

Digital technologies and media in environmental protests and the climate change movement

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Abstract. The relevance of the topic is determined by the fact that digital media have radically transformed environmental activism, turning it into a global communication process with its own narratives and symbols. The aim of the study was to analyse how different digital platforms alter the strategies, organisational models, and political influence of climate movements in various sociocultural contexts. The results of a quantitative analysis of over 270 tweets, presented in previous studies, as well as available discourse analyses of visual content on Instagram, supplemented by the author's comparative review of cases in Germany, Australia, and Kenya, were used, allowing for the identification of differences in the functioning of digital campaigns. The results showed that X serves the function of rapid coordination and mass dissemination of slogans, Instagram has become a tool for visual personalisation and emotional engagement, strengthening authentic connections between activists and the audience, YouTube provided a capacity for in – depth communication through documentary and educational materials, while Facebook was a key channel for local mobilisation, particularly in countries with limited access to traditional media. Comparative analysis demonstrated that a networked approach with systemic policy influence dominates in Germany, an emotional – visual strategy prevails in Australia, while in Kenya, digital platforms play a compensatory role, overcoming the weakness of institutional communication channels. The study revealed the influence of new formats – short videos and live streams, which amplify the effect of presence and transform local protests into global events. It was established that the combination of the ritualised protest forms of Fridays for Future and the performative actions of Extinction Rebellion created a synergy that compelled political institutions to respond to climate demands. At the same time, risks were identified: dependence on commercial platforms, the spread of misinformation by climate sceptics, and the uneven engagement of audiences in different countries. The conclusions emphasised that digital media have become not merely a communication tool but a structure – forming element of protest movements, shaping new frameworks of climate discourse. Overcoming the dichotomy of online and offline spaces proved effective for climate activism. The research results can be used by activists of environmental movements in their daily work on social networks for planning effective campaigns, creating content, and countering manipulations

Keywords: coordination; slogan; misinformation; emotional engagement; effect of presence

INTRODUCTION

In the 21st century, climate activism has acquired a global scale, transforming traditional forms of protest into complex networked movements that actively utilise digital technologies. Social media, particularly Instagram, X, YouTube, and other platforms, have become not only channels of communication but also spaces of symbolic production, where new narratives, identities, and images of activism are formed. At the same time, climate protests are increasingly accompanied by ambivalence: digital tools enable the mobilisation of millions, yet simultaneously contribute to the celebrityisation of politics and the simplification of

discourse. This creates a contradictory field in which climate movements strive to assert justice and systemic change but face the challenges of mediatisation, algorithmisation, and the capitalist logic of platforms. Studying how social media shape climate discourse is important not only for understanding activist strategy but also for assessing the potential of the digital environment in addressing the global ecological crisis.

M.C. Stoddart *et al.* (2025) analysed over two thousand publications on Instagram during COP26 (Conference of the Parties) and showed that this platform serves as a space

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for expressing critical counter – discourses, particularly regarding climate justice and the rights of indigenous peoples. The researchers pointed out that the visual nature of Instagram simultaneously contributes to the celebrityisation of climate policy, structuring the debate around images of “heroes” and “villains” among politicians and celebrities. This highlighted the dual role of Instagram as both a mobilisation tool and an arena for simplifying political content. A. Bussoletti *et al.* (2025) studied the media ecology of the Italian branch of Fridays for Future and identified fundamental contradictions of contemporary climate activism. They noted that the use of digital platforms, built on capitalist logic, to combat the climate crisis exacerbates environmental risks; however, activists attempted to resolve this dilemma by forming a new understanding of the digital footprint. They showed that by combining mainstream and alternative platforms, movements – built hybrid strategies while maintaining a radical anti – capitalist position. J. Goodman & T. Morton (2023) investigated the development of climate movements from the mid – 2000s and identified three core strategies: “transition”, “transformation”, and “emergency”. Their study, using examples from Germany, India, and Australia, showed that in different contexts, there is potential for convergence of themes, fostering cross – sectoral mobilisation. The authors emphasised that such mobilisation is necessary for effective climate policy and the enhancement of societal agency.

M. Jacqmarcq (2021) posited that although digital technologies have provided environmental movements with new tools for communication and international coordination, they have not caused radical transformation. The researcher emphasised that the neoliberal economic framework within which these technologies operate contradicted the goals of the movement, as it perpetuates overproduction and overconsumption, undermining the possibility of achieving significant change without overcoming this contradiction. H.K. Haastrup & P.D. Marshall (2024) analysed macro – and micro – influencers in the climate discourse on Instagram and identified a paradigmatic shift in visual communication. They emphasised that, alongside traditional celebrity advocacy, the authentic demonstration of sustainable practices by activists and entrepreneurs was gaining significance. Such communication created new role models and fostered audience engagement in real actions. M. Eilstrup-Sangiovanni & N. Hall (2024) showed that digital technologies have become a foundational tool for NGOs (Non – Governmental Organisations), such as Fridays for Future or 350.org. They found that social networks and “big data” are transforming organisational forms and tactics, yet simultaneously generating risks in defining objectives and limiting activists’ capabilities due to technological frameworks.

J.E. Hopke & L. Paris (2021) studied the role of social media in environmental activism and argued that they facilitate the rapid diffusion of tactics and create conditions for counter – hegemonic resistance. The authors showed that youth and indigenous communities use social

networks to advance demands for environmental justice and link local protests with global movements, such as climate strikes. E. Burch (2021) explored how Pacific Islanders used social media to combat the climate crisis and for counter – hegemonic resistance. The author indicated that platforms helped them challenge the bias of traditional media and highlight their own experience of existential threat from climate change, creating alternative narratives. Despite a rich body of research, it remains insufficiently clear how visual platforms simultaneously strengthen climate activism and reduce its content through mediatisation and celebrityisation. The question of how activists combine different media strategies in response to the structural constraints of digital technologies and how this affects the political effectiveness of movements requires further analysis.

The aim of the study was to elucidate the role of social media in transforming climate activism as a space of simultaneous mobilisation and celebrityisation of politics. The objectives of the study encompassed an analysis of the discursive practices of climate activism in social networks; identification of the contradictions between the mobilisational potential of digital platforms and their structural constraints; and an assessment of the impact of these media strategies on the legitimacy and political efficacy of climate movements.

MATERIALS AND METHODS

The research methodology was based on an interdisciplinary analysis of digital platforms and practices of environmental activism across three distinct national contexts – Germany, Australia, and Kenya. The selection of these specific case studies was justified by the differences in their socio – cultural conditions, political institutions, and media infrastructure, which allowed for the application of a comparative approach to identify both common and specific characteristics of digital mobilisation. The comparison was conducted according to the following criteria: digital platforms used, content format and type, nature of narratives, mobilisation tactics, level of media visualisation, intensity of information activity, as well as the socio – political outcomes arising in response to the digital campaigns. Additional parameters for comparison included the scale of audience reach, degree of message personalisation, role of the emotional component, dependence on traditional media, and level of institutional support.

The research was grounded in case studies, which involved reconstructing digital communication practices in each country through content analysis on X (2025), YouTube (2025), Instagram (2025), Facebook (2025), as well as on blogs and in online news. The collection of empirical material included the analysis of posts, video messages, microblogs, informational publications, thematic comments, and activist messages, which enabled the reconstruction of the structure and dynamics of digital activity. Particular attention was paid to how different types of platforms shape different levels of communicative interaction: from short, impulse – driven reactions to prolonged, structured discussion.

The German case is represented by the activity of the climate movement, distinguished by its systematic use of global social networks and a high regularity of digital presence. Within this case, empirical studies were analysed that illuminate the movement's communicative strategies on X, its engagement of youth, publication tempo, methods of forming information waves, and mechanisms for mobilising supporters. The comparison was conducted according to parameters of digital traffic intensity, dominant frames, types of multimedia content, and the capacity to generate political influence.

The Australian case focused on the work of the Climate Council (2025) and Bushfire Survivors for Climate Action (2025). Here, the specificities of personalised narratives related to the consequences of the 2019-2020 bushfires were considered, as well as the role of blogs, thematic websites, and social networks in constructing emotionally charged messages. The analysis was performed by juxtaposing methods of creating narratives about vulnerability and responsibility, levels of video content usage, and information verification mechanisms. The Kenyan case was based on sources reflecting the specifics of digital activity within a fragmented media environment. Materials from *The Elephant*, including analytics on land management and climate justice (Magedwa, 2024), allowed for tracing the logic of forming civic mobility in countries where traditional media have limited influence. A publication in the *Washington Post* (Richburg, 2024) served as an important source for assessing youth engagement in environmental discourse through social networks. The comparison in this case centred on the role of digital technologies as a compensatory tool under conditions of low institutional media support, as well as on the methods of information dissemination and circulation within network communities. The inclusion of these cases allowed for tracing how digital and media practices can influence the formation of political agendas at the level of parliamentary elections (Germany) or parliamentary hearings on the climate emergency (the United Kingdom).

An additional level of analysis included global movements, among which Extinction Rebellion (n.d.) was engaged as a model of performative – confrontational mobilisation. Comparing global and national cases enabled the identification of how digital practices influence the formation of political agendas, including parliamentary procedures and public debates. Thus, the methodological foundation of the research combines case studies, comparative analysis, and the reconstruction of communication practices of environmental movements based on digital activity statistics, empirical examples, analytical reports, and scholarly works. This methodology avoids reductionism and ensures a multidimensional approach to studying the phenomenon of digital environmental protests.

RESULTS

Digital media as a mobilisation tool in environmental protests

Digital technologies and media, primarily social networks, blogs, and video platforms, play a significant role

in environmental protests and the climate movement of the 21st century, shaping a new model of mobilisation and communication. Their effectiveness is determined not only by technical capabilities but also by the ability to transform environmental issues into visually and emotionally expressive content that captures the attention of a broad audience and stimulates participation.

X (2025) serves as a platform for the rapid dissemination of slogans, statistics, and calls to action. Thanks to the short message format and hashtag mechanism, it creates an effect of “digital resonance”, where local protests gain global coverage. In the case of the Fridays for Future (n.d.), it was X that allowed for the swift spread of information about upcoming actions and the synchronisation of activist activities across different countries. The high level of slogan repetition in tweets ensures their recognisability and entrenchment in the information space, thereby strengthening the movement's symbolic capital. YouTube (2025), in turn, facilitates the visualisation of climate problems and protest activity. Video content enables the creation of not only documentary evidence of actions but also educational and motivational clips that explain complex environmental processes in an accessible form. For activists, this serves as a means of forming a long – term communication strategy, as videos remain available in open access, forming an archive of the digital memory of protests. The example of the Extinction Rebellion (n.d.) demonstrates that disseminating videos of street blockades or performative actions has a dual function: on one hand, mobilisational, and on the other, reputational, as such materials are capable of exerting pressure on political elites through public resonance.

Instagram (2025) differs from other platforms in its emphasis on visual narratives, where images, infographics, and short videos play the main role. Environmental activists utilise Instagram to create an emotional effect through photographs of the consequences of climate change or symbolic actions of protesters. In countries with a developed visual culture, such as Australia, Instagram has become the primary platform for personalised campaigns where activists position themselves as “witnesses to the climate crisis” (Haastrup, 2022). This fosters a sense of personal involvement and trust from the audience, which enhances the effectiveness of mobilisational appeals. Scholarly analysis shows that content with high emotional load in visual media contributes not only to information dissemination but also to active participation in protests (Lu & Peng, 2024). Facebook (2025) retains significance as a tool for organisation and coordination, particularly in regions where it remains the leading social network. Its event functionality allows for the creation of announcements, groups, and communities that unite activists at the local level. In Kenya, it was Facebook and online news that served as mobilisation tools around issues of water scarcity and the consequences of climate change for agricultural regions (Akinyi *et al.*, 2023). Here, digital communication fulfils the role of a compensatory mechanism in situations where access to traditional media is limited or state – controlled.

Blogs by environmental activists, although less immediate than social networks, form a deeper discourse, providing the opportunity to present reasoned explanations of complex aspects of climate processes, provide references to scientific research, and engage experts. This creates a kind of bridge between the scientific community and the mass movement. In combination with short – content platforms, blogs perform analytical and educational functions, which helps maintain a balance between the emotional and rational in climate communication. The synergy of different digital platforms forms a multi – level mobilisation strategy. X creates an effect of instantaneous spread, Instagram appeals to emotions and visual symbols, YouTube provides depth and clarity, Facebook organises local communities, and blogs consolidate the analytical dimension of the discourse. Such multi – channel communication enhances the impact of environmental movements, as it allows for reaching diverse audiences – from youth, who perceive information in short video format, to experts and politicians seeking substantiated materials. In this context, digital media not only serve as a tool for engaging the public but also transform the very concept of protest, turning it into a continuous process of digital communication. Protest is no longer confined to the temporal framework of the street but continues in the digital space, where symbols, narratives, and discursive frames of climate activism are formed (Gaupp & Eker, 2024). In the study of environmental protests, comparative analysis of different countries gains importance, as the digital tools of activism exhibit variations depending on cultural, social, and political contexts. Although the general goal of most climate movements is to draw attention to the climate crisis and mobilise the public, the ways in which media resources are utilised demonstrate specificities that determine both the scale of protests and the degree of influence on state policy.

In Germany, Fridays for Future (n.d.) is studied as one of the most successful models of digital climate activism. For instance, in the research by A. Fernández-Zubietta *et al.* (2023), 111,844 unique tweets and retweets were collected under the hashtags “#climateStrike” and “#FridaysForFuture” to analyse the campaign for the Global Day of Climate Action on 25 September 2020. This indicates a significant digital volume of participation on X during the pandemic period. The article by H. Meyer *et al.* (2023) analyses the discourse surrounding German climate movements, particularly through X debates on Fridays for Future. This approach demonstrates that digital networks in Germany are becoming a space for both mobilisation and internal movement debates and conflicts. In Germany, the Fridays for Future movement demonstrates a well – documented pattern of digital platform use. An analysis of

the German segment of X (the period from June 2019 to May 2020) showed that 272,443 tweets and retweets were published with the #FridaysForFuture hashtag, of which 46,881 were original tweets and 225,562 were retweets. This volume of interactions is most pronounced during major protest actions – for example, on 20 September 2019, there were 13,934 tweets and 72,111 retweets specifically in the German – language segment of X. Simultaneously, this date coincided with a nationwide strike where, according to Clean Energy Wire estimates, protesters took to the streets in over 500 German cities – the total number of participants amounted to approximately 1.4 million people (Haßler *et al.*, 2023).

Australian examples indicate a different style of communication and mobilisation. The Climate Council organisation publishes transparent stories of people affected by the “Black Summer” (the 2019-2020 bushfires) on blogs and its website, particularly through narratives (Survivor Stories) from Bushfire Survivors for Climate Action (2025), which show concrete consequences – loss of property, changes in the duration of the bushfire season, start dates of the fire season, changes in the ecological resilience of regions. Through this organisation, public campaigns, appeals to government institutions, and media use are also organised: videos, social media posts with personal stories, calls for policy changes, participation in federal elections. Due to these activities, the environmental discourse in Australia is often shaped through emotionally and personally charged narratives. Furthermore, the Climate Council (2025) works extensively with blogs and media publications, disseminating explanations of climate phenomena in a style accessible to a broad audience – this approach is sometimes termed “science – popularising communication” within environmental activism.

In Kenya, digital media is one of the important channels of communication and activism in conditions of constraints on traditional media. The research by E. Mendenhall *et al.* (2025) analyses how digital activism in Kenya – a “shift from the digital centre to the periphery” – encourages local communities to use online networks for environmental mobilisation. Reports by The Elephant examine Kenya’s climate policy, particularly issues of land management and environmental justice raised through online analyses and publications (Magedwa, 2024). In the media space, attention to Kenyan youth as a new generation of activists is growing – for example, an article in the Washington Post describes how African online activists engage in the political narrative via social networks, highlighting corruption or climate challenges (Richburg, 2024). A comparison of digital media use is presented in Table 1.

Table 1. Comparative analysis of the utilisation of digital media in environmental protests in Germany, Australia, and Kenya

Country	Primary tools	Forms of activism	Features of utilisation	Outcomes and effects
Germany	X, YouTube	Mass rallies, global campaigns (Fridays for Future)	X – rapid dissemination of slogans, coordination of actions; YouTube – visualisation of protests, speeches by leaders	Globalisation of the movement, pressure on political elites, formation of the protest’s symbolic capital

Table 1. Continued

Country	Primary tools	Forms of activism	Features of utilisation	Outcomes and effects
Australia	Blogs, Instagram, Facebook	Personalised campaigns, visual actions, local rallies	Blogs – in – depth analysis and personal experience; Instagram – emotional visualisation; Facebook – community coordination	Strengthening activists' individual identity, increased emotional engagement, formation of long – term discourses
Kenya	Online news, Facebook, local social network campaigns	Regional initiatives, mobilisation of local communities	Online news – source of information; Social networks – tool for local coordination, overcoming the limitations of traditional media	Increased visibility of climate issues in the regions, strengthening of local mutual aid networks, compensation for the weakness of institutional media

Source: compiled by the author based on X. Zhang (2024), X (2025), YouTube (2025), Instagram (2025), Facebook (2025), E. Mendenhall *et al.* (2025)

The analysis of the presented case studies indicates that the choice of digital tools for environmental activism is determined both by the level of media infrastructure development and by the socio – cultural expectations of the audience. In Germany, effectiveness is ensured by the combination of global platforms capable of creating international resonance and increasing pressure on governments. In Australia, a significant factor is the cultural orientation towards visuality and personalisation, which transforms activism into a form of individual stories with a collective effect. In Kenya, digital technologies gain significance as a tool for survival under structural constraints, creating an opportunity for community activation even where support from institutional media is absent. This comparative analysis shows that while digital platforms have a universal character, their effectiveness depends on their ability to adapt to the specifics of a particular social context, and therefore, environmental movements can be viewed as globally connected but locally differentiated phenomena.

New media formats based on short, dynamic, and visually dense content have significantly transformed the communication strategies of environmental activism and have become a factor in its popularisation among broad social groups. Whereas traditional texts or static messages were oriented towards rational perception and the gradual formation of a reasoned position, short videos, streams, and visual narratives appeal to emotional engagement, create a sense of presence, and generate rapid and mass resonance. These formats not only increase the visibility of climate problems but also transform environmental protest into a constantly updated media event.

One of the roles is played by short videos, the dissemination of which is actively occurring on platforms such as TikTok, Instagram Reels, and YouTube Shorts. Their effectiveness is linked to the combination of two characteristics: brevity and high emotional impact. For example, footage of bushfires in Australia, filmed by activists in a 15-30 second format, spread with hashtags like #ClimateCrisis and became viral (Leimbach & Palmer, 2022). From a scientific perspective, this means that visual evidence of catastrophic events, through their compactness and repeatability, creates persistent symbols in the collective consciousness that transcend local contexts and shape the global climate

discourse. In this case, the short video acts not merely as informational material but as a kind of “memory frame” that cements the perception of the urgency of the problem.

Live streams (streams) create a different dimension of communication, as they provide the opportunity to join a protest in real time. In the scientific literature, this effect is described as the phenomenon of “digital presence”, where even those not physically participating in an action can feel a sense of involvement and collective identity. An example is the numerous streams of Extinction Rebellion actions in London, where the blocking of streets was broadcast online and attracted tens of thousands of viewers in various countries (Kountouris & Williams, 2023). Analysis of these cases confirms that streaming technologies have a dual effect: on the one hand, they ensure the transparency of the protest and counteract manipulation by traditional media, and on the other – they create a new type of activism that transcends physical localisation and transforms into a global event in virtual space. Visual narratives, which combine photos, graphics, infographics, and multimedia stories, allow for the construction of longer and more structured forms of communication. For instance, environmental organisations in Germany developed infographic materials explaining how a 1.5°C rise in average temperature would affect agriculture or marine ecosystems. In this case, visual narratives perform a cognitive function: they not only attract attention but also facilitate the transformation of complex scientific data into a comprehensible and convincing message. Research in communication sciences shows that visual materials increase the level of memorability and encourage long – term attitude change, which textual information does not always achieve. The analytical conclusion is that new media formats not only contribute to the dissemination of information about the climate crisis but also transform the very nature of activism. Whereas traditional protests were predominantly localised events with a limited audience, thanks to short videos and streams, they immediately acquire a global dimension. This changes the strategies of environmental movements: from planning physical actions, they transition to the parallel organisation of digital space, where the protest exists as a media event. As a result, new media formats become not just a tool but a structure –

forming element of contemporary climate activism, defining its scale, dynamics, and long – term consequences.

Global campaigns and the transformation of climate discourse under the influence of digital technologies

International initiatives like Fridays for Future (n.d.) and Extinction Rebellion (n.d.) have become phenomena in the global climate movement, as they have demonstrated how digital media can not only disseminate information about environmental problems but also transform them into a political and cultural agenda. Their mobilisational potential is explained by the combination of three factors: the use of new communication formats, the integration of local and global initiatives into a single network, and the ability to generate symbols of a universal character. Media coverage of these movements extends beyond the protest events themselves and includes broad discussion in society, the academic environment, and political institutions.

Fridays for Future, initiated by Greta Thunberg in 2018, grew from a local protest outside the Swedish parliament building into a global movement uniting millions of young people. At the core of its media strategy lies the systematic use of social networks, particularly X and YouTube, where messages from Thunberg and mass actions by school youth acquired a viral character. One element was the formation of the recognisable symbol of the “school strike for climate”, which was easily reproduced in various countries. Analysis shows that precisely the regularity and predictability of the actions (every Friday) created an effect of protest ritualisation, thus ensuring its persistence in the media space.

Extinction Rebellion (n.d.), which emerged in the United Kingdom in 2018, has a different media logic. While Fridays for Future is oriented towards long – term and symbolic mobilisation, Extinction Rebellion bets on performativity and radical forms of protest that create high visibility and drama. For instance, in April 2019, activists paralysed central London by blocking bridges, roads, and subway stations, leading to over 1,000 arrests during 10 days of protests (Conrad, 2022). In the autumn of the same year, XR organised a mass “International Rebellion” in 60 cities worldwide, including Berlin, New York, and Sydney, with actions that included staged “deaths” in public spaces and the use of the hourglass symbol as a metaphor for running out of time (Extinction Rebellion UK, 2019). In this case, media coverage is based not so much on sequence and repetition but on the effect of surprise and disruption of the everyday, which attracts audience attention. This indicates that the movement’s media strategy is based on maximising visibility, even if accompanied by controversy or negative perception.

The mobilisational potential of the two initiatives differs substantially yet is simultaneously complementary. Fridays for Future ensures mass participation and longevity through youth strikes and educational messaging, whereas Extinction Rebellion banks on shock tactics and the use of the city’s symbolic space as a stage for climate

performance. In scientific terms, this can be interpreted as the coexistence of two models of digital and media activism: an inclusive model, which integrates broad social groups, and a confrontational model, which provokes radical debate. The result is synergy: the first movement creates a long – term foundation, the second – amplifies the sense of urgency and crisis. The media coverage of both initiatives also has a significant political dimension. In the case of Fridays for Future, attention from international media contributed to the climate issue entering the agenda of parliamentary elections in Germany, as well as being incorporated into the European Union’s climate policy, notably in the adoption of the European Green Deal (Pollex & Berker, 2024). Extinction Rebellion, despite its radicalism, stimulated the emergence of parliamentary hearings in the United Kingdom on the climate emergency, indicating the influence of even those forms of activism not always supported by the public majority. From a scientific perspective, this confirms the thesis that the media presence of contemporary movements is not an additional, but a central resource for political influence.

In the sphere of public opinion formation, digital media perform two interrelated functions: informational – communicative and mobilisation – integrative. The former is manifested in the fact that, thanks to social platforms, citizens have access to diverse data sources, including official announcements, alternative expert assessments, and content from the event participants themselves. This radically alters the balance of power in the public sphere: no longer do only state or corporate structures define the discourse frame, but local communities or individual actors are also able to influence the agenda (Gaupp & Eker, 2024). For example, analysis shows that in the case of the 2019–2020 political protests in Hong Kong, social media created an effect of “extended presence”, where even those who could not physically participate in the events became part of the protest movement through information dissemination, the formation of networked solidarity, and influence on the international audience (Xinyue, 2023). The mobilisation – integrative function is manifested in the ability of digital media to convert public outrage into organised action. This involves the visualisation of protest messages and the possibility of transnational communication. If previously mobilisation had depended on traditional civil society structures, it could also emerge spontaneously, based on emotional triggers spread through the network. This is confirmed by studies of the Black Lives Matter Movement (2021), which achieved global scale precisely because digital media transformed a local event – the death of George Floyd – into a symbolic marker of global injustice. As a result, digital communication not only informed but also structurally united various social groups into a cross – border movement.

The influence of digital media on political decisions is evident on several planes. Firstly, they form a new logic of political representation, where public sentiment is measured not only through traditional sociological surveys but

also through the analysis of data on social networks. Big data processing algorithms allow political institutions to track the dynamics of public sentiment in real time, forcing political actors to adjust their strategies more promptly. An example is the European Commission's reaction to a wave of criticism on X and Facebook following publications about the "insufficient speed" of implementing the European Green Deal: public pressure in the digital space forced the institutions to intensify communication regarding specific stages of the programme's implementation and to increase financial support for individual projects. Secondly, digital media act as a channel of direct influence on political decisions through mass mobilisation, which creates an "urgency effect". In conditions where hashtags or visual images go viral, governments face the threat of delegitimisation if they ignore societal demands. Thus, digital pressure gains strength not only through the number of participants but also through the impossibility of isolating information within national borders.

Thirdly, digital media are increasingly shaping new forms of diplomatic influence, as international actors actively monitor narratives in the digital space. Russia's war against Ukraine demonstrated that media dynamics on X, TikTok, or Telegram can be no less significant for mobilising international support than official diplomatic channels. Thanks to the active use of digital media by the Ukrainian side, it was possible not only to consolidate domestic society but also to create a strong information front that influenced decisions on sanctions, weapons supplies, and humanitarian aid. This confirms the thesis that digital media are becoming a factor in geopolitics, as they are capable of not only reflecting but also modelling international relations (Song, 2025). Digital campaigns in the sphere of climate policy have gained significance in transforming the global agenda, as they have precisely provided a new quality of communication between activists, the public, political structures, and international institutions. Their effects should be considered comprehensively, as digital media not only disseminate information but also set the framework for interpreting climate problems, alter the configuration of political pressure, and bring to the fore new challenges, among which the phenomena of manipulation and disinformation are notable. The influence of these processes is traceable at several levels – societal, political, and international – which allows us to speak of the systemic nature of the digital transformation of climate communication (Parks, 2025).

At the societal level, digital campaigns are changing the very structure of perception of the climate narrative. If environmental issues were previously perceived mostly as remote or secondary, then thanks to the interactive formats of social networks and video platforms, they have become part of the daily information flow. One role is played by emotional visualisation: short videos of natural disasters, infographics on carbon emissions, or personal stories of activists create a sense of direct involvement and

lower the barrier of the problem's abstractness. Fridays for Future campaigns via X and YouTube changed the prioritisation of topics among youth groups: climate came to dominate over issues traditionally at the centre of political socialisation (economic stability, education, employment). Similar processes are occurring in Australia, where through Instagram and Facebook, activists have gained support even among those social groups that previously did not associate themselves with the environmental movement (Hausmann *et al.*, 2025). At the political level, digital campaigns amplify the mechanisms of public influence on decision – making. The digital space creates an "accelerated reaction effect": governments cannot ignore mass visual or textual narratives that go viral. This was the case with the forest fires in Australia, where videos and photos on social networks created a global wave of solidarity and forced the government to reconsider its approach to climate policy. In Kenya, similar processes manifested in local campaigns against deforestation: although their organisers had no significant financial resources, thanks to dissemination through social networks they were able to pressure the government, which led to the strengthening of regulatory restrictions (Shyrokykh & Dellmuth, 2025). Thus, digital campaigns become a catalyst for political change, transforming public outrage into formalised decisions at the level of parliaments, ministries, or municipalities.

At the international level, digital media contribute not only to the circulation of climate narratives but also to the strengthening of global dialogue. Transnational campaigns, such as Extinction Rebellion (n.d.), demonstrate that digital technologies create solidarity networks that transcend nation – states. Participants from different countries not only adopt protest forms but also integrate local problems into the global discourse, emphasising that the climate crisis is universal. In this context, digital media play the role of "infrastructure for global politics", as they precisely allow for the simultaneous coordination of actions, dissemination of new knowledge, and exertion of moral pressure on international institutions.

However, alongside positive effects, digital campaigns also have a downside – the spread of disinformation and manipulative strategies. Climate scepticism actively uses the same media tools as activists, forming counter – narratives. Campaigns are spread on Facebook and X that cast doubt on scientific data regarding global warming or focus attention on the economic risks of transitioning to renewable energy. Research shows that in the USA and Australia, it is precisely through social networks that companies associated with coal or oil extraction have spread "economically justified" doubts about the necessity of climate reforms. This creates information chaos in which public opinion becomes polarised, and political decisions can be delayed. To summarise the effects of digital campaigns, it is advisable to present them in the form of Table 2, which demonstrates different levels of influence and their associated consequences.

Table 2. Effects of digital campaigns in the realm of climate policy

Level of influence	Key effects	Examples	Potential risks
Society	Change in topic prioritisation, increased sensitivity to the climate narrative, engagement of new demographic groups	Fridays for Future in Germany via YouTube and X; Instagram campaigns in Australia	Overload of emotional narratives, fatigue from persistent anxiety
Politics	Increased pressure on governments, acceleration of responses, inclusion of ecology in national agendas	Australian government decisions following extensive wildfires; Kenyan regulations on deforestation	Populism, hasty decision – making under the pressure of mass campaigns
International relations	Creation of global solidarity networks, influence on negotiations within international institutions	Extinction Rebellion as a transnational movement; Fridays for Future at UN climate summits	Use of climate rhetoric for political pressure between states
Information environment	Formation of alternative narratives, mass dissemination of climate data	Videos and infographics on the consequences of climate change	Disinformation campaigns by climate sceptics, corporate manipulation

Source: compiled by the author based on Fridays for Future (n.d.), Extinction Rebellion (n.d.), T. Leimbach & J. Palmer (2022); Y. Lu & Y. Peng (2024), E. Mendenhall *et al.* (2025)

Analysis of the provided table demonstrates that digital campaigns possess an ambivalent character. They simultaneously amplify climate discourse and create risks of its distortion. In the societal dimension, the primary outcome is the raising of awareness and engagement of broad groups of citizens; however, excessive emotional visualisation can lead to diminished effect through “information fatigue”. In the political dimension, digital campaigns facilitate concrete changes in legislation and government strategies, but concurrently increase the likelihood of populism, when politicians make decisions not based on long – term strategies but under pressure from mass opinion. In the international context, digital media act as a powerful tool for solidarity, but at the same time, they can be used as an instrument of diplomatic competition and geopolitical pressure. Finally, the information environment demonstrates the greatest vulnerability: alongside the dissemination of scientifically substantiated data, it becomes a platform for disinformation campaigns, complicating the formation of consensus on climate solutions.

DISCUSSION

Based on the conducted analysis, it has been shown that digital technologies and media have radically transformed climate activism, endowing it with new organisational forms, mobilisation strategies, and channels of political influence. Compared to previous studies, the results revealed both points of intersection and differences in the ways digital platforms are used, as well as in the discursive strategies of different actors. In the work of H. Vu *et al.* (2021), content analysis of Facebook posts by international climate non – governmental organisations showed the dominance of a “diagnostic” frame, focused on defining the problems of climate change, while messaging aimed at demonstrating the effectiveness of proposed solutions remained marginal. The authors found that the greatest attention was received by the consequences of climate change already manifesting in the present, whereas emphases on tools for overcoming the crisis were covered significantly less frequently. Comparison with the obtained results confirmed that a similar

dominance of problematisation was evident in the analysed cases, for instance, in the German Fridays for Future, where the mass nature of protests was maintained through constant reminders of future threats. At the same time, the research showed that in the cases of Australia and Kenya, digital platforms served not only to articulate problems but also for the personalisation of solutions and mobilisation of specific population groups. In contrast to the conclusions of H. Vu *et al.*, where communication was reduced to the discursive construction of the problem, the results of the analysis proved that the success of mobilisation depended on the ability to combine diagnostic and motivational levels, creating emotional yet pragmatic messages, precisely through short video formats and streaming broadcasts.

The study by D. Shim (2024) focused on the visual communication of the Fridays for Future movement on Instagram, emphasising the localisation of impacts, the use of performances, and the visualisation of conflictual politics. It was established that it was precisely personalisation and artistic means that allowed activists to become “new narrators” of the climate discourse, moving beyond traditional media coverage. Comparison with the obtained results confirmed that Instagram became an instrument of visual personalisation and emotional interaction; however, the research demonstrated an even wider range of digital platform functions. In contrast to D. Shim’s exclusive focus on Instagram, the analysis showed that the success of movements was determined by the synergy of different media: X ensured speed and coordination, YouTube – depth of communication, and Facebook – local organisation, particularly in countries with less developed traditional media. Thus, the conclusions confirmed the significance of visual communication but simultaneously pointed to the necessity of considering the complex interaction between platforms, which transformed protest not only into a visual but also into a multi – channel media process.

The study by M.O. Márkus (2022) showed that climate activists on Instagram applied the logic of social influencers in their activities, manifested in a high level of personalisation and the demonstration of daily ecological

practices. The conducted research confirmed this trend but emphasised its ambivalent character. Personalisation contributed to increased trust and the formation of a stable emotional connection between activists and the audience, but at the same time limited the ability of movements to create universal symbols that could be scaled globally, as was the case with Fridays for Future. Thus, the results of M.O. Márkus resonated with the conclusions about the effectiveness of micro – influencers in mobilisation; however, the context of this study demonstrated that excessive reliance on this logic threatened the fragmentation of the climate discourse. In the work of B. León *et al.* (2022), the conclusion was the significance of visual communication and its principles: authenticity, narrativity, localisation, and demonstration of consequences for specific communities. The conducted analysis confirmed this logic, for example, in the case of Australia, where personal stories of those affected by fires gained media force precisely through emotional and visual representation. However, the comparative dimension showed that this approach did not work equally in all contexts. While in Australia it fostered a high level of public empathy, in Germany the emphasis remained on symbolic universality (“school strike” as a global sign), which allowed scaling the protest without excessive reliance on individual stories. This indicated that the conclusions of B. León *et al.* had limited applicability outside the context of localised crises.

The work of Z. Tanveer (2024) emphasised that digital tools radically transformed climate movements, creating hybrid models of mobilisation where online coordination and offline actions were combined. The conducted research confirmed this thesis but simultaneously expanded it, showing that it was precisely digital technologies that not only contributed to organisational flexibility but also transformed the very nature of protest. Protest ceased to be an event in the narrow sense and became a prolonged digital process in which symbols, narratives, and discursive frames were formed. Thus, while Z. Tanveer focused on hybridity as an organisational characteristic, the results of the research showed that this hybridity extended to the level of political influence, making movements not merely media subjects but factors of the political process. In the work of V. Rizzoli *et al.* (2024), analysis of tweets about climate change showed that the Fridays for Future movement initially dominated online discussions; however, the content of these discussions varied substantially depending on the national context. It was established that users from countries with high pollution levels and short – term orientation in their communicative practices focused on reactive measures regarding already existing climate change consequences, and sometimes even resorted to problem denial as a defence mechanism. Comparison with the obtained conclusions revealed a similarity in identifying fragmentation and heterogeneity in digital discussions, reflecting the uneven effectiveness of online communication. However, the conducted analysis demonstrated a broader spectrum of consequences: in the cases of Australia and Kenya,

digital strategies allowed overcoming structural and informational constraints, forming localised narratives that not only reacted to consequences but also proposed new future scenarios. This expanded the framework of interpretation, showing that digital platforms are capable of simultaneously reproducing reactivity and creating proactive discourses.

The analysis by A. Kavada & D. Specht (2022) focused on the variety of digital tools used by environmental movements for organisation, coordination, and narrative building. The authors emphasised that tools such as Instagram, digital mapping, and other visual practices allowed activists to overcome geographical barriers, draw attention to environmental injustice, and attract new participants to the movement. Comparison with the results of this research confirmed this pattern, particularly in the example of the global campaigns Fridays for Future and Extinction Rebellion, which achieved synergy between mass scale and spectacle through media. At the same time, analysis demonstrated a deeper division of functions between platforms: X proved optimal for rapid coordination, Instagram for emotional personalisation, YouTube for in – depth problem explanation, while Facebook for local organisation. This allowed for the specification of the conclusions by A. Kavada & D. Specht, emphasising that the comprehensive use of platforms ensured not only the expansion of the spatial scales of activism but also the internal differentiation of its communication strategies.

Summarising the results, it can be argued that previous studies concentrated on separate dimensions of digital communication – from thematic fragmentation and national differences to the instrumental potential of various media and discursive frames in the messages of climate organisations. In contrast, the conducted analysis allowed for the integration of these approaches into a broader picture, demonstrating that digital media not only enhanced mobilisation potential but also transformed the very nature of climate protest, turning it into a constant, multi – channel communication process. This confirmed the necessity of moving beyond the traditional “online – offline” dichotomy and proved that future research should consider digital activism as a complex social phenomenon where technologies, political structures, and cultural practices intersect.

CONCLUSIONS

The conducted analysis has established that digital technologies and media have transformed environmental protests and climate activism, becoming not only a tool of communication but also a structure – forming element that defines the organisational forms, mobilisation strategies, and political influence of movements. The research revealed that social networks, such as X, Instagram, Facebook, and YouTube, perform differentiated functions: X provided the rapid dissemination of slogans and coordination of mass actions, as in the case of the German Fridays for Future; Instagram became key for visual personalisation and emotional engagement through imagery and short videos, enabling activists to build authentic relationships with

audiences; YouTube ensured depth of communication through documentary and educational materials; and Facebook served as a platform for local organisation, for instance in regions with limited access to traditional media, as in Kenya. A comparative analysis of the cases of Germany, Australia, and Kenya demonstrated that the effectiveness of digital strategies significantly depended on the socio – cultural and political context: in Germany, a model of global – network activism was observed, focusing on mass participation and systemic influence on the political agenda; in Australia, an emotional – visual approach prevailed, utilising personalised narratives and stories of those affected; in Kenya, digital technologies performed a compensatory function, overcoming the limitations of institutional media and ensuring the mobilisation of local communities.

The research also identified the influence of new media formats, particularly short videos (TikTok, Reels, Shorts) and streaming broadcasts, which, due to their conciseness, visual richness, and effect of real – time presence, radically enhanced the resonance of protest events, transforming them from local actions into global media events, as occurred during the Extinction Rebellion campaigns in London. Global initiatives, such as Fridays for Future and Extinction Rebellion, achieved synergy of mobilisation models thanks to digital platforms: the former ensured mass participation and longevity through the ritualisation of protest (weekly Friday strikes), while the latter achieved high visibility and drama through performative and confrontational actions, which together amplified pressure on political institutions, compelling the governments of Germany and the United Kingdom to include climate issues in the agenda of parliamentary hearings and national strategies. However, the research also uncovered significant risks

and contradictions of digital activism: firstly, activists faced the ethical dilemma of using platforms based on capitalist logic and causing environmental harm to fight the very systemic crises these same technologies exacerbate; secondly, the polarisation of the information space was observed due to the spread of disinformation campaigns by climate sceptics, who used the same digital tools to manipulate public opinion; thirdly, communication effectiveness proved to be uneven – analysis of tweets showed that users from the most polluted countries and countries with a short – term orientation more frequently discussed reactive measures regarding the consequences of climate change, sometimes even denying the problem, which complicated the representation of alternative future scenarios. The main limitation of the research was its methodological reliance on the analysis of already published data and case studies, rather than conducting primary empirical collection and analysis of digital content, which may have limited the depth and originality of the conclusions. A promising direction for future research is conducting comparative longitudinal analysis of big data from various digital platforms to identify long – term trends in the transformation of climate discourse and its impact on specific political decisions in different countries.

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