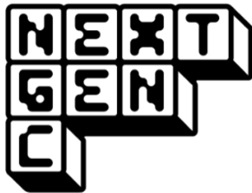
LSE THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

LSECities



NextGenC Working Papers

Digital Technologies and the Political Participation of Urban Youth: a global review

by Imogen Hamilton-Jones, Philipp Rode and Andres Lombana Bermudez

28 March 2024

Acknowledgements

This NextGenC Working Paper was prepared as part of the "Next Generation Urban Governance in Colombia's vanguard intermediary Cities" (NextGenC) project. It is funded through the TYPCities Programme by Fondation Botnar. The authors would like to thank our academic partners from Los Andes University (Bogota) and ICESI University (Cali) for the feedback and support. They would also like to thank Adam Greenfield for his guidance.

1 Introduction

On the streets of Hong Kong in 2014, student pro-democracy protesters co-ordinated their movements in real-time, switching between messaging platforms to evade the authorities (King-wa 2023). Across the globe in Sao Paulo, thousands of young Facebook-ers from the favelas began filming funk-fuelled flash mobs in high-end shopping malls, claiming their space in a city sharply divided by socio-economic and racial inequalities. And in the capital of Iowa, Des Moines, a programme of participatory digital mapping and storytelling engaged young people in connecting their personal experiences of life in low-income neighbourhoods with city-wide urban planning and political action (Alenka et al 2017).

The claim that digital technologies have radically reshaped youth political participation has become commonplace. Over the past several decades, research has theorised, documented and complicated the narrative that digital tools – from social networks to government data stores – have opened up a new era for youth politics. This literature review asks what digital political engagement means for young people in cities globally. Which types of digital technology are being used by urban youth and city governments to build youth political participation? Which young people are able to access and engage with these technologies? What kinds of political potential and risks are arising from youth digital participation in urban politics?

This review defines youth political participation broadly, in line with the spirit of the NextGenC project. We include not only acts of direct political participation - such as standing for election on an e-Youth Council or sharing a digital petition on social media, but also non-traditional forms of political activity that emerge from digital 'participatory cultures' (Jenkins et al 2015). These range from the political subjectivities shaped and expressed by selfie-taking (Senft & Baym 2015) to the viral memes that subtly reshape the boundaries of political discourse through humour (Dynel et al 2021; Mihailidis 2020; Pearce & Hajizada 2014).

Digital participation was once cast as a distinct domain of political practice, separate from offline politics, but scholars have pointed out that this boundary is hard to justify given the interconnections between online and offline political space. In response, they reject the term ''digital participation'', preferring to define this kind of participation as "internet-assisted" (Nielsen 2009, 2011), "digitally enabled" (Earl & Kimport 2011) or "digitally networked" (Bennett & Segerberg 2012). In urban contexts, political participation is rarely exclusively digital: protestors occupy physical and digital urban space simultaneously; tools for political communication - like physical placards or projectors casting text and images onto buildings - are amplified by digital film and photography and then by waves of likes, shares and commentary on social media. Although this review uses the term 'digital participation', we define it as a fluid political practice embedded within and inseparable from offline political contexts and practices.

Similarly, there is no hard-and-fast division between hardware and software shaping and enabling urban youth political participation. Hardware - material objects like mobile phone cameras or broadband hubs - connects youth with immaterial networks and softwares that enable their participation in politics. For the Hong Kong student protesters, for example, foreign SIM cards and phones with bluetooth connections were a fundamental prerequisite of their access to messaging applications (King-wa 2023). Acknowledging that software is inseparable from hardware, this review, however, takes software as its entry point to understanding digital technologies. We have identified three categories of digital technologies which emerge in the literature as crucial to the political participation of urban youth (see Fig 1).

Primarily driven by urban youth	**Social media and messaging apps (A)**	E.g. TikTok, Instagram, Facebook, Twitter, Youtube, Soundcloud, Reddit, Weibo, Twitch, Snapchat, Whatsapp, Telegram, Signal
	Citizen science and other co-production tools (B)	E.g. Slack, Google Docs, Just Giving, Change.org, Doodle Polls, Digital storytelling platforms, Photovoice
Primarily driven by city governments	**E-participation and civic tech (C)**	E.g. City data stores, e-Youth Councils, Participatory GIS

Fig 1: Three categories of digital tools for urban youth political participation

This paper sets out to provide an 'organising review', which synthesises a disparate body of emerging research in order to lay the groundwork for assessment and theorising (Leidner 2018). Having sketched out the above three categories of relevant digital technologies from initial scoping, we began to map existing research across the three categories, by testing the amount of literature published in relation to each category. Searches on Web of Science, Scopus and Google Scholar (see Appendix A) revealed that existing research is strongly focused on category A: social media and messaging apps.

Based on the heavy concentration on social media in literature to date, our narrative review focuses initially, and in most depth, on debates surrounding social media and messaging apps. We explore various theorisations of networked politics and ask how they land in urban contexts, before reviewing empirical studies of urban youth participation. These studies are drawn together to illuminate 1) new repertoires of digital youth participation, 2) ways in which socio-demographic and structural barriers to participation have been challenged and reproduced by digital technologies, and 3) the risks of digital participation for urban youth - from the commercialisation of politics to radicalisation and cyber-repression.

This review then turns to categories B and C: youth-driven digital co-production and citizen science, and city government initiatives to engage young people in e-participation and civic tech. We set out key academic debates in relation to different empirical cases under each category. Finally, we propose an adaptation of a recent typology of digital participation (George and Leidner 2019), to the context of urban youth in each category addressed by this review, and set out the central knowledge gaps revealed by this review.

2 Social media and messaging apps

Definitions of social media have shifted since the term was first used in 1994. Before 2010, social media were understood as Internet-based platforms to connect people with common interests; after 2010, researchers instead cast social media as tools for creating, sharing and deriving value from user-generated content (Aichner et al 2021). Since the inception of these fast evolving 'channels of masspersonal communication' (Carr and Hayes 2015), however, scholars have frequently framed social media as a site of potential for political participation.

In early literature, social media is described as replicating and extending offline practices of political participation - from political socialisation, expression and debate, to the organisation and communication of direct action (Foot & Schneider, 2002, Margolis & Resnick, 2000). The language of social media mimics the offline world - it feels natural to draw analogies between pinning a Tweet to a feed or a poster to a notice board, upvoting a comment on a neighourhood subreddit and raising your hand to vote in a local committee meeting.

Over time however, social media theorists have begun to map the distinct characteristics of 'networked publics' online. The concept of "networked publics" refers to the new kind of spaces and communities that emerge as people gather, connect, and share on social media (boyd, 2010; Ito, 2008). "Publics can be reactors, (re)makers and (re)distributors, engaging in shared culture and knowledge through discourse and social exchange as well as through acts of media reception." (Ito, 2008) Hence, the term "networked publics" highlights the active forms of participation that people develop as they practice new forms of many-to-many communication distributing, aggregating, and producing information (e.g. updates, political commentary, memes, news). A ''networked public'' could be, for example, one that emerges as young people tag content with a particular #hashtag on social media platforms during political controversies, pop culture events like concerts or scandals, protests, or activist campaigns. These publics are defined by their persistence, searchability, replicability and invisible audiences (boyd 2008); increasingly, researchers have questioned the ways in which such conditions shape the dynamics of political participation in unique and perhaps novel ways.

A central trend identified by social media theorists is the individualisation of political participation on social media. Social media – operating through 'networked individualism' where personalised communities develop around individual rather than collective interests (Baym 2015) – drive 'the personalization of politics' (Bennett 2012). In a seminal article, Bennett outlines 'the rise of individually expressive personal action frames which displace collective action frames' (2012: pp.). For political movements, this translates into participants engaging with a range of causes simultaneously

with varying levels of interest and commitment (Selander & Jarvenpaa 2016; Vaast et al. 2017, Bennett & Segerberg 2013). Collective action becomes connective action, as participants in social media movements are connected by ties of communication and emotion rather than necessarily holding shared political principles, causes or aims (George & Leidner 2019).

A second feature of political participation on social media that has been emphasised is its potential scope: "[t]he speed, reliability, scale and low cost of digital networks are what enable the great scope and reach of contemporary activism" (Joyce 2010, p. viii). Connective action can unfold rapidly in time and space (Jost et al. 2018; Zeitzoff 2017), forging a new era of 'chaotic, turbulent pluralism', where overlapping constellations of movements compete for space (Margetts et al 2016, pp.) Most movements on social media are short-lived, but sometimes 'tiny acts' of online participation scale up fast, rippling through connective action and sparking a dramatic escalation 'from expression and dissemination of dissatisfaction and dissent to rebellion, revolt, or actions on the streets' (Margetts et al 2016, pp.). A strand of literature explores how the momentum and scope of political movements on social media is driven by emotional and affective experiences online. Gerbaudo (2016) theorises moments of 'digital enthusiasm' which arise on Facebook around key protest events in the 2011 Egyptian revolution and the Spanish Indignados: 'Digital enthusiasm', he argues 'generated a process of emotional contagion that helped establish propitious psychological conditions for mass protest participation' (2016 p. 254).

Theorists, so far, have concentrated their attention on global and national political connections forged by social media; much less has been written about how social media impacts local or urban politics and the particular participatory dynamics of city streets. Zur (2024) argues that political participation in the digital city remains generally undertheorised; she proposes the concept of 'place-oriented digital agency' to understand the ways in which new forms of connective action inform the spatial politics of neighbourhoods. Other studies focus on the hybrid space of urban protests, where forms of 'place-oriented digital agency' might be especially visible. Karduni et al (2010) argue that social media, local community, and public space work together to organise and motivate protests. Johnson (2022) discusses how social media creates an 'an amplified public space', allowing protest spectacles play out at the intersection of physical and virtual space in the city. These studies link to literature on embodied digital activism and digital witnessing during protests - when, for example, smartphone footage of police violence is shared on social media (Andén-Papadopoulos 2014; Mirzoeff, 2011; Richardson, 2022). As stated in the introduction: contemporary offline and online political participation in the city is overlapping and interdependent. However, the distinct features of urban political social media use demand further attention.

2.1 New repertoires of youth political participation

Young people are at the fore of political participation through social media. Not only do they tend to have greater technical skills (Rainie et al. 2012), but it has been argued that the architecture of social media appeals to young people's informal, peer-oriented, anti-authority approach to political activity (Livingstone 2009:121). Cut out from many traditional avenues for political participation like voting, youth are developing broader registers of political engagement on social media, which could be understood as new 'digital action repertoires' (Selander and Jarvenpaa 2016). Two themes that emerge when assessing these are set out below.

A body of literature tracks the ways in which social media facilitates the 'playful political participation' of young people. Youth practices on social media – from curating personal profiles to sharing memes and micro-videos to tagging content with #hashtags – have been dismissed by some as frivolous distractions from material political conditions, or at best performative shows of political participation, dubbed 'slacktivism' or 'clicktivism' (Christensen 2011; Halupka 2014). However, researchers are increasingly recognising that youth practices on social media defy stereotypes of superficiality (boyd 2014). Platforms like TikTok shape 'playful political expression' which channels youth creativity into tongue-in-cheek political commentary that can help young people develop their political selves and connect with large audiences of their peers (Moffett and Rice 2023; Abbas et al 2022; Vijay 2021; Hartley 2010). Monachesi et al (2017) show how the Hong Kong Umbrella Movement used social media in 'stratagematic (playful, shrewd, unorthodox, and improvised)' ways to reclaim and recreate public space (2017 p.1448). They compare the playful, creative tactics of youth to the work of street artist Banksy, whose political expression in the 'glocal' playground of the hybrid

city allows 'conflicting views can be confronted, an essential element of democracy' (2017 p. 1448).

Moreover, among the new forms of communication that youth develop on social media, memes have become one of the most popular tools for political expression, opening new pathways to civic engagement and political participation (Mihailidis, 2020; Penney, 2020). Memes are a short-form of visual content -usually made up of text, images or videos- that propagate fast and widely on the Internet (Börzsei, 2013). Meme production and meme sharing on social media platforms are central to digital culture and youth media repertories. Memes have been used politically to make visible activist causes, defy dominant narratives, reinterpret the news, criticize governments and police authorities, and agitate protests (Applegate & Cohen, 2017; Huntington, 2016; Mortensen & Neumayer, 2021). When political memes challenge dominant ideologies and structures of power, critiquing and subverting politics in a humorous way, they resemble the modes of operation of "culture jamming." According to DeLaure and Fink (2017), "culture jamming" modes include reappropriating cultural forms; leveraging humor and carnivalesque inversions; using anonymity; soliciting participation by the public at large; operating serially; and transgressing normative boundaries. For instance, the the Pepper Spray Cop meme that circulated widely during Occupy Wall Street protests in the U.S. allowed protestors to draw public attention and challenge ideologies of American patriotism, by remixing a cut of the photo of Lieutenant John Pike pepper-spraying sit-in protesters at the University of California, with fictional and historical imagery from other contexts (Huntington, 2016; Milner, 2013).

The heterogeneity underpinning connective action of youth on social media is also a key theme. Sastramidjaja (2023) argues that youth movements on social media are underpinned by heterogeneity and multiplicity, expanding through connections like a 'rhizome' (Deleuze and Guattari 2013 [1987]). In the case of the #MilkTeaAlliance, the focus of Sastramidjaja's ethnography, we see how a varied range of activist and subcultural youth groups (including for example, K-poppers) from across Indonesia, Thailand, Myanmar and other countries, joined forces in a shared 'generational' struggle against authoritarianism. It has long been observed that social media enables youth movements to build transnational and translocal alliances across diverse global contexts (Keck & Sikkink 1998; Tarrow, 2005, Juris and Pleyers 2009). Social media, some argue, also makes it easier for diverse coalitions of youth to come together around local causes. Alam (2020) studies the Twitter account of a youth-based environmental organisation campaigning to maintain and reclaim the Babakan Siliwangi urban forest in Bandung, West Java. He shows that Twitter enabled a 'heterodoxa' of anti-capitalist beliefs to flourish in what participants experienced as 'shared political temporality' (Bonilla & Rosa, 2015, p. 4) uniting their diverse ideological standpoints. This heterogeneity of beliefs is paralleled by the organic, horizontal organisation and diverse range of action-repertoires Holbig (2020) sees in the Honk Kong Umbrella Movement, where activists' guiding principle enshrined fluidity: 'Be water'.

2.2 Access to political participation on social media and messaging apps

Social media lowers the transaction costs of political participation for individuals (Bimber, Flanagin, & Stohl 2012). As digital technologies have become embedded in the daily lives of the vast majority of the global population (Greenfield 2017), 'tiny acts' of political participation (liking, sharing, upvoting, following, retweeting, commenting) require only 'micro-donations of time and effort' (Margetts et al 2016). Only a few years ago, young people had to divert from the rest of their lives to dedicate financial resources and hours of effort to printing and distributing leaflets, scouring library shelves or debating in activist meetings. Now, with a few taps on a smartphone, young people can drop in and out of a ''time-based world stream' […], in which they are exposed to many contradictory and overlapping currents of information, views, influences, causes, campaigns, and concerns that widen rather than narrow their political experience' (Margetts et al 2016 p. 207).

Many have argued that the opportunities for political socialisation and participation on social media have improved access to politics for disadvantaged or marginalised young people (Harris 2008; Schradie 2018). In their study of the 2008 US election and Facebook comments, Carlisle and Patton suggest that social media is 'levelling the playfield [for] those who might lack the resources to participate in a conventional sense' (2013 p.10). The relative advantage of young elites (with the connections, education and financial backing to advance traditional political careers) is reduced when a social media account can be enough, in principle, to participate in

politics and soar to political influencer status (Margetts et al 2016).

However, there is a growing literature on structural barriers to political participation on social media which complicates this narrative. Digital infrastructure is unevenly distributed globally and across cities: disadvantaged urban youth are less likely to have stable internet connections and the latest hardware and software to produce high quality social media content (Watkins, C. et al. 2018). Less visibly, digital literacy levels are still shaped by levels of traditional economic, social, and cultural capital (Vromen et al 2016), and the fast pace and complex multiplicity of 'chaotic pluralism' may exclude marginalised young people who are time-poor (Margetts et al 2016).

Even less visible is what Nemer calls 'the structural violence of the information age', which is embedded in the design of social media platforms (2022 p. 3). André Brock Jr. observes how, 'When scholars first sought to understand information technology use by Black folk, the Black body was only legible through its perceived absence: absence from the material, technical, and institutional aspects of computers and society' (2020 p.1). However, even when marginalised young people are present on social media, their political participation is constricted by exploitative algorithms and filter bubbles of the corporate-driven attention economy, as the next section explores.

2.3 Profit, division and repression on social media

The profit-driven motives of social media corporations inevitably distort the political potential of their platforms. As Cathy O'Neil observes in her (2016) book Weapons of Math Destruction, 'Facebook simply wants to keep people connected for as long a time as possible so that they click on ads and generate revenue for the company. Facebook's algorithm was never designed to prioritize the truth or settle disagreements'. The mixing of commercial and political interests on social media is sometimes blatant - for example, in the case of high-profile influencers (Wellman (2022) shows how black squares in solidarity with Black Lives Matter were used by influencers primarily to boost their brand credibility rather than to advance racial justice). But many ways in which market logics shape political participation online are less immediately evident (Scharff 2023).

Literature documents how access to political information and participation is restricted by the algorithms and filter bubbles that structure social media. Algorithms magnify societal biases and prejudices as they rank content in order to maximise attention (Poell & van Dijck 2015, Neumayer & Rossi 2018). Filter bubbles create 'a state of intellectual or ideological isolation that may result from algorithms feeding us information we agree with, based on our past behaviour and search history' (Fletcher 2020). Far from exposing participants to a rich multiplicity of contrasting viewpoints, the architecture of social media fosters a lack of critical thinking and knowledge ownership (Del Vicario et al 2016; Pariser 2011). The individualisation of politics on social media, seen by some as liberatory, is questioned by scholars like Sunstein (2007) who sees social media activism as forging echo chambers in which individuals experience the political world as a narrow bubble constructed around their pre-existing concerns: the 'Daily Me'.

Nemer's (2022) ethnography of marginalised urban youth in Brazilian favelas gives a practical example of how filter bubbles operate to reinforce urban divisions and restrict access to political participation. The 2013 June Journeys protests initially gathered force amongst groups of students and youth from the upper classes: information sharing and deliberation about the protests unfolded in Facebook groups that did not include Nemer's research participants in the favelas. By the time news reached youth in the favelas, opportunities for co-creation and co-ownership of the movement were diminished and this ultimately fed their disengagement from the protests. The emancipatory speed of dissemination on social media, it seems, plays out unevenly in local contexts - in Nemer's words, 'technical opportunity did not result in people crossing entrenched boundaries of race and class. Situating civic engagement in the spatial dynamics of neighborhoods challenges the familiar and simplistic techno-optimistic claim that the internet is a major catalyzer of social change for anyone' (2022, p.130)

Scholars have traditionally perceived social media, just like cities, as places where people from different social worlds have better chances to connect and share content (Boy and Uitermark 2020; Kaplan and Haenlein 2010; Aaker and Smith 2010). But divisions arise on social media, just as they do in urban space, and since 'Facebook's algorithm was never designed to prioritize the truth or settle disagreements' this is

causing political upheaval (Margetts et al 2016 xx).

Recent studies argue that less progressive political uses of social media have long been overlooked (Gustafsson and Weinryb 2020), but following the rise of Trump, Bolsonaro and Modi, there is new attention to how social media facilitates the kinds of divisive narrative that fuel digital populism and the rise of the alt right (Letícia Cesarino 2020; Askanius & Keller 2021; Daniels 2018; DeCook 2018). Mis- and disinformation campaigns take advantage of filter bubbles to circulate unchallenged (DiFranzo and Gloria-Garcia 2017; Jin et al. 2013), causing radicalisation through 'hundreds or even thousands of micro-nudges over time' (Munn 2019). 'Tiny acts' of everyday online political participation quickly seem less emancipatory when framed as 'micro-nudges' manipulating young people into radicalisation.

A pervasive trend towards fragmentation, polarisation and radicalisation on social media is clearly presented in the literature. However, as often with complex technologies, there is also, paradoxically, evidence of a converse trend towards conformity and cohesion (Boy and Uitermark 2020). Silicon Valley corporations continue to shape the values and practices of social media platforms: as Margetts et al (2022) quip, riffing on Schattschneider's famous line: 'Will the chorus of the pluralist heaven now sing with a Californian accent?' Boy & Uitermark describe how Instagram in Amsterdam exerts 'powerful pressures toward conformity that render countercultures precarious. Users pursue distinction, but in a conformist way—they know what the norms are and they abide by them' (2020 pp.) Constantly aware of the judgement of others, youth self-censor whilst participating in politics on social media. Storsul (2014) even observes this among Norwegian youth who are already politically engaged, but remain hesitant to express political opinions on social media platforms. Self-awareness is heightened on social media due to collapsed social contexts where personal, professional and family spheres coalesce making political expression a risk to sociability (Marwick and boyd 2010).

Political repression is not only exerted by social media corporations; youth in many parts of the world also navigate the state's restrictions of their political participation on social media. Authoritarian regimes, for example, have leveraged the affordances of social media to infiltrate and disrupt social movements (Lynch 2011). In China, this is orchestrated at the national level where government employees pose as ordinary users and fabricate about 500 million social media comments per year to "distract and redirect public attention from discussions or events with collective action potential" (King, Pan and Roberts 2017). Research has documented how this also plays out on local government social media accounts: when an elevated risk of collective action is identified, social media spaces are flooded by the local government with non-political, upbeat content (Roberts 2018, Lu and Pan 2021). In 2009 in Iran, social media facilitated movement building and communication between the protesters, but it also allowed the regime to spread blogs and posts supporting its position (Aday, et al. 2010).

2.4 Youth responses: alternatives to (anti-) social media

Of course, the landscape of social media does not uniformly and unequivocally create repressive conditions for youth political participation. Social media platforms differ in their particular affordances and effects, and as they play out in diverse political and cultural contexts. A survey of US teens suggested that Twitter and Facebook, for example, lead to affective polarisation among teens, whilst TikTok and Instagram have no relationship with polarisation (Oden and Porter 2023).

More importantly, youth have agency to shape the social and political possibilities of the digital structures they interact with and sometimes contest (Lupton 2014). Just as urban parks designed for leisure and consumption have been appropriated by youth movements for political participation, so too can the profit-driven designs of social media platforms, exploited by radicalising forces, gain new and adaptable political meanings forged by young people themselves (Arora 2015). Nemer (2022) describes how youth in Brazilian favelas use selfies as vehicles of political hope, challenging the culture of silence around criminal gangs and using what Marwick and boyd (2014) call social steganography (where social media content is widely visible but coded such that it only resonates with its narrow, intended audience). Strategic self-censorship, for these young people, becomes an emancipatory political tool.

Young people recognise the limits of high-profile, branded, profit-driven social media platforms as vehicles for political expression and organising. This is vividly illustrated in the context of urban

protests against repressive regimes where young protesters navigate social media surveillance and mobile internet restrictions by flexibly switching between digital platforms and tools. The 2014 Hong Kong Umbrella Movement relied on private encrypted messaging apps, such as Telegram or Signal, to coordinate their movements without detection (King-wa 2023). When internet connections were disrupted by the authorities, they moved onto encrypted apps like Bridgefy which connects phones in a 'mesh network' using Bluetooth. Zeitzoff (2017) argues that, in authoritarian contexts, anti-regime dissidents increasingly migrate to private, encrypted messaging platforms, allowing mainstream social media sites to become, for repressive state actors, a ''growing vacuum to actively promote their propaganda.''

Telegram and other encrypted messaging apps, in particular, have been located as ''emancipatory communication technologies'', for example, in the context of Iran, by Alimardani and Milan (2018, 173). This is emphasised by the fact that Telegram was banned from Iran when it refused to release backdoor access to encrypted content to the authorities (Akbari and Gabdulhakov 2019). Of course, private communication groups can also function as vehicles for radicalisation and echo chambers - Telegram is frequently used by ideologically marginalised groups who seek to still reach audiences (for example, deplatformed Internet stars (Rogers et al 2020), or American far-right groups (Urman et al 2020). Research has shown that misinformation spread on Whatsapp groups - a platform many trust due to the sense of intimate, private and direct communication - was fundamental to the rise of Bolsonaro in Brazil (Nemer 2022).

Frustrated by what some denounce as 'anti-social' networks - from Facebook to Whatsapp - some youth are working to develop alternative platforms that resist the dynamics of division and repression. In the wake of the Sunflower Student Movement in 2014 in Taiwan, a group of students identifying as 'civic hackers' under the name 'g0v' developed a new form of 'pro-social media': vTaiwan. vTaiwan used a platform called Polis, which allows users to exchange views and agree and disagree with each other's posts, like many social media platforms. However, instead of highlighting the most divisive and contentious posts (to monopolise attention and profit), Polis gives most visibility to points of consensus, often more nuanced posts which resonated across ideological divides (Tseng 2022). Members of the Taiwanese student civic hacker collective 'g0v' have since entered the Taiwanese government, including Audrey Tang, who is currently the country's digital minister overseeing innovative civic tech (see below).

The Polis 'pro-social media' platform has since been adapted and developed to bring deliberative political participation in diverse local contexts - from Bowling Green, Kentucky, to Newham, London. Alternative models of pro-social media have also been developed directly at the local level, often understood in the literature as 'civic media'. Alevizou (2020), for example, investigates a bespoke digital media platform co-designed by an activist group in North London to facilitate an urban planning approach that foregrounds migrants' rights. The field of pro-social media studies remains nascent, and studies of youth participation, specifically, in designing and using these forms of civic and pro-social media are scarce. However, there is a need for studies which look beyond today's dominant social media platforms to study alternative digital political spaces (often spaces that are collectively or publicly managed and owned, rather than dominated by market logics). The following sections survey emergent trends in literature on grassroots and city government initiatives for digital youth participation in cities.

3 Citizen science, co-production, and digital activism

Academic literature rarely asks how youth use apps and platforms other than social media for political participation. There are, however, a range of other digital technologies – from open-source filesharing to participatory research methods - that have been identified as vehicles of youth political participation.

3.1 Collaborative tools for co-production

The logistical processes of organising youth political participation are enabled by a host of online tools that have become embedded in the daily life of most young people – from Google Docs or Etherpad to share planning, writing and editing, to Doodle Polls or Eventbrite to organise offline meetings and actions. A host of project management software – from Slack to Notion – potentially allow youth to coordinate the process of political movement building, although there is little literature exploring this – perhaps a sign of how naturalised these tools have become.

There is literature (mostly dating from the 2000s) on young people's civic and political engagement through wikis, web-based platforms that allow users to collaboratively create, edit, and share content (Wagner 2004). Wiki's have been found to promote youth well-being and community empowerment by making space for young people to collaborate with their peers as well as decision-makers and legislators (Vodanovich et al, 2009). In educational contexts, wikis have been extensively studied and identified as effective collaboration tools – (Chao 2007; Larusson, 2009), which suggests that they also have potential as tools to empower processes of political organisation.

3.2 Citizen science

Citizen science describes a range of research, making and knowledge production activities developed, with different levels of participation and collaboration, by citizens of all ages (including professional and amateur scientists, adults, children, and youth) in local, national, and global contexts. From action-oriented to educational and conservation projects, citizen science provides youth with opportunities to participate in their communities and exercise their agency through scientific inquiry (Aczel & Makuch, 2023; Ballard, Dixon and Harris, 2017; Constant & Hughes, 2023). Grassroots and bottom-up citizen science projects, in particular, offer youth a meaningful pathway to political participation, supporting positive social and environmental change. By facilitating youth development of scientific activities such as calculating, sensing, self-reporting, analyzing, and making, and combining them with community engagement and advocacy, these initiatives can empower youth to become active citizens in their communities. For instance, local community initiatives that monitor air pollution using low-cost DIY sensors have supported community-based production of knowledge and evidence, promoted public inquiry and engagement with environmental governance, and mobilized young people towards political and environmental causes (Barreneche & Lombana-Bermudez, 2023). One such initiative has been documented by Johnston et al (2019): they describe how youth environmental justice organisations in Los Angeles brought marginalised young people together in a programme of personal air quality monitoring which aimed to build youth understanding of the disproportionate exposure to air pollution inflicted on communities of colour.

Digital participatory research and education projects like this often engender forms of political participation and expression. Photovoice, for example, is a tool developed – with inspiration from Paolo Freire – by Caroline Wang and Mary Ann Burris: "Freire noted that one means of enabling people to think critically about their community, and to begin discussing the everyday social and political forces that influence their lives, was the visual image […] Photovoice takes this concept one step further so that the images of the community are made by the people themselves" (Wang 1997). Photovoice projects allow young people to mobilise for community change (Wang, 2006, Strack, 2004).

Through photovoice projects, digital photography becomes a tool for youth to record their concerns and dramatise their agency, as well as to open up dialogue with communities and policymakers (Wang 2006). In urban contexts, especially, research has found that young people can be empowered by photovoice projects to visually articulate their perceptions of urban life and political questions around unemployment and dereliction (Gerodimos 2018; Rose 2018). Less concretely, youth use photovoice to develop their personal, social and political identities (Strack 2004) and to ground their political education in everyday realities (see Volpe (2018) on digital diaries). Youth also develop collaboration skills through photovoice – Wilson et al (2007) describe how adolescent participants in an afterschool program used photography and writing to initiate group-designed social action projects.

Digital storytelling (DST) is another tool for political connection and expression used by youth and the communities and educators supporting them. Chan (2019) defines DTS as 'an intervention approach that utilizes digital media production [texts, images, sounds etc] to enhance reflective intrapersonal and interpersonal dialogues'. Their study of youth in the polarised political context of Hong Kong showed that digital storytelling boosts self-esteem, critical thinking. Other research suggests that DTS, like Photovoice, aids identity development (Anderson, 2019), allowing youth to explore performative identities that might inform their development as political actors (Wales 2012). Nixon (2009) suggests that DTS is particularly effective in promoting agency, literacy, and identity development in marginalized youth.

3.2 Open-source and data activism

Young people use peer-to-peer file sharing software to access cultural artifacts and digital tools – from music and films to software (Lane 2005; Chiu 2011). Not only does this enable the dissemination of political content (as social media networks do – see above), but it also also introduces youth to the political philosophy of open-source technology (Berry 2008; Yeats 2009; Vainio & Vadén 2007).

Bruns (2010) observes how filesharing amongst youth (for example, on filesharing networks from Napster to Soulseek and BitTorrent-based systems, as well as torrent search sites such as Pirate Bay and Dimeadozen), allows them to participate in an ongoing and open-ended project of curating information and culture. In a book entitled, The Pirate's Dilemma: How Youth Culture Reinvented Capitalism, Mason (2008), argues that the advent of open-source technologies has allowed young people to become 'punk capitalists', disrupting the distribution and control of information.

Early advocates of open-source technologies were enthusiastic about their political potential to shift cultural and political power to youth, but notes of caution have been sounded more recently. For example, Chiu (2011) notes that many young people do not contribute to the sharing process, suggesting a lack of awareness of commitment to open-source political philosophies.

Data activism is a form of digital activism that combines technological and political engagement, and involves the tactical use of data to promote socio-political change (Gutiérrez, 2018; Milan S & van der Velden, 2016). It involves collecting, analyzing, and disseminating data, and building digital data infrastructures to raise awareness, challenge power structures, and advocate for specific causes. Data activism resists the exploitative datafication process developed by technological corporations, media industries and governments, developing alternative practices around data, data infrastructure, and data flows. Data activists employ reactive and proactive approaches to practice, what Beraldo and Milan (2019) have called, "contentious politics of data". That is, to develop "bottom-up, transformative initiatives interfering with and/or hijacking dominant processes of datafication, contesting existing power relations or reappropriating data practices and infrastructure for purposes distinct from the intended" (Beraldo and Milan, 2019). While reactive approaches leverage data practices to resist different forms of oppression (e.g. organize protests, hijack agenda-setting mechanisms), the proactives support building digital infrastructures and civic technologies (e.g. open-source software, DIY sensors, open data repositories) to empower people to participate and exercise their agency through data. Data activism is closely related to hacktivism, although they differ in their methodologies and objectives. Hacktivism involves using hacking techniques, such as website defacement, denial-of-service attacks, or data breaches, to achieve political or social goals. While data activism also involves manipulating data, it typically focuses on legal methods of data acquisition, analysis, and circulation, prioritizing transparency, accountability, and ethical data practices (Schrock, 2016).

4 E-governance and civic tech

4.1 City government social media initiatives

As youth political participation becomes increasingly concentrated on social media, city governments are setting out to join the conversation. Both national and local governments see social media platforms as potential vehicles to engage young citizens in institutional politics (Mergel and Bretschneider, 2013; Mossberger et al., 2013; Zheng and Zheng, 2014, Zavattarol and Bryer 2016).

Some researchers highlight the potential of social media to enhance government transparency, participation and collaboration (Mainka et al., 2014). Social media can facilitate e-disclosure (Gesuele, Metallo, & Agrifoglio 2016; Magro, 2012) allowing citizens to access public information and monitor institutional action (Veljković, Bogdanović-Dinić, & Stoimenov, 2014, Kassen, 2013). In principle, social media also allows citizens to directly intervene in conversations with representatives of political institutions (Chen et al., 2020), which can increase their level of trust in government officials (Park et al 2015). Responding to the trend of personalisation in digital politics, government social media accounts tend to highlight individual politicians rather than political parties (Enli & Skogerbø 2013), opening up new potential for citizens to build personal connections with institutional politics.

However, in practice, social media interactions between city government and citizens can fall short of these participatory ideals. Mergel (2013)

identified three different modes of government interaction with citizens when using social media: representation (one-way pushing information), engagement (citizen pulls in a two-way conversation), and networking (multi-sided conversation). Studies suggest that top-down, one-way 'representation' is very often the dominant mode (Mossberger et al. 2013, Reddick and Norris 2013, Zavattaro et al. 2015). In response, there have been calls to engage youth in the design and implementation of social media civic engagement strategies (Brandtzæg, 2016).

4.2 E-participation and civic tech

Beyond social media, many city governments are experimenting with civic tech (Schrock 2019; Wilson & Chakraborty 2019) and e-participation (Khan & Krishnan 2017; Lindner & Aichholzer 2020). Although youth are not always the main target of civic tech, research has found that young people are often imagined as tech savvy and relevant to engage in initiatives for digital urban democracy (Gordon & Lopez 2019). Hopeful assessments of the potential of e-participation to enhance youth participation in urban politics abound (e.g., Lindner & Aichholzer 2020, Honkatukia & Rättilä 2023). Varsaluoma et al, however, caution us that 'The distinction between e-participation and the more widely understood digital participation and activism is clear: while a large proportion of young people use digital tools competently for social networking, content production and bottom-up activism, e-participation services remain unknown and underused, and there is little common ground between these digital spheres' (2017 p.61).

Perhaps for this reason, empirical studies of city government initiatives seeking to cultivate youth participation are few (especially in contexts outside of Europe and the US). Those that exist are focused predominantly on e-Youth Councils (Glassey and Aglione 2012; Henna 2023; Honkatukia and Rättilä 2023), but also touch on other areas of civic tech - from youth-focused participatory budgeting (Pozzebon et al, 2016) to city council data stores (Masavah et al 2024), to participatory GIS (PGIS) allowing youth to map their perceptions of the city and develop urban planning proposals (Carvalho et al, 2021).

Assessments of the impact of these initiatives are broadly positive. Mette (2023) studies GiMening, a rapid feedback digital innovation targeting youth which has been implemented in Norwegian municipalities, which, they argue, works to 'lower the threshold for participation, lead to better-informed decisions, increase citizens' level of trust and improve awareness of people's opinions'. Demirbas (2021) offers a similarly positive assessment of the Finnish "Nuortenideat.fi" ("Young People's Ideas", Demirbas 2021) which operates at both national and local level creating space for young people to input into the political agenda. Ambrosino et al (2023) identify best practices at city level by assessing e-participation platforms for young people in three European cities, Krakow (Poland), Leiden (Netherlands), and Trieste (Italy). Their survey of young people in each city suggests that young people are eager to get involved politically when provided with tools tailored to them.

Studies frequently circle back to the importance of ensuring tools are properly sensitive to the needs of youth as well as those of urban politicians and policymakers. Mette (2023) warns that 'GiMening [also] might be used only as a one-way information sharing tool or that decision-makers will not apply input data'. Other researchers have raised concerns that e-participation mirrors the barriers and exclusions of offline engagement with institutional urban politics (Oser, Hooghe & Marien 2013) by relying on top-down design and framings (Schröder 2014; Honkatukia and Rättilä 2023). Problems engaging youth also arise from a lack of transparency from city governments - especially when the normative and political goals of youth e-participation are left unclear (Henna 2023) or when there is no clear commitment that the initiative will lead to concrete, binding political action (Randmaliiv and Vooglaid 2020).

Pozzebon et al (2016) study how participation in digital participatory budgeting in Belo Horizonte, a Brazilian municipality trying to boost engagement with youth, in fact decreased between 2006 and 2011, 'despite the availability of a cutting-edge, user-friendly and iterative web-based platform to help connect citizens to the process'. They conclude that attention to social representations of e-participation processes (specifically, increasing trivialisation and reification) is as important as attending to the technical aspects of such initiatives. Varsaluoma et al's (2023) study of how dozens of young people in Finland were engaged in planning and trialing a Virtual Youth Council through human-centred design suggests that ensuring co-design and co-ownership of the process from the start can help overcome the challenges of maintaining and deepening youth e-participation.

4.3 Cyber-repression at city level

Cyber-repression, or digital repression, has been defined as actions that raise the cost of digital activism or the use of digital tools to raise the costs for activism in general (Earl, Maher, Pan 2022). Most literature on cyber-repression of youth movements is focused on national governments (see Lee (2018) Grasso (2018) Kadivar (2015) Gohdes (2014)), or on the new avenues of “transnational repression” opened up by the Internet (Michaelsen 2020) – for example, the Syrian government threatening diaspora activists’ families within Syria to deter online protests (Moss 2016).

However, digital repression also takes place at the local level, in both democratic and authoritarian contexts (Earl, Maher, Pan 2022). This ranges from pre-emptive policing around protest events in UK cities (Dencik et al 2018) to facial recognition, video analytics and Stingrays being used by the New York Police Department in the US during the BLM protests in 2020 (Diaz 2019). National strategies for cyber-repression are replicated at a local level – Xu (2021) examines local government uptake of China’s Golden Shield national digital surveillance program, resulting in increased arrests of political prisoners at the local level.

Earl et al (2022) remind us to also attend to the ways in which potentially benign-seeming local government initiatives might embody covert forms of digital repression. For example, civic tech initiatives like online complaints forums might be used to demobilise more threatening forms of opposition, by monopolising the attention of citizens and highlighting internal disputes in opposition movements (Chen and Xu 2017).

5 Towards a typology

Having reviewed and organised a broad sweep of literature, we return to our initial conception of the three categories of digital technologies shaping the political participation of urban youth.

In 2019, George and Leidner set out a hierarchy of digital activism (‘’from clicktivism to hacktivism’’) which builds on Milbrath's (1965) hierarchy of political participation that divides activism into spectator, transitional, and gladiatorial activities. We take inspiration from this categorisation and adapt it to reflect the findings of this literature review on the digital political participation of urban youth (see Fig. 2

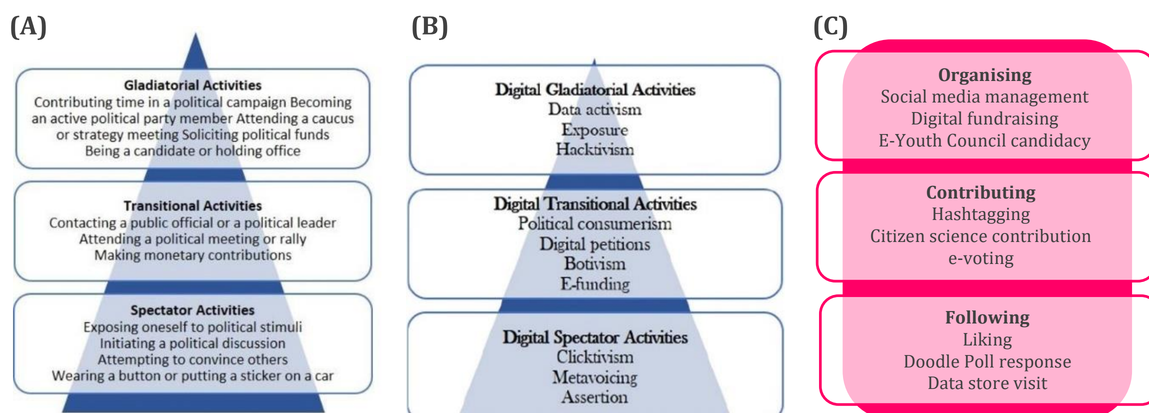


Fig 2: Beyond a hierarchy of political (digital) participation. (A) Milbrath (1965), (B) George and Leidner (2019), (C) LSE Cities / NextGenC (2024)

First, we contest the framing of these different forms of participation in a hierarchy (a critique of Milbrath George and Leidner also voice, but which their terminology and visualisation does not fully refute). As this review has demonstrated, ‘’tiny acts’’ of participation such as liking and commenting on posts (‘’clicktivism’’ and ‘’metavoicing’’ in George and Leidner’s hierarchy) can be dramatically impactful when they feed into a wave of connective action (Margetts et al 2016). Second, we revise the category headings to be more inclusive of a range of forms of political participation online - from collectively generated memes and leaderless youth movements to subtly coded selfies - that do not resonate with the confrontational, and potentially macho, individualistic framing of ‘’gladiatorial’’ as the most active form of digital politics. Finally, we map these three levels of participation against the three categories of digital technologies relevant to urban youth (as identified through our literature review), and populate the matrix with illustrative cases of youth political participation in cities.

	Social media and messaging apps (A)	**Citizen science and other co-production tools (B)**	**E-participation and civic tech (C)**
1. Organising (managing, coordinating, super-engaged)	E.g. Coordinating social media campaigns, curating social media feeds	E.g. Coordinating a Photovoicing initiative or Hackerspace; setting up co-production a digital fundraising or Slack channel	E.g. Advocating for, co-designing or standing for election on an e-youth council
2. Contributing (creating, sharing, moderately engaged)	E.g. Producing content, sharing and commenting on content, engaging with hashtags	E.g. Participating in citizen science initiatives; donating to a digital fundraiser or posting details of an event on a relevant Slack channel	E.g. Participating in e-voting, e-participatory budgeting, or civic tech initiatives like PGIS
3. Following (consuming, lightly engaged)	E.g. Reading and watching content; following, liking, upvoting content	E.g. Following citizen science initiatives; minimal contributions to co-production tools, such as voting in a Doodle Poll	E.g. Following civic tech initiatives; looking up information on municipal data stores

Fig 4: Typology of urban youth political participation through digital technologies

6 Knowledge gaps

This literature review has identified two important knowledge gaps. Further research in these directions would help deliver a richer understanding of all aspects of our typology of urban youth political participation through digital technologies.

First, the dominance of social media in academic literature (see Appendix A) means that categories beyond social media (B and C in our typology) are under-explored. After extensive assessment of literature in each category, we found that the key academic debates (especially on access to participation and impacts and risks of participation) are much more advanced in relation to social media (A) than in relation to citizen science, co-production tools, civic tech and e-participation (B and C). Whilst the dynamics of social media are fast-moving and complex, and should continue to be a focus of research, we hope that future research will probe other kinds of digital technologies with similar scrutiny.

Second, whilst there are studies of how these digital technologies are being employed in cities (which we have included in our review), there are very few examples of research which sets out explicitly to consider how youth digital politics relate to the city (i.e. studies about the city itself, rather than just studies of phenomena that happen to be taking place in urban contexts). Appendix B reveals the extent to which articles on youth, politics and the digital rarely also engage with the urban. This is especially necessary in relation to theorisations of youth political participation online, which very often tackle the transnational scale and sometimes consider the hyper-local scale, but seldom address the city scale.

Finally, in relation to both knowledge gaps, we note that there is a need for research led from the Global South. Our initial scoping exercise illuminated that existing research is heavily biassed towards Global North contexts, especially the US (see Appendix A), and this resonated with our subsequent deep-dive literature review on key debates. Although we have aimed to highlight cases from across a range of contexts and to prioritise empirical examples from the Global South in this review, the overall picture of research lacks geographical diversity

Appendix

A. Digital technologies and youth participation (search conducted 5/03/2024):

Search terms	Scopus	Web of Science	Google Scholar
Youth + political participation + digital	160 results Regional focus = USA (43) Peak = 2023	172 results Regional focus = USA (53) Peak = 2020	762,000 results
Youth + political participation + social media	321 results Regional focus = USA (78) Peak = 2023	414 results Regional focus = USA (103) Peak 2019	3,410,000 results
Youth + political participation + digital fundraising	0 results	1 result	48,600 results
youth + political participation + digital petitions	2 results	1 result	40,700 results
youth + political participation + hacktivism	1 result	0 results	4,160 results

B. Digital technologies + urban (search conducted 5/03/2024):

Search terms	Scopus	Web of Science	Google Scholar
Youth + political participation + digital	160 results	172 results	762,000 results
Youth + political participation + digital + urban	6 results	10 results	659,000 results
Youth + political participation + social media	321 results	414 results	3,410,000 results
Youth + political participation + social media + urban	23 results	20 results	2,740,000 results

References

Aczel, M. & Makuch, K. (2023) Climate change, young people, and the IPCC: The role of citizen science. Elementa: Science of the Anthropocene 5 January 2023; 11 (1): 00029. doi: https://doi.org/10.1525/elementa.2022.00029

Aday, S., Farrell, H., Lynch, M., Sides, J., Kelly, J., & Zuckerman, E., (2010). Blogs and Bullets: New Media in Contentious Politics. Peaceworks Publication. Retrieved from United States Institute of Peace website: Blogs and Bullets: New Media in Contentious Politics | United States Institute of Peace (usip.org)

Aguerre, C. & Tarullo, R. (2021). Unravelling Resistance: Data Activism Configurations in Latin American Civil Society. Palabra Clave, 24(3), e2435. https://doi.org/10.5294/pacla.2021.24.3.5

Alevizou, G. (2020). Civic media and technologies of belonging: Where digital citizenship and 'the right to the city' converge. International journal of media and cultural politics, 16(3), 269-290. https://doi.org/10.1386/macp_00029_1

Ambrosino, A., Birk, S. C., Mingardi, C., Nikolou, G., Spielberger, L., Thevenin, E., . . . Côme, T. (2023). Youth and Democracy: Digital Opportunities for the Future of Participation. 67-83.

Anderson, K. M., & Mack, R. (2019). Digital Storytelling: A Narrative Method for Positive Identity Development in Minority Youth. Social work with groups (New York. 1978), 42(1), 43-55. https://doi.org/10.1080/01609513.2017.1413616

Andén-Papadopoulos, K. (2014). Citizen camera-witnessing: Embodied political dissent in the age of 'mediated mass self-communication'. New media & society, 16(5), 753-769. https://doi.org/10.1177/1461444813489863

Anita, R. G. (2014). Repression in the Digital Age: Communication Technology and the Politics of State Violence https://api.semanticscholar.org/CorpusID:157418909

Applegate, M., & Cohen, J. (2017). Communicating graphically: Mimesis, visual language, and commodification as culture. Public Culture, 13(1), 81–100.

Arora, P. (2015). Usurping Public Leisure Space for Protest: Social Activism in the Digital and Material Commons. Space and culture, 18(1), 55-68. https://doi.org/10.1177/1206331213517609

Askanius, T., & Keller, N. (2021). Murder fantasies in memes: fascist aesthetics of death threats and the banalization of white supremacist violence. Information, communication & society, 24(16), 2522-2539. https://doi.org/10.1080/1369118X.2021.1974517

Baym, N. K. (2015). Personal connections in the digital age (Second edition ed.). Polity Press.

Ballard, H., Dixon, C., and Harris, E. (2017) Youth-focused citizen science: Examining the role of environmental science learning and agency for conservation, Biological Conservation. Volume 208. https://doi.org/10.1016/j.biocon.2016.05.024.

Barreneche, C., & Lombana-Bermudez, A. (2023). Another Infrastructure Is Possible: Grassroots Citizen Sensing and Environmental Data Justice in Colombia. International Journal Of Communication, 17, 22.

Bennett, L. V., & Manoharan, A. P. (2017). The Use of Social Media Policies by US Municipalities. International journal of public administration, 40(4), 317-328. https://doi.org/10.1080/01900692.2015.1113182

Bennett, W. L. (2012). The Personalization of Politics: Political Identity, Social Media, and Changing Patterns of Participation. The Annals of the American Academy of Political and Social Science, 644(1), 20-39. https://doi.org/10.1177/0002716212451428

Bennett, W. L., & Segerberg, A. (2012). THE LOGIC OF CONNECTIVE ACTION: Digital media and the personalization of contentious politics. Information, communication & society, 15(5), 739-768. https://doi.org/10.1080/1369118X.2012.670661

Bennett, W. L., & Segerberg, A. (2013). The Logic of Connective Action: Digital Media and the Personalization of Contentious Politics. Cambridge University Press. https://doi.org/10.1017/CBO9781139198752

Beraldo, D. & Milan, S. (2019). From data politics to the contentious politics of data. Big Data & Society, 6(2) https://doi.org/10.1177/2053951719885967

Berry, D. M. (2008). Copy, Rip, Burn: The Politics of Copyleft and Open Source.

Wilson, B & Arnab, C. (2019). Planning Smart(er) Cities: The Promise of Civic Technology. Journal of Urban Technology, 26(4), 29-51. https://doi.org/10.1080/10630732.2019.1631097

Bimber, B. A., Flanagin, A. J., & Stohl, C. (2012). Collective action in organizations : interaction and engagement in an era of technological change. Cambridge University Press.

Bonilla, Y., & Rosa, J. (2015). Ferguson: Digital protest, hashtag ethnography, and the racial politics of social media in the United States. American ethnologist, 42(1), 4-17. https://doi.org/10.1111/amet.12112

Börzsei, L. K. (2013). Makes a meme instead: A concise history of internet memes. New Media Studies Magazine, 7, 1–29.

Boy, J. D., & Uitermark, J. (2020). Lifestyle Enclaves in the Instagram City? Social media + society, 6(3), 205630512094069. https://doi.org/10.1177/2056305120940698

boyd, D. (2008). Why Youth (Heart) Social Network Sites: The Role of Networked Publics in Teenage Social Life In D. Buckingham (Ed.), YOUTH, IDENTITY, AND DIGITAL MEDIA. The MIT Press.

boyd, D. (2010). Social Network Sites as Networked Publics: Affordances, Dynamics, and Implications. A networked self: Identity, community, and culture on social network sites.

boyd, D. (2014). It's complicated: the social lives of networked teens. Yale University Press.

Brandtzaeg, P. B., Haugstveit, I. M., Lüders, M., & Følstad, A. (2016). How Should Organizations Adapt to Youth Civic Engagement in Social Media? A Lead User Approach. Interacting with computers, 28(5), 664-679. https://doi.org/10.1093/iwc/iwv041

Brock, A. L. (2020). Distributed blackness : African American cybercultures. New York University Press.

Bruns, A. (2010). Distributed Creativity: Filesharing and Produsage. In S. S. -Weiss (Ed.), Mashup Cultures. Springer.

Carlisle, J. E., & Patton, R. C. (2013). Is Social Media Changing How We Understand Political Engagement? An Analysis of Facebook and the 2008 Presidential Election. Political research quarterly, 66(4), 883-895. https://doi.org/10.1177/1065912913482758

Carolina Monteiro de Carvalho, L. L. G. N. F. A. M. B.-M. a. M. K. (2021). Participatory Geographic Information Systems (PGIS) to assess water, energy and food availability in a vulnerable community in Guarulhos (Brazil). International Journal of Urban Sustainable Development, 13(3), 516-529. https://doi.org/10.1080/19463138.2021.2019041

Cervi, L., & Divon, T. (2023). Playful Activism: Memetic Performances of Palestinian Resistance in TikTok #Challenges. Social Media + Society, 9(1), Article 20563051231157607. https://doi.org/10.1177/20563051231157607

Chan, C. (2019). Using digital storytelling to facilitate critical thinking disposition in youth civic engagement: A randomized control trial. Children and youth services review, 107, 104522. https://doi.org/10.1016/j.childyouth.2019.104522

Chang, L. Y. C., & Poon, R. (2017). Internet Vigilantism: Attitudes and Experiences of University Students Toward Cyber Crowdsourcing in Hong Kong. International journal of offender therapy and comparative criminology, 61(16), 1912-1932. https://doi.org/10.1177/0306624X16639037

Chao, J. (2007). Student Project Collaboration Using Wikis.

Chen, J., & Xu, Y. (2017). Why do authoritarian regimes allow citizens to voice opinions publicly? The Journal of Politics, 79(3), 792-803.

Chiu, S.-P., & Chou, H.-W. (2011). Investigating the User Behavior of Peer-to-Peer File Sharing Software. International journal of business and management, 6(9). https://doi.org/10.5539/ijbm.v6n9p68

Christensen, H. S. (2012). Simply slacktivism? Internet participation in Finland. EJournal of eDemocracy and open government, 4(1), 1-23. https://doi.org/10.29379/jedem.v4i1.93

Christina, S. Are we all influencers now? Feminist activists discuss the distinction between being an activist and an influencer. Feminist Theory, 0(0), 14647001231201062. https://doi.org/10.1177/14647001231201062

Constant, N. and Hughes, J. (2023). Diversifying citizen science through the inclusion of young people JCOM 22(02), A07. https://doi.org/10.22323/2.22020207

DeCook, J. R. (2018). Memes and symbolic violence: #proudboys and the use of memes for propaganda and the construction of collective identity. Learning, media and technology, 43(4), 485-504. https://doi.org/10.1080/17439884.2018.1544149

Del Vicario, M., Vivaldo, G., Bessi, A., Zollo, F., Scala, A., Caldarelli, G., & Quattrociocchi, W. (2016). Echo Chambers: Emotional Contagion and Group Polarization on Facebook. Scientific reports, 6(1), 37825-37825. https://doi.org/10.1038/srep37825

Deleuze, G., & Guattari, F. l. (2013). A thousand plateaus : capitalism and schizophrenia. Bloomsbury Academic.

DeLaure, M., & Fink, M. (2017). Culture jamming: Activism and the art of cultural resistance. New York, NY: New York University Press.

Dencik, L., Hintz, A., & Carey, Z. (2018). Prediction, pre-emption and limits to dissent: Social media and big data uses for policing protests in the United Kingdom. New media & society, 20(4), 1433-1450. https://doi.org/10.1177/1461444817697722

Diaz, A. (2019). New York City Police Department surveillance. Retrieved from Brennan Center for Justice website: https://www.brennancenter.org/our-work/research-reports/new-york-city-police-department-surveillance-technology

DiFranzo, D., & Gloria-Garcia, K. (2017). Filter bubbles and fake news. Crossroads (Association for Computing Machinery), 23(3), 32-35. https://doi.org/10.1145/3055153

Earl, J., & Kimport, K. (2011). Digitally enabled social change : activism in the Internet age. MIT Press.

Earl, J., Maher, T. V., & Pan, J. (2022). The digital repression of social movements, protest, and activism: A synthetic review. Science advances, 8(10), eabl8198-eabl8198. https://doi.org/10.1126/sciadv.abl8198

Enli, G. S., & Skogerbø, E. (2013). PERSONALIZED CAMPAIGNS IN PARTY-CENTRED POLITICS: Twitter and Facebook as arenas for political communication. Information, communication & society, 16(5), 757-774. https://doi.org/10.1080/1369118X.2013.782330

Fletcher, R, (2020) The truth behind filter bubbles: Bursting some myths. Retrieved from Reuters Institute website: The truth behind filter bubbles: Bursting some myths | Reuters Institute for the Study of Journalism (ox.ac.uk)

Fu, K.-w. (2023). Digital mobilization via attention building: The logic of cross-boundary actions in the 2019 Hong Kong social movement. The Information society, 39(3), 158-170. https://doi.org/10.1080/01972243.2023.2185717

George, J. J., & Leidner, D. E. (2019). From clicktivism to hacktivism: Understanding digital activism. Information and organization, 29(3), 100249. https://doi.org/10.1016/j.infoandorg.2019.04.001

Gerbaudo, P. (2016). Rousing the facebook crowd: Digital enthusiasm and emotional contagion in the 2011 protests in Egypt and Spain. International journal of communication, 10(1), 254-273.

Gerodimos, R. (2018). Youth and the City: Reflective Photography as a Tool of Urban Voice. The journal of media literacy education, 10(1), 82-103. https://doi.org/10.23860/JMLE-2018-10-1-5

Gesuele, B. a. M. C. a. A. R. (2016). What Do Local Governments Discuss in Social Media? An Empirical Analysis of the Italian Municipalities (Vol. 19). https://doi.org/10.1007/978-3-319-38974-5_23

Gordon, E., & Lopez, R. A. (2019). The Practice of Civic Tech: Tensions in the Adoption and Use of New Technologies in Community Based Organizations. Media and communication (Lisboa), 7(3), 57-68. https://doi.org/10.17645/mac.v7i3.2180

Green, C., & Medina-Jerez, W. (2012). PROJECT CITIZEN: PROMOTING ACTION-ORIENTED CITIZEN SCIENCE IN THE CLASSROOM. The Science teacher (National Science Teachers Association), 79(9), 58-63. https://doi.org/10.2505/4/tst12_079_09_58

Greenfield, A. (2017). Radical technologies: the design of everyday life. London: Verso.

Gutiérrez, M. (2018). Data Activism and Social Change. Palgrave Pivot. https://doi.org/10.1007/978-3-319-78319-2

Gustafsson, N., & Weinryb, N. (2020). The populist allure of social media activism: Individualized charismatic authority. Organization (London, England), 27(3), 431-440. https://doi.org/10.1177/1350508419828565

H., V. (2007). Changing Life Courses, New Media, and Citizenship: The Impact of Reflexive Biographization on Young People's Democratic Engagement. In D. P. (Ed.), Young Citizens and New Media: Learning for Democratic Participation: Studies in Social and Political Thought (pp. pp. 41–57). London: Routledge.

Hadas, Z. Place-oriented digital agency: Residents' use of digital means to enhance neighbourhood change. Urban Studies, 0(0), 00420980231224629. https://doi.org/10.1177/00420980231224629

Halupka, M. (2014). Clicktivism: A Systematic Heuristic. Policy and internet, 6(2), 115-132. https://doi.org/10.1002/1944-2866.POI355

Haro-de-Rosario, A., Sáez-Martín, A., & del Carmen Caba-Pérez, M. (2018). Using social media to enhance citizen engagement with local government: Twitter or Facebook? New media & society, 20(1), 29-49. https://doi.org/10.1177/1461444816645652

Harris, A. (2008). Young women, late modern politics, and the participatory possibilities of online cultures. Journal of youth studies, 11(5), 481-495. https://doi.org/10.1080/13676260802282950

Holbig, H. (2020). Be Water, My Friend: Hong Kong's 2019 Anti-Extradition Protests. International journal of sociology, 50(4), 325-337. https://doi.org/10.1080/00207659.2020.1802556

Honkatukia, P., & Rättilä, T. (2023). Young People as Agents of Sustainable Society: Reclaiming the Future (1 ed., Vol. 1). Routledge. https://doi.org/10.4324/9781003345114

Huntington H. E. (2020). Partisan cues and Internet memes: Early evidence for motivated skepticism in audience message processing of spreadable political media. Atlantic Journal of Communication, 28(3), 194–208. https://doi.org/10.1080/15456870.2019.1614589

Ito, M. (2008). Introduction. In K. Varnelis (Ed.) (2008), Networked Publics. Cambridge: MIT Press.

Ito, M., Soep, E., Kligler-Vilenchik, N., Shresthova, S., Gamber-Thompson, L., & Zimmerman, A. (2015). Learning connected civics: Narratives, practices, infrastructures. Curriculum inquiry, 45(1), 10-29. https://doi.org/10.1080/03626784.2014.995063

Jenkins, H., Itō, M., & boyd, d. (2016). Participatory culture in a networked era : a conversation on

youth, learning, commerce, and politics. Polity Press.

Johann, M., Hohnle, L., & Dombrowski, J. (2023). Fridays for Future and Mondays for Memes: How Climate Crisis Memes Mobilize Social Media Users. Media and communication (Lisboa), 11(3), 226-237. https://doi.org/10.17645/mac.v11i3.6658

John, H. (2010). Silly citizenship. Critical Discourse Studies, 7(4), 233-248. https://doi.org/10.1080/17405904.2010.511826

Johnson, E., & Haarstad, H. (2022). Competing climate spectacles in the amplified public space. Environment and planning. C, Politics and space, 40(7), 1437-1454. https://doi.org/10.1177/23996544221082406

Johnson, N. J. (2011). The pirate's dilemma: how youth culture reinvented capitalism. In (Vol. 48, pp. 1855). Middletown: American Library Association dba CHOICE.

Johnston, J. E., Juarez, Z., Navarro, S., Hernandez, A., & Gutschow, W. (2019). Youth Engaged Participatory Air Monitoring: A 'Day in the Life' in Urban Environmental Justice Communities. International journal of environmental research and public health, 17(1), 93. https://doi.org/10.3390/ijerph17010093

Jost, J. T., Barberá, P., Bonneau, R., Langer, M., Metzger, M., Nagler, J., . . . Tucker, J. A. (2018). How Social Media Facilitates Political Protest: Information, Motivation, and Social Networks. Political psychology, 39(S1), 85-118. https://doi.org/10.1111/pops.12478

Juris, J. S., & Pleyers, G. H. (2009). Alter-activism: emerging cultures of participation among young global justice activists. Journal of youth studies, 12(1), 57-75. https://doi.org/10.1080/13676260802345765

Juusola, H., & Varsaluoma, J. (2023). Stakeholders' Perception on Youths' e-Participation in Finland: Case Virtual Council. Journal of Applied Youth Studies, 6(1-2), 75-93. https://doi.org/10.1007/s43151-023-00093-z

Kadivar, J. (2015). A Comparative Study of Government Surveillance of Social Media and Mobile Phone Communications during Iran's Green Movement (2009) and the UK Riots (2011). TripleC, 13(1), 169-191. https://doi.org/10.31269/triplec.v13i1.655

Kaplan, A. M., & Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of Social Media. Business horizons, 53(1), 59-68. https://doi.org/10.1016/j.bushor.2009.09.003

Karduni, A., & Sauda, E. (2020). Anatomy of a Protest: Spatial Information, Social Media, and Urban Space. Social media + society, 6(1), 205630511989732. https://doi.org/10.1177/2056305119897320

Kassen, M. (2013). A promising phenomenon of open data: A case study of the Chicago open data project. Government information quarterly, 30(4), 508-513. https://doi.org/10.1016/j.giq.2013.05.012

Keck, M. E., & Sikkink, K. (1998). Activists beyond borders : advocacy networks in international politics. Cornell University Press.

Khan, A., & Krishnan, S. (2017). Social Media Enabled E-Participation: Review and Agenda for Future Research. E-service journal, 10(2), 45-75. https://doi.org/10.2979/eservicej.10.2.03

Laila Abbas and Shahira, S. F. a. S. A. a. M. I. a. A. H. A. (2022). TikTok Intifada: Analyzing Social Media Activism Among Youth. Online Media and Global Communication, 1(2), 287--314. https://doi.org/doi:10.1515/omgc-2022-0014

Lane, J. E., & Healy, M. A. (2005). File Sharing, Napster, and Institutional Reponses: Educative, Developmental, or Responsive Policy? Journal of student affairs research and practice, 42(4), 534-548. https://doi.org/10.2202/1949-6605.1539

Larusson, J. A., & Alterman, R. (2009). Wikis to support the "collaborative" part of collaborative learning. International journal of computer-supported collaborative learning, 4(4), 371-402. https://doi.org/10.1007/s11412-009-9076-6

Lee, A. (2018). Invisible networked publics and hidden contention: Youth activism and social media tactics under repression. New media & society, 20(11), 4095-4115. https://doi.org/10.1177/1461444818768063

Leticia, C. (2020). How social media affords populist politics. Trabalhos em lingüística aplicada, 59(1).

Livingstone, S. (2008). Internet literacy: young people's negotiation of new online opportunities. MIT Press.

Lupton, D. (2014). Beyond Techno-Utopia: Critical Approaches to Digital Health Technologies. Societies (Basel, Switzerland), 4(4), 706-711. https://doi.org/10.3390/soc4040706

Macková, A. M., Mejias, S., & Macek, J. (2020). When facebook is (Not) enough: hybridity in the media and political strategies of leftist youth organisations. Springer International (Firm).

Magro, M. J. (2012). A review of social media use in e-government. Administrative sciences, 2(2), 148-161. https://doi.org/10.3390/admsci2020148

Mahsa Alimardani and Stefania, M. (2017). The Internet as a Global/Local Site of Contestation: The Case of Iran. ERN: Institutions \& Political Power in Transitional Economies (Topic).

Mainka, A., Hartmann, S., Stock, W. G., & Peters, I. (2014). Government and Social Media: A Case Study of 31 Informational World Cities. arXiv.org. https://doi.org/10.48550/arxiv.1401.4533

Margetts, H., John, P., Hale, S., & Yasseri, T. (2015). Political Turbulence: How Social Media Shape Collective Action (1 ed.). Princeton University Press. https://doi.org/10.1515/9781400873555

Maria Teresa Grasso and Judith, B. (2018). Governing Youth Politics in the Age of Surveillance

https://api.semanticscholar.org/CorpusID:158913940

Marlei Pozzebon and Maria Alexandra Cunha and Taiane, R. C. (2016). Making sense to decreasing citizen eParticipation through a social representation lens. Information and Organization, 26(3), 84-99. https://doi.org/https://doi.org/10.1016/j.infoandorg.2016.07.002

Marwick, A. E., & boyd, d. (2011). I tweet honestly, I tweet passionately: Twitter users, context collapse, and the imagined audience. New media & society, 13(1), 114-133. https://doi.org/10.1177/1461444810365313

Masavah, V. M., Merwe, R., & Biljon, J. (2024). The role of open government data and information and communication technology in meeting the employment-related information needs of unemployed South African youth. The Electronic journal of information systems in developing countries, 90(1), n/a. https://doi.org/10.1002/isd2.12292

Meredian, A. (2020). Reconstructing anti-capitalism as heterodoxa in Indonesia's youth-led urban environmentalism Twitter account. Geoforum, 114, 151-158. https://doi.org/https://doi.org/10.1016/j.geoforum.2020.06.005

Mergel, I. (2013). A framework for interpreting social media interactions in the public sector. Government information quarterly, 30(4), 327-334. https://doi.org/10.1016/j.giq.2013.05.015

Mergel, I., & Bretschneider, S. I. (2013). A Three-Stage Adoption Process for Social Media Use in Government. Public administration review, 73(3), 390-400. https://doi.org/10.1111/puar.12021

Michaelsen, M., & Ruijgrok, K. (2024). Autocracy's long reach: explaining host country influences on transnational repression. Democratization, 31(2), 290-314. https://doi.org/10.1080/13510347.2023.2267448

Mihailidis, P. (2020). The civic potential of memes and hashtags in the lives of young people. Discourse: Studies in the Cultural Politics of Education, 41(5), 762–781.

Milan S & van der Velden L (2016) The alternative epistemologies of data activism. Digital Culture & Society 2: 57–74.

Milner R. M. (2013). Pop polyvocality: Internet memes, public participation, and the Occupy Wall Street Movement. International Journal of Communication, 7, 2357–2390. https://ijoc.org/index.php/ijoc/article/view/1949/1015

Moffett, K. W., & Rice, L. L. (2023). TikTok and Civic Activity Among Young Adults. Social Science Computer Review. https://doi.org/10.1177/08944393231188470

Molnar, V. (2014). Reframing Public Space Through Digital Mobilization: Flash Mobs and Contemporary Urban Youth Culture. Space and culture, 17(1), 43-58. https://doi.org/10.1177/1206331212452368

Monachesi, P., & Turco, M. (2017). New Urban Players: Stratagematic Use of Media by Banksy and the Hong Kong Umbrella Movement. International Journal of Communication, 11, 1448-1465.

Mortensen M., Neumayer C. (2021). The playful politics of memes. Information, Communication & Society, 24(16), 2367–2377. https://doi.org/10.1080/1369118X.2021.1979622

Moss, D. M. (2016). Diaspora Mobilization for Western Military Intervention During the Arab Spring. Journal of immigrant & refugee studies, 14(3), 277-297. https://doi.org/10.1080/15562948.2016.1177152

Mossberger, K., Wu, Y., & Crawford, J. (2013). Connecting citizens and local governments? Social media and interactivity in major U.S. cities. Government information quarterly, 30(4), 351-358. https://doi.org/10.1016/j.giq.2013.05.016

Munn, L. (2019). Alt-right pipeline: Individual journeys to extremism online. First Monday, 24(6). https://doi.org/10.5210/fm.v24i6.10108

Nemer, D. (2022). Technology of the Oppressed: Inequity and the Digital Mundane in Favelas of Brazil In: The MIT Press.

Nicholas, M. (2011). Global Counterinsurgency and the Crisis of Visuality. In (pp. 277). Duke University Press. https://doi.org/10.2307/j.ctv11vc8rg.17

Nielsen, R. K. (2009). The Labors of Internet-Assisted Activism: Overcommunication, Miscommunication, and Communicative Overload. Journal of information technology & politics, 6(3-4), 267-280. https://doi.org/10.1080/19331680903048840

Nielsen, R. K. (2011). Mundane internet tools, mobilizing practices, and the coproduction of citizenship in political campaigns. New media & society, 13(5), 755-771. https://doi.org/10.1177/1461444810380863

Norris, D. F., & Reddick, C. G. (2013). Local E-Government in the United States: Transformation or Incremental Change? Public administration review, 73(1), 165-175. https://doi.org/10.1111/j.1540-6210.2012.02647.x

O'Neil, C. (2017). Weapons of math destruction : how big data increases inequality and threatens democracy. Penguin Books.

Oden, A., & Porter, L. (2023). The Kids Are Online: Teen Social Media Use, Civic Engagement, and Affective Polarization. Social media + society, 9(3). https://doi.org/10.1177/20563051231186364

Oser, J., Hooghe, M., & Marien, S. (2013). Is Online Participation Distinct from Offline Participation? A Latent Class Analysis of Participation Types and Their Stratification. Political research quarterly, 66(1), 91-101. https://doi.org/10.1177/1065912912436695

Pariser, E. (2011). The filter bubble : what the Internet is hiding from you. Viking.

Park, M. J., Choi, H., Kim, S. K., & Rho, J. J. (2015). Trust in government's social media service and citizen's patronage behavior. Telematics and informatics, 32(4), 629-641. https://doi.org/10.1016/j.tele.2015.02.006

Penney J. (2020). "It's so hard not to be funny in this situation": Memes and humor in U.S. youth online political expression. Television & New Media, 21(8), 791–806. https://doi.org/10.1177/1527476419886068

Poplin, A., Shenk, L., & Passe, U. (2017). Transforming Pervasive into Collaborative: Engaging Youth as Leaders with GIS through a Framework that Integrates Technologies, Storytelling, and Action. Interaction design & architecture(s)(35), 182-204. https://doi.org/10.55612/s-5002-035-009

Rainie, H., & Wellman, B. (2012). Networked: the new social operating system. MIT Press.

Ralf, L., & Georg, A. (2019). E-Democracy: Conceptual Foundations and Recent Trends. In. Springer International Publishing. https://doi.org/10.1007/978-3-030-27184-8_2

Randma-Liiv, T. a. L. V. (2022). Engaging Citizens in Policy Making: e-Participation Practices in Europe.

Reed, M., & Keech, D. (2018). The "Hungry Gap': Twitter, local press reporting and urban agriculture activism. Renewable Agriculture and Food Systems, 33(6), 558-568. https://doi.org/10.1017/s1742170517000448

Richardson, M. (2022). How to witness a drone strike. Digital War, 3(1-3), 38-52. https://doi.org/10.1057/s42984-022-00048-3

Roengtam, S., Nurmandi, A., Almarez, D. N., & Kholid, A. (2017). Does social media transform city government? A case study of three ASEAN cities: Bandung, Indonesia, Iligan, Philippines and Pukhet, Thailand. Transforming government, 11(3), 343-376. https://doi.org/10.1108/TG-10-2016-0071

Rose, T., Sharpe, T. L., Shdaimah, C., & deTablan, D. (2018). Exploring coping among urban youth through photovoice. Qualitative social work : QSW : research and practice, 17(6), 795-813. https://doi.org/10.1177/1473325017693684

Salah Fahmi, W. (2009). Bloggers' street movement and the right to the city. (Re)claiming Cairo's real and virtual "spaces of freedom". Environment and urbanization, 21(1), 89-107. https://doi.org/10.1177/0956247809103006

Sastramidjaja, Y. (2023). Rhizome vs Regime: Southeast Asia's Digitally Mediated Youth Movements. In. Singapore: ISEAS - Yusof Ishak Institute.

Scharff, C. (2023). Are we all influencers now? Feminist activists discuss the distinction between being an activist and an influencer. Feminist theory. https://doi.org/10.1177/14647001231201062

Schradie, J. (2011). The digital production gap: The digital divide and Web 2.0 collide. Poetics (Amsterdam), 39(2), 145-168. https://doi.org/10.1016/j.poetic.2011.02.003

Schrock, A. R. (2016). Civic hacking as data activism and advocacy: A history from publicity to open government data. New Media & Society 18: 581–599.

Schrock, A. R. (2019). What is Civic Tech? Defining a Practice of Technical Pluralism. The Right to the Smart City.

Schröder, C. (2014). A Mobile App for Citizen Participation. ACM International Conference Proceeding Series,

Scott Nixon, A. (2009). Mediating Social Thought through Digital Storytelling. Pedagogies (Mahwah, N.J.), 4(1), 63-76. https://doi.org/10.1080/15544800802557169

Selander, L., & Jarvenpaa, S. L. (2016). Digital Action Repertoires and Transforming a Social Movement Organization. MIS quarterly, 40(2), 331-352. https://doi.org/10.25300/MISQ/2016/40.2.03

Senft, T. M., & Baym, N. K. (2015). What Does the Selfie Say? Investigating a Global Phenomenon: Introduction. International journal of communication (Online), 1588.

Shirky, C. (2008). Here comes everybody : the power of organizing without organizations. Penguin Press.

Storsul, T. (2014). Deliberation or Self-presentation?: Young People, Politics and Social Media. Nordicom review, 35(2), 17-28. https://doi.org/10.2478/nor-2014-0012

Strack, R. W., Magill, C., & McDonagh, K. (2004). Engaging Youth Through Photovoice. Health promotion practice, 5(1), 49-58. https://doi.org/10.1177/1524839903258015

Sunstein, C. R. (2007). Worst-case scenarios. Harvard University Press.

Sønderskov, M., Tortzen, A., & Higdem, U. (2023). A Rapid Feedback App: Possibilities and Pitfalls for Extended Democracy. Scandinavian journal of public administration (Print), 27(2), 39-56. https://doi.org/10.58235/sjpa.v27i2.11368

Tarrow, S. (2005). The New Transnational Activism. Cambridge University Press.

Vaast, E., Safadi, H., Lapointe, L., & Negoita, B. (2017). Social Media Affordances for Connective Action: An Examination of Microblogging Use During the Gulf of Mexico Oil Spill. MIS quarterly, 41(4), 1179-1206. https://doi.org/10.25300/misq/2017/41.4.08

Vainio, N. a. V. T. (2007). Free software philosophy and open source. https://doi.org/10.4018/978-1-59140-999-1.ch001

Van Dijck, J., & Poell, T. (2013). Understanding Social Media Logic. Media and communication (Lisboa), 1(1), 2-14. https://doi.org/10.17645/mac.v1i1.70

van Dijck, J., & Poell, T. (2015). Social Media and the Transformation of Public Space. Social media + society, 1(2), 205630511562248. https://doi.org/10.1177/2056305115622482

Varsaluoma, J., Pietilä, I., Väänänen, K., & Rättilä, T. (2023). Experimenting with youth-centred e-participation: The case of the Virtual Council. In (1 ed., Vol. 1, pp. 59-74). Routledge. https://doi.org/10.4324/9781003345114-4

Veljković, N., Bogdanović-Dinić, S., & Stoimenov, L. (2014). Benchmarking open government: An open data perspective. Government information quarterly, 31(2), 278-290. https://doi.org/10.1016/j.giq.2013.10.011

Vodanovich, S., Rohde, M., Dong, C.-s., & Sundaram, D. (2009). Wikis to support collaborative web spaces to promote youth well-being. International Symposium on Wikis,

Volpe, C. R. (2019). Digital diaries: new uses of PhotoVoice in participatory research with young people. Children's geographies, 17(3), 361-370. https://doi.org/10.1080/14733285.2018.1543852

Vromen, A., Loader, B. D., Xenos, M. A., & Bailo, F. (2016). Everyday Making through Facebook Engagement: Young Citizens' Political Interactions in Australia, the United Kingdom and the United States. Political studies, 64(3), 513-533. https://doi.org/10.1177/0032321715614012

Wagner, C. (2004). Wiki: A Technology for Conversational Knowledge Management and Group Collaboration. Communications of the Association for Information Systems, 13, 19. https://doi.org/10.17705/1CAIS.01319

Wales, P. (2012). Telling tales in and out of school: youth performativities with digital storytelling. Research in drama education, 17(4), 535-552. https://doi.org/10.1080/13569783.2012.727625

Wang, C., & Burris, M. A. (1997). Photovoice: Concept, Methodology, and Use for Participatory Needs Assessment. Health education & behavior, 24(3), 369-387. https://doi.org/10.1177/109019819702400309

Wang, C. C. (2006). Youth Participation in Photovoice as a Strategy for Community Change. Journal of community practice, 14(1-2), 147-161. https://doi.org/10.1300/J125v14n01_09

Watkins, S. C., Alexander, C., Andres, L.-B., Vivian, S., Jacqueline Ryan, V., & Lauren, W. (2018). The Digital Edge: How Black and Latino Youth Navigate Digital Inequality (1 ed., Vol. 4). NYU Press. https://doi.org/10.18574/9781479888788

Wellman, M. L. (2022). Black Squares for Black Lives? Performative Allyship as Credibility Maintenance for Social Media Influencers on Instagram. Social media + society, 8(1), 205630512210804. https://doi.org/10.1177/20563051221080473

Wilson, N., Dasho, S., Martin, A. C., Wallerstein, N., Wang, C. C., & Minkler, M. (2007). Engaging Young Adolescents in Social Action Through Photovoice: The Youth Empowerment Strategies (YES!) Project. The Journal of early adolescence, 27(2), 241-261. https://doi.org/10.1177/0272431606294834

Wukich, C. (2021). Government Social Media Engagement Strategies and Public Roles. Public performance & management review, 44(1), 187-215. https://doi.org/10.1080/15309576.2020.1851266

Xu, X. (2021). To Repress or to Co-opt? Authoritarian Control in the Age of Digital Surveillance. American journal of political science, 65(2), 309-325. https://doi.org/10.1111/ajps.12514

Yeats, D. (2009). Morality and Pragmatism in Free Software and Open Source.

Zavattaro, S. M., French, P. E., & Mohanty, S. D. (2015). A sentiment analysis of U.S. local government tweets: The connection between tone and citizen involvement. Government information quarterly, 32(3), 333-341. https://doi.org/10.1016/j.giq.2015.03.003

Zavattaro, S. M. a. B. T. A. (2016). Social Media for Government: Theory and Practice.

Zeitzoff, T. (2017). How Social Media Is Changing Conflict. The Journal of conflict resolution, 61(9), 1970-1991. https://doi.org/10.1177/0022002717721392

Zheng, L., & Zheng, T. (2014). Innovation through social media in the public sector: Information and interactions. Government information quarterly, 31(1), S106-S117. https://doi.org/10.1016/j.giq.2014.01.011

Zur, H. (2024). Place-oriented digital agency: Residents' use of digital means to enhance neighbourhood change. Urban studies (Edinburgh, Scotland). https://doi.org/10.1177/00420980231224629

Zur, H., & Hatuka, T. (2023). Local–Digital Activism: Place, Social Media, Body, and Violence in Changing Urban Politics. Social media + society, 9(2), 205630512311664. https://doi.org/10.1177/20563051231166443

Özdemir, B. P. (2012). Social Media as a Tool for Online Advocacy Campaigns: Greenpeace Mediterranean's Anti Genetically Engineered Food Campaign in Turkey. Global media journal Canadian edition, 5(2), 23-39.