction has serious mental health consequences, particularly among youth. Studies show that excessive social media use is linked to anxiety, depression, and low self-esteem. University students and teenagers, in particular, struggle with the pressure to present a perfect online image. The constant comparison to influencers, celebrities, and peers creates unrealistic expectations, leading to dissatisfaction with their own lives. When it comes to the suicidal tendencies among teenagers, they have gradually increased, partly due to cyberbullying and unrealistic beauty standards on platforms like Instagram and TikTok (Haque, 2024). Many young

people suffer silently, overwhelmed by the pressure to fit in, gain followers, and maintain an idealized digital persona. The rise of anonymous trolling and online harassment further exacerbates these issues. Victims of cyberbullying often experience isolation, emotional distress, and, in severe cases, suicidal thoughts.

Another alarming trend is the addictive nature of social media. The endless scrolling, dopamine-driven notifications, and personalized content keep users engaged for hours, reducing productivity and increasing procrastination. Many students and professionals find it difficult to concentrate on studies or work due to frequent social media distractions. The impact on sleep patterns is also significant, with many individuals staying up late to consume digital content, leading to fatigue and decreased mental clarity. Parents and teachers often struggle to monitor children's online activity (Fatima, 2025). Many children are exposed to inappropriate content at an early age, which can shape their perceptions and behaviour negatively. The lack of awareness among parents regarding digital parenting further compounds the issue, leaving young users vulnerable to harmful influences.

In Pakistan, addressing mental health challenges remains a sensitive issue due to prevailing social taboos. These cultural perceptions often make it difficult for adolescents to openly discuss mental health struggles, particularly when linked to online experiences. Many young individuals feel hesitant to seek help for anxiety or depression arising from digital interactions, fearing negative judgment from their families or communities. This hesitation can delay necessary interventions, allowing mental health challenges to escalate over time. One of the key factors contributing to this issue is the limited availability of mental health education in Pakistan's educational system. While some private schools in urban areas have begun to recognize the importance of digital wellness programs, most public schools have yet to incorporate mental health awareness into their curricula. This gap leaves many students unprepared to cope with emotional stressors related to social media use, which can significantly impact their well-being (Jamil, 2020). Despite these challenges, there is a growing awareness about the need to address mental health proactively. Efforts by non-governmental organizations and mental health advocates are gaining traction, promoting the inclusion of psychological support systems in schools.

Algorithmic Amplification of Hate Speech and Religious Intolerance in Pakistan

In Pakistan, the rise of social media has brought both opportunities and challenges. Algorithms, which underpin user interactions on social media platforms, are primarily designed to maximize engagement by promoting content that elicits strong reactions. While this model aims to keep users engaged, it can have unintended consequences in a diverse and religiously sensitive society like Pakistan. The amplification of divisive content has, in some cases, led to increased visibility of hate speech and religious intolerance. Pakistan is home to multiple religious and ethnic communities, including Christians, Hindus, Sikhs, Ahmadis, and various Muslim sects such as Shias and Ismailis (Raza & Aslam, 2024). Social media algorithms, however, can unintentionally highlight content that exacerbates existing social tensions. For example, controversial or inflammatory posts that provoke strong emotional responses often gain more visibility, sometimes leading to the spread of harmful narratives. This dynamic can create an environment where hate speech and divisive rhetoric thrive, posing risks to social harmony (Ahmad & Hussain, 2023).

One example that illustrates the real-world consequences of algorithmic amplification is the tragic case of Tahir Ahmad Naseem, who was killed after social media videos accused him of blasphemy (Khalil, 2024). Such incidents highlight the need for a more nuanced approach to content moderation, one that takes into account local cultural and religious contexts. Addressing these challenges requires a multi-faceted approach involving legal reforms, digital literacy, and collaboration between social media platforms and Pakistani stakeholders. While there is growing

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awareness of the issue, more proactive measures are needed to ensure that social media remains a platform for positive engagement rather than a conduit for divisive content. By fostering digital responsibility and implementing balanced policies, Pakistan can better manage the challenges of algorithmic content amplification while safeguarding social cohesion.

Political Weaponization of Algorithms and Suppression of Dissent in Pakistan

In Pakistan's rapidly evolving digital political environment, algorithms have emerged as influential tools, shaping communication and mobilization while also potentially enabling surveillance, manipulation, and suppression. Social media platforms, once viewed as empowering democratizing forces that amplified marginalized voices, have increasingly become sites of contention. A notable trend has emerged in recent years: the use of algorithms by various actors to manage dissent, disseminate disinformation, and control public discourse.

The political landscape in Pakistan has long been characterized by a delicate balance between democratic ideals and tendencies toward centralized control. Various political stakeholders, including civilian authorities, religious groups, and intelligence agencies, have historically been involved in efforts to shape public narratives. With the proliferation of digital platforms, this struggle appears to have intensified. Algorithms that determine content visibility may, whether by design or exploitation, lead to the marginalization of critical perspectives while giving prominence to narratives that align with dominant viewpoints.

A key mechanism in this context could involve the algorithmic amplification of content aligned with specific narratives, particularly during politically sensitive times such as protests, elections, or high-profile legal proceedings. Social media platforms might witness the rise of trending hashtags that appear to support institutional perspectives or criticize opposition voices. In some cases, these trends may be artificially driven through coordinated online activity, including networks of automated accounts or dedicated digital supporters. This tactic takes advantage of algorithms designed to reward engagement and repetition, potentially allowing messages that reflect dominant narratives to dominate social media feeds, thereby diminishing the visibility of alternative viewpoints.

If such practices become widespread, they may contribute to several possible challenges. One concern is that algorithmic manipulation might lead to the proliferation of content that promotes divisive rhetoric or disinformation, potentially fuelling social polarization. Moreover, there is a risk that such dynamics could undermine public trust in digital platforms as spaces for authentic discourse. Without effective measures to address these issues, the digital political landscape could become increasingly fragmented, making it harder to discern genuine public sentiment from engineered narratives.

Beyond crowding out opposition voices, algorithms have also facilitated more direct forms of censorship and harassment. Activists, journalists, and whistle-blowers critical of the government or its policies often find their content demoted or removed altogether. Some face online smear campaigns, cyberbullying, and even doxing (the public release of personal information), which are frequently initiated by state-linked digital operatives. For instance, women journalists in Pakistan have reported systematic online harassment after publishing pieces critical of state policies or state interference in civilian affairs (Begum, 2024). This suppression is not always the result of deliberate moderation by the platforms themselves. Instead, it often arises from user-reporting abuse and the manipulation of moderation algorithms. Coordinated groups may mass-report a target's content as hate speech or misinformation, triggering automatic takedowns. This tactic, commonly regarded as a brigading attack, exploits the very systems meant to protect users from harm, turning them into tools of silencing. While platforms like Facebook and Twitter

have guidelines to prevent such misuse, enforcement is often slow and inconsistent, especially in non-Western contexts like Pakistan (Saeed, 2025).

Surveillance and Profiling of Marginalized Communities Through Algorithmic Policing in Pakistan

The integration of artificial intelligence (AI) and machine learning into law enforcement practices is part of a broader effort to modernize security and public safety initiatives. While these technologies offer opportunities for enhancing surveillance and improving crime prevention, they also raise important questions regarding privacy, human rights, and civil liberties. Marginalized communities, including ethnic and religious minorities, low-income groups, and political dissidents, may face additional scrutiny under algorithmic policing practices, which, despite being framed as security enhancements, can unintentionally reinforce existing social inequalities (Iftikhar et al., 2024). Algorithmic policing encompasses the use of algorithms to predict, track, and analyze criminal activity. This approach includes AI-driven techniques to forecast potential crime locations, identify individuals who may be at risk of criminal involvement, and detect patterns based on historical data. As part of efforts to strengthen law enforcement, Pakistan has implemented various AI-based technologies, including facial recognition and predictive policing algorithms (Raza & Aslam, 2024). One notable example is the introduction of AI-powered facial recognition systems in major cities like Islamabad and Lahore in 2018. These systems, equipped with advanced surveillance capabilities, aim to monitor public spaces, identify suspects, and enhance public safety (Fatima, 2025).

However, concerns have been raised about potential privacy violations and the risk of profiling based on appearance, ethnicity, or religious identity. One research indicates that facial recognition technologies sometimes struggle with accuracy when identifying individuals from diverse backgrounds (Saurwein & Spencer-Smith, 2021). In a multicultural country like Pakistan, where ethnic diversity is significant, such challenges could inadvertently lead to bias or discrimination (Taj et al., 2024). Addressing these concerns requires a balanced approach that integrates technological advancements while upholding civil liberties. Enhancing transparency, implementing robust data protection policies, and fostering community engagement can help ensure that AI applications in law enforcement are fair and respectful of all citizens' rights. By prioritizing human rights and ensuring accountability, Pakistan can leverage technology for security without compromising individual freedoms.

Profiling Through Algorithmic Systems

The use of predictive algorithms in policing in Pakistan has led to the creation of detailed profiles on individuals, often based on questionable assumptions, biases, and historical data. These profiles are built using algorithms that analyse vast amounts of data, including social media activity, online behaviour, past criminal records, financial transactions, and even biometric data. This profiling process, while often justified as a means of identifying potential threats, carries with it several risks. A key issue is that algorithmic systems are only as good as the data they are trained on (Naz et al., 2024). In Pakistan, historical data on crime is often deeply influenced by structural inequalities, such as economic hardship, ethnic bias, and political marginalization. As a result, the algorithms may reinforce and perpetuate these inequalities by disproportionately profiling individuals from certain ethnic or socio-economic backgrounds as potential criminals or suspects (Saeed, 2021).

For instance, individuals from disadvantaged communities in urban slums or rural areas might be more likely to be flagged by these systems, not necessarily due to their actual behaviour but because they live in high-crime areas or are more likely to be involved in minor offenses due

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to poverty and lack of access to resources (Naz et al., 2024). In a similar vein, political activists or members of marginalized religious groups may find themselves unjustly targeted by law enforcement due to political or sectarian biases. Such profiling can have severe consequences. Individuals flagged by predictive algorithms may face increased surveillance, harassment, and even arrest based on tenuous or inaccurate assumptions (Raza & Aslam, 2024). In Pakistan, where political and religious affiliations often intersect with ethnic identity, the risk of discrimination is particularly acute. In some instances, these profiling systems have been used to target political opponents of the ruling party or suppress dissent during times of political unrest. For example, during protests or civil disobedience movements, activists have reported increased scrutiny and harassment by law enforcement, which may be a direct consequence of their digital profiles being flagged as risky by algorithmic systems (Khalil, 2024).

The Role of Social Media and Data Mining in Surveillance

Social media has become an increasingly important tool for surveillance and profiling in Pakistan. The government and law enforcement agencies routinely monitor social media platforms such as Facebook, Twitter, and WhatsApp, often using algorithmic tools to track individuals' online activity. Through data mining, relevant authorities can gather information about individuals' political affiliations, social networks, and even personal interests. This data is then analysed using machine learning algorithms to predict potential behaviour, including the likelihood of involvement in protests, demonstrations, or other forms of activism (Javed & Javed, 2023).

The Pakistani government has increasingly focused on monitoring and regulating online spaces to maintain public order and national security. Social media platforms, initially perceived as spaces for open dialogue and democratic engagement, have come under increased scrutiny, particularly during periods of political tension or unrest. While these measures aim to curb misinformation and maintain stability, they have raised debates around the balance between security and freedom of expression. During political unrest, social media accounts and websites are occasionally restricted to prevent the spread of inflammatory content. In some cases, posts deemed critical of state institutions may face moderation, either through removal or reduced visibility in social media feeds (Jamil, 2020). A prominent example is the regulation of hashtags related to politically sensitive movements, such as #FreeKashmir or #PTI, during periods of political upheaval. These hashtags, often associated with political activism or advocacy, have sometimes faced algorithmic filtering or moderation to prevent potential misuse for spreading unrest (Ahmad & Hussain, 2023).

While the government's stance stresses on the need to maintain social harmony and prevent conflict, concerns have emerged regarding the implications for digital rights and freedom of expression. Marginalized communities, including ethnic minorities such as Baloch and Pashtun populations, sometimes face challenges related to increased surveillance. The use of algorithmic tools for maintaining public safety can inadvertently impact these communities more significantly, highlighting the need for balanced and context-sensitive implementations (Khattak et al., 2025). Additionally, women activists and human rights defenders sometimes face online harassment, further complicating their engagement in public discourse. In response, some advocacy groups have called for more nuanced digital policies that both protect public safety and uphold individual rights (Khalil, 2024). It is essential to approach online regulation thoughtfully, balancing the need for security with the preservation of democratic freedoms. Strengthening digital literacy, improving moderation practices, and fostering open dialogues can help ensure that regulations serve public interest without infringing on civil liberties.

Propaganda and Psyops in the Digital Age: Repercussions on Pakistan's Digital Landscape

The use of algorithmic policing and profiling in Pakistan raises significant ethical and legal questions that need to be addressed through comprehensive reforms. First and foremost, there needs to be greater transparency in how data is collected, analysed, and used by law enforcement agencies. Citizens must have the right to know how their data is being used and have access to recourse mechanisms if they feel their privacy has been violated. Besides, there must be robust safeguards against the misuse of algorithmic systems to target marginalized communities (Hussain et al., 2025). Algorithmic transparency, fairness, and accountability should be prioritized in the development and deployment of predictive policing technologies. Independent audits of algorithmic systems, as well as oversight by civil society organizations and human rights advocates, can help ensure that these systems are not being used to perpetuate bias or discrimination (Saurwein & Spencer-Smith, 2021).

The implications of cross-border propaganda are far-reaching. Such campaigns undermine national unity, weaken public trust in government institutions, and foster an environment ripe for extremism. To combat this, Pakistan must collaborate with international partners to identify and dismantle hostile networks, educate the public about disinformation, and strengthen its digital security infrastructure (Saeed, 2025). In the global context, international lobbying firms and diaspora groups can also be used social media to engage in political smearing campaigns against Pakistan. These groups, with access to international audiences and resources, have the possibility to craft narratives that discredit Pakistan's global stance on various issues. For example, lobbying in the U.S. has targeted Pakistan's foreign policy and political positioning through paid advertisements, manipulated hashtags, and the creation of fake social media accounts (Fatima, 2025).

The 2024 general elections in Pakistan saw a significant increase in political advertising on platforms like Facebook and Instagram, with political parties spending millions to influence voters. This influx of ads and the inconsistent moderation of content have made social media platforms breeding grounds for misinformation, further polarizing the electorate. It is also likely that the impact of these propaganda efforts will extend beyond electoral politics, mainly by showcasing Pakistan's international reputation and influencing foreign policy decisions (Shafiq, 2022).

The negative effects of digital propaganda on Pakistan's social fabric are undeniable. Social polarization, exacerbated by disinformation campaigns, deepens ethnic, religious, and political divides, eroding social harmony. Repeated exposure to false or misleading narratives leads to an erosion of trust in traditional institutions such as the media, government, and educational systems. This growing mistrust is particularly evident in Pakistan, where scepticism toward authentic news sources has become widespread. Importantly, the economic consequences of misinformation are profound (Nasir, 2025). False reports about financial markets or government policies can trigger panic, destabilize markets, and erode investor confidence.

Thus, with a view to confronting these threats, Pakistan must adopt a comprehensive strategy that includes public education on media literacy, stronger cybersecurity measures, and international cooperation to combat cross-border disinformation campaigns. Failure to address these challenges will have long-lasting consequences for Pakistan's political, social, and economic stability.

Conclusion

The implications of digital propaganda are far-reaching, influencing elections, deepening social polarization, and undermining national security. Cross-border disinformation campaigns, often backed by hostile foreign entities, further exacerbate these challenges, creating an

environment where Pakistan's internal stability is jeopardized. Political smear campaigns, the manipulation of hashtags, and the use of bots have intensified the role of propaganda in shaping public discourse and influencing policy outcomes. The economic ramifications of misinformation also cannot be overlooked, as false narratives can destabilize markets, erode investor confidence, and damage Pakistan's global reputation.

Also, in order to effectively counter these threats, it is essential for Pakistan to develop a comprehensive strategy. This must include increasing media literacy, strengthening cybersecurity, and fostering international cooperation to combat disinformation. Addressing these challenges is indispensable to safeguarding Pakistan's democratic processes, maintaining social cohesion, and ensuring long-term national stability. As digital propaganda continues to evolve, so must the efforts to mitigate its impact, ensuring that Pakistan remains resilient against the forces that seek to divide and destabilize it.

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