

© The Author(s) 2022. Published by Oxford University Press on behalf of Royal African Society.

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<https://creativecommons.org/licenses/by/4.0/>), which permits unrestricted reuse, distribution, and reproduction in any medium, provided the original work is properly cited.

Advance Access Publication 29 April 2022

MISINFORMATION ACROSS DIGITAL DIVIDES: THEORY AND EVIDENCE FROM NORTHERN GHANA

ELENA GADJANOVA *, GABRIELLE LYNCH AND GHADAFI SAIBU

ABSTRACT

Social media misinformation is widely recognized as a significant and growing global problem. Yet, little is known about how misinformation spreads across broader media ecosystems, particularly in areas with varying internet access and connectivity. Drawing on research in northern Ghana, we seek to address this gap. We argue that ‘pavement media’—the everyday communication of current affairs through discussions in marketplaces, places of worship, bars, and the like and through a range of non-conversational and visual practices such as songs, sermons, and graffiti—is a key link in a broader media ecosystem. Vibrant pavement and traditional media allow for information from social media to quickly cross into offline spaces, creating a distinction not of the connected and disconnected but of first-hand and indirect social media users. This paper sets out how social, traditional, and pavement media form a complex and deeply gendered and socio-economically stratified media ecosystem and investigates its implications for how citizens differentially encounter, process, and respond to misinformation. Based on the findings, we argue that efforts intended to combat the spread of misinformation need to move beyond the Western-centred conception of what constitutes media and take different local modalities of media access and fact-checking into account.

*Elena Gadjanova (e.gadjanova@exeter.ac.uk) is Lecturer (Assistant Professor) in Politics at the University of Exeter Exeter, UK, Gabrielle Lynch is Professor of Comparative Politics at the University of Warwick, Coventry, UK, and Ghadafi Saibu is Junior Fellow at the Bayreuth International Graduate School of African Studies, Bayreuth, Germany. Funding for this research was provided by the Global Challenges Research Fund and an Impact Fund award from the College of Social Sciences and International Studies at the University of Exeter. We would like to thank Mumin Mutaru, Andrea Scheibler, and the Tamale-based team of IPSOS-Ghana for outstanding research help. We are also grateful to Nic Cheeseman, Jonathan Fisher, and Jamie Hitchen for comments on previous versions of this article and to the editors and three anonymous reviewers for constructive feedback and clear guidance throughout the review process.

Introduction

THE IMPACT OF SOCIAL MEDIA IS SIGNIFICANT AND GROWING. An increasing number of people are on, and influenced by, social media, and this engagement helps to shape offline views, activities, strategies, and outcomes.¹ The impact of this engagement is mixed: Social media platforms can be used not only to inform, support, organize, and mobilize but also for propaganda, surveillance, harassment, and incitement; they can be used to not only reach new audiences but also create echo chambers; they can not only empower marginalized sectors of society but also reinforce existing power relations.² A particular concern for many is how social media can be used to either intentionally or unintentionally misinform citizens in ways that undermine political accountability and social trust, breed apathy and disengagement, raise tensions, and promote violence. Rumours and deliberate lies have been around for a long time, but social media allows for both old and new types of misinformation to spread more quickly, often anonymously, and without the same geographic, regulatory, and moral constraints imposed by offline traditional media and face-to-face interactions.³

However, while the spread of misinformation via social media is widely regarded as a global problem and several studies have looked at why people share misinformation,⁴ relatively little attention has been given to how

1. Iginio Gagliardone, Nicole Stremiau and Gerawork Aynekulu, 'A tale of two publics? Online politics in Ethiopia's elections', *Journal of Eastern African Studies* 13, 1 (2019), pp. 192–213; George Karekwaivanane and Admire Mare, 'We are not just voters, we are citizens': Social media, the #ThisFlag campaign and insurgent citizenship in Zimbabwe', in Maggie Dwyer and Tom Molony (eds), *Social media and politics in Africa: Democracy, censorship and security* (Zed Books, London, 2019), pp. 43–65; Duncan Omanga, 'WhatsApp as "digital publics": the Nakuru Analysts and the evolution of participation in county governance in Kenya', *Journal of Eastern African Studies* 13, 1 (2019), pp. 175–191; Wisdom J. Tettey, 'Digital media, networked spaces, and politics', in Gabrielle Lynch and Peter Von Doepff (eds), *Routledge Handbook of Democratization* (Routledge, Abingdon, 2019), pp. 378–391.

2. Larry Diamond, 'Liberation technologies', *Journal of Democracy* 21, 3 (2010), pp. 69–83; Wilberforce S. Dzisah, 'Social media and elections in Ghana: Enhancing democratic participation', *African Journalism Studies* 39, 1, 27–47; Elena Gadjanova, Gabrielle Lynch, Jason Reifler and Ghadafi Saibu, 'Social media, cyber battalions and political mobilization in Ghana', 2019, <https://www.elenagadjanova.com/uploads/2/1/3/8/21385412/digital_media_cyber_battalions_and_political_mobilisation_in_ghana_report_final.pdf> (26 March 2021); Sharath Srinivasan, Stephanie Diepeveen and George Karekwaivanane, 'Rethinking publics in Africa in a digital age', *Journal of Eastern African Studies* 13, 1 (2019), pp. 2–17; Nic Cheeseman, Jonathan Fisher, Idayat Hassan, and Jamie Hitchen, 'Social media disruption: Nigeria's WhatsApp politics', *Journal of Democracy* 31, 3 (2020), pp. 145–159.

3. Michelle Osborn, 'Fuelling the flames: Rumour and politics in Kibera', *Journal of Eastern African Studies* 2, 2 (2008), pp. 315–327; Gadjanova et al., 'Social media'; Cheeseman et al., 'Social Media Disruption'.

4. For example, see Herman Wasserman and Dani Madrid-Morales, 'An exploratory study of "fake news" and media trust in Kenya, Nigeria and South Africa', *African Journalism Studies* 40, 1 (2019), pp. 107–123; Dani Madrid-Morales, Herman Wasserman, Gregory Gondwe, Khulekani Ndlovu, Etse Sikanku, Melissa Tully, Emeka Umejei, and Chikezie Uzuegbunam,

misinformation spreads across broader media ecosystems, how it reaches citizens who are not online, and how different audiences respond. This is a particularly important gap since the oft-cited ‘dangers of fake news’ depend on ‘how audiences interrogate and engage with social media platforms’⁵ and on how social media fits within ‘a wider ecosystem of fake news’ that often includes a ‘well-established offline “rumour mill”’.⁶ Moreover, while Africa is undergoing a profound digital transformation, both internet connectivity and digital literacy, remain relatively low and unevenly distributed within countries.⁷ What countries’ digital divides mean for the spread of social media misinformation is not yet well understood.

To address these gaps and by drawing on research conducted in Ghana’s Northern Region and the capital Accra, we develop a theory to explain how misinformation spreads across an area characterized by varying levels of internet connectivity and digital literacy, and whether and how it is debunked. We understand misinformation in the broad sense of incorrect or misleading information regardless of its intent to deceive, as contrasted with disinformation, which is deliberately intended to deceive. We define media as the most significant means of mass communication⁸ and identify three broad types: social, traditional, and pavement media. We conceptualize social media as ‘a group of internet-based applications or platforms that allow information sharing and co-ordination among its users’⁹ and traditional media as the official and regulated media that existed before the Digital Age and most notably includes newspapers, radio, and television—which can also increasingly be accessed online. This media is often termed ‘legacy media’ in communication studies.¹⁰ However, we use the term ‘traditional media’ as this is how it is most referred to in Ghana and across the African continent. Finally, we build upon Stephen Ellis’s discussion of ‘pavement radio’ or the ‘popular and unofficial discussion of current affairs’ in marketplaces, places of worship, bars, and the like¹¹ to conceptualize pavement media as including various non-conversational forms of

‘Motivations for sharing misinformation: A comparative study in six Sub-Saharan African countries’, *International Journal of Communication* 15, (2021), pp. 1200–1219.

5. Siguru Wahutu, ‘Fake news and journalistic “rules of the game”’, *African Journalism Studies* 40, 4 (2019), pp. 13–26.

6. Cheeseman et al., ‘Social media disruption’, pp. 153, 147 & 152 on Nigeria.

7. International Telecommunication Union, ‘Digital trends in Africa 2021: Information and communication technology trends and developments in the Africa region 2017–2020’, 2021.

8. Oxford English Dictionary online, <<https://www.oed.com>> (26 March 2022).

9. Mala Mustapha, ‘The 2015 general elections in Nigeria: new media, party politics and the political economy of voting’, *Review of African Political Economy* 44, 152 (2017), pp. 312–321, p. 313.

10. Ana Ines Langer and Johannes B. Gruber, ‘Political agenda setting in the hybrid media system: Why legacy media still matter a great deal’, *The International Journal of Press/Politics* 26, 2 (2021), pp. 313–340.

11. Stephen Ellis, ‘Tuning into pavement radio’, *African Affairs* 88, 352 (YEAR), pp. 321–330, p. 321.

everyday communication such as songs, sermons, graffiti, flyers, and street theatre.¹² We view this as a form of media, rather than just as a means of communication or mediation, because of the fact that it constitutes a major source of information and news for many citizens.¹³ In speaking of these three types of media, we nevertheless recognize that they often overlap and are non-exhaustive. Most notably, there are various forms of digital or online media, such as blogs and online-only magazines and newspapers, that do not fit neatly within the three-part typology. However, while this new media is increasingly important, we have opted to not focus on it given the difficulties of separating it out from the traditional media that it often seeks to mimic, and from the social media that most users of new online media also access.

While information criss-crosses these different spaces, not everyone enjoys equal access or voice: Relatively better-off, male, and younger citizens are more likely to be online, just as they tend to be the more vocal and influential contributors to traditional and pavement media. This variability in the ‘forms of information which one possesses and the modes of its access and use’¹⁴ creates important information hierarchies—from those who enjoy direct access to social media and are simultaneously embedded in informed networks at one end of the scale to those with no direct access and less informed social networks at the other end. Critically, these hierarchies are clearly gendered, socially-economically, and geographically stratified: Men, wealthier, better educated, and urban Ghanaians are much more likely to be both online and in informed networks than women and poorer rural citizens with little or no formal education.¹⁵ This in turn matters for how citizens encounter and process false content and ultimately determines their relative vulnerability to misinformation.

After setting out Ghana’s complex media ecosystem and associated hierarchies, we proceed to study its implications for how citizens encounter

12. Karin Barber, ‘Popular arts in Africa’, *African Studies Review* 30, 3 (1987), pp. 1–78; Francis Nyamnjoh, *Africa’s media: Democracy and the politics of belonging* (Zed Books, London, 2005).

13. In this, we join a number of African communications scholars (for a review and summary, see Admire Mare, ‘Popular communication in Africa: an empirical and theoretical exposition’, *Annals of the International Communication Association* 44, 1 (2020), pp. 81–99). For our own evidence, please see our findings below, particularly [Figures 2, 3, and 5](#).

14. David J. Gunkel, ‘Second thoughts: Toward a critique of the digital divide’, *New Media & Society* 5, 4 (2003), pp. 499–522, p. 506.

15. In the most recent Afrobarometer data for Ghana, 30 percent of women reported having internet access on their mobile phones, compared to 48 percent of men. In addition, 25 percent of residents in rural areas had mobile internet access, compared to 52 percent of residents in urban areas. Only 15 percent of rural women reported having mobile internet access compared to 61 percent of urban men. Source: Afrobarometer Round 8 data, available online at www.afrobarometer.org. On the gendered access to information both on- and offline in Ghana, see Daniel Abu Ankrach, Comfort Y. Freeman, and Albert Afful, ‘Gendered access to productive resources—evidence from small holder farmers in Awutu Senya West District of Ghana’, *Scientific African* 10 (2020), pp. 1–12.

and respond to misinformation. We characterize the attitudes and the stated behaviours of first-hand and indirect social media users with a view to understanding their patterns of exposure to and vulnerability to online misinformation. We find that indirect social media users are at a significant disadvantage and face compound challenges in responding to misinformation: The indirect nature of the information received renders it more difficult to scrutinize, while the fact that indirect users are often exposed to misinformation by those they tend to trust—for example via traditional and pavement media—makes it less likely that they will suspect the information received. At the same time, as disproportionately female, poor, rural, and/or illiterate members of the community, indirect users are on average less likely—in a highly stratified society such as Ghana—to publicly question the misinformation that they encounter ‘and’ to be amongst the political entrepreneurs whose role it is to actively produce and spread misinformation. Conversely, while the ability to spread information anonymously—and without the same geographic and moral constraints imposed by traditional and pavement media—makes first-hand social media users more likely to spread misinformation, it also makes them more likely to be suspicious of it, and makes it easier for them—both in terms of available sources and social norms—to evaluate and question the same.

In sum, differential access to, and levels of engagement with, various types of media—social, traditional, and pavement—ensures that citizens not only have access to different types and levels of information, but also have different capacities to spread misinformation, and to question and debunk it. This means, somewhat paradoxically, that—while first-hand social media users play a central role in producing and circulating misinformation, and often face a more intense barrage of misinformation than indirect users—it is those without direct access to social media who can be most at risk from online misinformation campaigns.

Our study contributes to the growing literature on the impact of social media on Africa’s societies and politics and to research on the spread of misinformation. While much of the existing research focuses on the attitudes and patterns of behaviour of either the ‘connected’—those frequently and vocally online—or the ‘disconnected’—those with poor access to the internet and social media, we draw attention to the ways, in which information flows ‘between’ the two groups. We develop a theory to explain how citizens are likely to encounter and respond to social media misinformation, applicable to spaces characterized by digital inequalities in Africa and beyond. Indeed, while our primary research was conducted in northern Ghana, our theoretical framework, conceptualization of users, and some of our findings extend across the sub-continent and beyond: Namely, that information can move easily and quickly between online and offline spaces via

both traditional and pavement media, creating an ideal type of first-hand and indirect social media users with differential means to access, question, and debunk misinformation. The paper thus contributes to the growing literature on the impact of social media, and to that on the politics and spread of misinformation, and conceptualization of ‘the media’, more broadly.

Africa’s interconnected media and its implications for citizens’ vulnerability to misinformation

Social media, and the mobile phones that it is usually accessed through, have become a part of citizens’ everyday ‘lives, routines, and rituals’ across Africa and beyond.¹⁶ This has been encouraged by the spread of cheaper smartphones and social media access, and by people’s desire to connect with friends and family, to be entertained, and/or keep abreast of current affairs. But not everyone is online. Internet connectivity is often limited in remote, rural, and relatively poorer areas. Pre-existing socio-economic inequalities also give rise to digital divides between the highly literate and multilingual and those with low literacy skills; between citizens with unlimited access and those with ‘social bundles’ who have a ‘walled-garden internet experience’ that limits their browsing to (often limited versions of) social media platforms;¹⁷ and between those who are offline, but have access to newspapers, TV, and informed social networks, and those who are offline, but have limited access to traditional media and whose friends and family members are similarly disengaged.

What are the implications of Africa’s digital inequalities for the spread of social media misinformation? Are spaces with low internet connectivity relatively immune to ‘fake news’ propagated over Facebook or WhatsApp? We posit that recognizing social media as intersecting with, rather than separate from, traditional and pavement media is central to understanding how misinformation crosses digital divides in Africa and how it reaches citizens who are not (frequently) online. This has important implications for how citizens encounter, and ultimately respond to social media misinformation. We argue, first, that social and traditional media co-exist within a single media ecosystem and often converge as content flows back and forth across ‘multiple media platforms’ and as users are ‘encouraged to seek out new information and make connections among dispersed media content’.¹⁸ An increasing number of people are alerted to and/or access traditional media—newspaper articles, and radio and TV clips and

16. Herman Wasserman, ‘Mobile phones, popular media, and everyday democracy: Transmissions and transgressions’, *Popular Communication* 9 (2011), pp. 146–158, p. 151.

17. Nothias, ‘Access granted’, p. 331; Wilems, ‘Beyond Free Basics’.

18. Henry Jenkins, *Convergence culture: Where old and new media collide* (New York University Press, New York, 2006), pp. 2–3.

summaries—through social media, while social media increasingly influences traditional media content¹⁹ and prompts newsworthy offline action²⁰ in ways that ensure a constant feedback loop between the two.

Second, social and traditional media intersect with pavement media. Traditional and social media content is regularly discussed in ‘neighborhoods, social gatherings and in many public places’²¹ as those with access to a radio, TV, newspapers, or social media act ‘as a point of presence or communication node’²² when they discuss reports, posts, images, and videos with others as part of the public discussions that animate everyday life. At the same time, offline pavement media communications are echoed on social media or ‘digital pavement radio’²³ as songs, sermons, and memes, for example, are posted online, and updates from friends, family, and other acquaintances are increasingly shared via social media platforms.

The result is an interconnected media ecosystem that sees a constant movement of information between, and a regular overlapping of traditional, social, and pavement media: People online increasingly interact with traditional and pavement media, while online debates feed back into traditional media reporting and public interactions. Critically, misinformation can move remarkably quickly across these different spaces: As a rumour that is prevalent on pavement media, for example, gets discussed on traditional media or online, or as a rumour online grabs the attention of journalists or of participants in offline public discussions. Even major news houses do not always conduct effective fact-checking: For example, the Ghana Broadcasting Corporation (GBC) aired ‘as real news, a satirical piece from a fake website which claimed former South African President Thabo Mbeki had died’.²⁴ More important than misreporting, however, is the misinformation spread by those who participate in panel discussions, which have become

19. Tettey, ‘Digital media, networked spaces, and politics’.

20. Karekwaivanane and Mare, ‘We are not just voters, we are citizens’; Omanga, ‘WhatsApp as “digital publics”’; Florence N. Selnes and Kristin S. Orgeret, ‘Social media in Uganda: Revitalising news journalism?’ *Media, Culture & Society* 42, 3 (2020), pp. 380–397.

21. Rabson Kondowe, ‘Despite a low internet penetration, Malawi is worried about fake news in its election run-up’, *Quartz Africa*, 10 May 2019, < <https://qz.com/africa/1616511/malawi-election-has-a-fake-news-problem-on-whatsapp-facebook/> > (15 April 2021); also Maggie Dwyer, Jamie Hitchen and Thomas Molony, ‘Between excitement and scepticism: The role of WhatsApp in Sierra Leone’s 2018 elections’, in Maggie Dwyer and Thomas Molony (eds), *Social media and politics in Africa: Democracy, censorship and security* (Zed Books, London, 2019), pp. 1–18.

22. Francis B. Nyamnjoh, ‘Globalisation, boundaries and livelihoods: Perspectives on Africa’, *Identity, Culture and Politics* 5, 1&2 (2004), pp. 37–59, p. 53.

23. Ylva Ekström, Anders Høg Hansen and Hugo Boothby, ‘The globalization of the pavement’, *Nordicom Review* 33 (2012), pp. 163–176, p. 163.

24. Ahiabenu, et al., *Media Perspectives*, p. 2.

a particularly common element of radio broadcasting in particular.²⁵ As Idayat Hassan explains of northern Nigeria:

Mainstream television and radio stations, for example, frequently host ‘political consultants’ – or *Sojojin Baci* (‘soldiers of the mouth’) as they are known in the North – who further spread half-truths and manipulations in favour of their candidates. Often online and offline routes work together. A rumour that begins on social media may be taken up by the *Sojojin Baci* through more traditional media, who can add nuance to the story in a way that allows it to resonate with a new audience.²⁶

Similarly, misinformation from social media can also move—often with great speed—onto pavement media. As Nic Cheeseman, Jonathan Fisher, Idayat Hassan, and Jamie Hitchen summarize of WhatsApp in Nigeria:

Some stories originated outside the platform but ‘went viral’ when transferred online, while others began life on social media but spread through a range of other mechanisms, including personal interactions, radio phone-in programs, and sermons. In other words, WhatsApp was one link in a chain of information-sharing mechanisms that criss-crossed the digital and physical worlds; it amplified, but did not fundamentally alter, the creation and sharing of ‘fake news’.²⁷

They go on to give the example of a prominent preacher who played a pivotal role in spreading a rumour that initially circulated on social media that President Buhari had been replaced by a clone when he ‘commended ... [this] story to his vast congregation’ in December 2018.²⁸ As Cheeseman and his collaborators note, the preacher’s status and relationship with his congregation ensured that he not only helped to spread the rumour but also gave credence to it as a trusted local authority figure.²⁹ Critically, the role of religious leaders across the social and pavement media space was found to be of broader significance ‘in amplifying misinformation and disinformation, their voice carrying as much weight online as it does in physical community life’.³⁰ The implication of such feedback loops between traditional, social, and pavement media is that, even in areas with low internet penetration rates, there is no simple digital divide that separates the connected and disconnected: Even those without direct access to social media

25. Tettey, ‘Talk radio and politics in Ghana’.

26. Idayat Hassan, ‘How fake news spreads sowing distrust ahead of Nigeria’s elections’, *African Arguments*, 31 January 2019, <<https://africanarguments.org/2019/01/nigeria-fake-news-2019-election/>> (26 March 2021).

27. Cheeseman et al., ‘Social Media Disruption’, p. 153.

28. *Ibid.*, p. 152.

29. *Ibid.*

30. *Ibid.*, p. 153.

become indirect users as they receive offline updates, with no citizen truly isolated from social media or its effects.

In sum, we argue that intersecting traditional, social, and pavement media create an important distinction not between the connected and the disconnected, but between first-hand and indirect social media users in terms of how citizens encounter, process, and respond to social media content. This distinction rests on broader informational hierarchies, which are gendered and socio-economically and geographically stratified, and has important implications for citizens' vulnerability to social media misinformation: Because indirect social media users will likely be exposed to misinformation on traditional media or through friends, family, and (often higher status) community members, they will be less likely to suspect, openly question, or seek to debunk it. Therefore, far from being immune', we find that indirect users can actually be 'more' vulnerable to misinformation originating online. Efforts to combat misinformation thus need to be carefully tailored to the predominant mode of its spread. Our theory contributes to understanding how social media misinformation spreads across digital divides and has implications for what types of measures are likely to succeed in combating it. We return to these questions in the conclusion.

Research setting and methods

Ghana's Northern Region provides an ideal setting to study how misinformation spreads and is debunked in an area characterized by large socio-economic inequalities and differences in digital literacy and patterns of social media use. The region is among the poorest and least urbanized parts of the country, with relatively limited infrastructure and communication networks.³¹ Literacy rates are also amongst the lowest in the country—43 percent on average—and as low as 12 percent in some areas,³² and lower still among older rural women. Mobile data coverage in Ghana is largely concentrated in the country's south: Of Ghana's 10 mobile data providers, only 1 (Vodafone) covers the Northern Region with a single tower located in the administrative capital, Tamale (see the [Appendix](#)).³³ Only 1 in 10 households in the Northern Region have internet at home, compared to 1 in 3 in Greater Accra region.³⁴ Access to traditional media is also highly unequal: Just over 50 percent of households own a TV in the

31. 'Ghana Poverty Mapping Report, Ghana Statistical Service, 2015, <<https://www2.statsghana.gov.gh/docfiles/publications/POVERTY%20MAP%20FOR%20GHANA-05102015.pdf>> (21 January 2022).

32. Current literacy rate in Ghana by region. <<https://yen.com.gh/106652-current-literacy-rate-ghana-by-regions.html>> (18 February 2021).

33. <<https://www.cellmapper.net/>> (18 February 2021).

34. <<https://www.statista.com/statistics/1139238/internet-access-in-households-in-ghana-by-region/>> (18 February 2021).

Northern Region, compared to 87 percent in Accra (national capital), and this figure falls to 36 percent in poorer rural areas,³⁵ 46 percent of households had a radio in 2018, the lowest figure of all regions in the country at the time.³⁶ Watching television and listening to the radio is often a communal activity however,³⁷ so ownership figures likely underestimate their reach (see also [Figure 2](#) below). Access to major national newspapers is largely limited to Tamale with fewer than 10 percent of Northern Region citizens reporting reading newspapers regularly.³⁸

We focused on four parliamentary constituencies in the Northern Region: Tamale South, Tamale Central, Tamale North, and Nanton. The area includes Ghana's third-largest city and regional capital, Tamale—where a majority of residents have first-hand access to social media—and the surrounding rural areas where only a minority do ([Figure 1](#)). The four constituencies demarcate a space with sharp socio-economic contrasts within a relatively compact geographical area: Tamale Central is the most urban constituency in northern Ghana, ethnically diverse, and an economic and trade hub. Tamale North and Tamale South are peri-urban, and Nanton rural.

Primary research for the paper involved 75 interviews and eight focus group discussions with politicians, party operatives, social media 'bloggers', party 'warriors', journalists, and civil society activists in Ghana's capital city, Accra, and in and around Tamale between March and July 2019. Together with IPSOS-Ghana, we also carried out an in-person survey of 1,500 citizens across the four constituencies that made up our study area in July 2019. The survey asked both closed and open questions about citizens' social media use and their experience with, and attitudes towards, misinformation. Interviews for the survey were carried out in respondent's native language and translated into English by research assistants. The survey results are thus based on self-reported attitudes and behaviours. This no doubt introduces response bias, but it gave our respondents the opportunity to describe how they experience and interact with social media. Open-ended survey questions, while more difficult to administer, code and aggregate, are shown to be more accurate in capturing respondents' salient

35. Source: Global Data Lab, % Households with a TV, <https://globaldatalab.org/areadata/tv/GHA+SLE/?levels=1%2B2%2B3%2B5%2B4&interpolation=0&extrapolation=0&nearest_real=0> (19 January 2022).

36. Doris Dokua Sasu, 'Radio ownership in households in Ghana 2018, by Region', Source: statista.com, <<https://www.statista.com/statistics/1135214/distribution-of-households-owning-radios-in-ghana-by-region/#statisticContainer>> (19 January 2022).

37. Debra Spitulnik, 'Mobile machines and fluid audiences: Rethinking reception through Zambian radio culture', in Faye D. Ginsburg, Lila Abu-Lughod, and Brian Larkin (eds), *Media worlds: Anthropology on new terrain* (University of California Press, Berkeley, 2002), pp. 337–354.

38. Afrobarometer Round 8 Data for Ghana, <<https://afrobarometer.org/data/ghana-round-8-data-2019>> (21 January 2022).

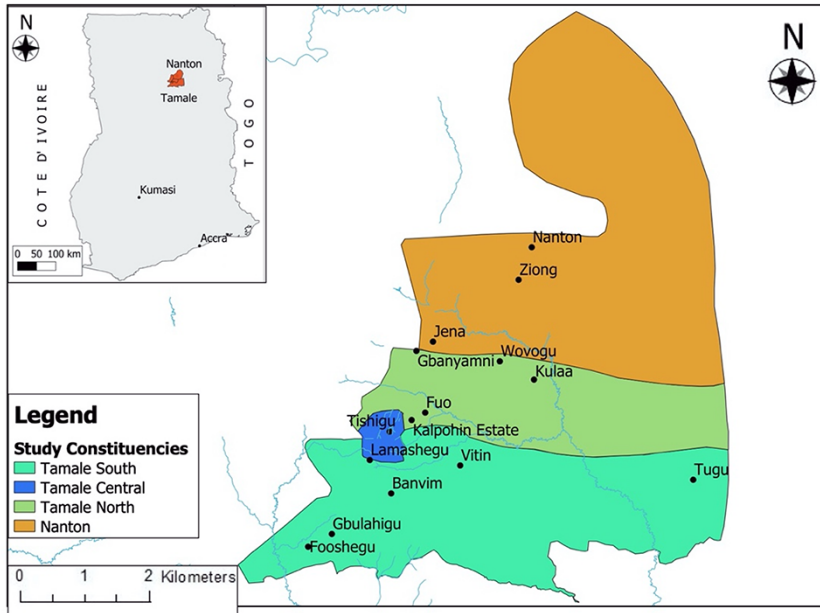


Figure 1 Study area.

Source: Compiled by Issahaka Fuseini for the authors.

concerns³⁹ and have been used for the study of other sensitive topics.⁴⁰ This makes them well-suited to our purpose of studying attitudes and behaviours regarding social media misinformation.

For ethical reasons, we abstained from mentioning any particular example of misinformation to survey respondents. Chieftaincy disputes occasionally erupt in sporadic violence in northern Ghana⁴¹ and rumours related to chieftaincy long predate social media so we expected that at least some of the misinformation circulating online would be about highly sensitive chieftaincy issues and proceeded with great caution so as not to inadvertently fuel rumours and tension. In probing experiences with, and attitudes towards, misinformation, we relied on interviewees and survey

39. John G. Geer, 'Do open-ended questions measure "salient" issues?' *Public Opinion Quarterly* 55, 3 (1991), pp. 360–370.

40. Elena Gadjanova, 'Electoral clientelism as status affirmation: Evidence from Ghana', *Journal of Modern African Studies* 55, 4 (2017), pp. 593–621.

41. Jesse Salah Ovardia, 'Stepping back from the brink: A review of the 2008 Ghanaian election from the capital of the Northern Region', *Canadian Journal of African Studies* 45, 2 (2011), pp. 310–340.

participants to volunteer and recall details about what they had subsequently definitively learnt was ‘fake news’. This skews our data towards the types of rumours and lies that could be conclusively proven false. While we cannot show from these responses how citizens might behave towards more subtle attempts at manipulation, we nevertheless think there is value in better understanding how people become exposed and respond to outright falsehoods across digital divides given the potential for precisely such falsehoods to diffuse widely and even result in violence.⁴²

The convergence of social, traditional, and pavement media in northern Ghana

As elsewhere on the continent, mobile phones and social media have become a part of Ghanaians’ everyday lives. This has been encouraged by the spread of cheap smartphones, which can be bought for as little as GHS 60 (GBP 9 or USD 11) in the markets of Accra, free access to limited forms of social media through schemes such as Facebook’s Free Basics,⁴³ time-limited data bundles that include unlimited access to various social media platforms,⁴⁴ ‘cultural values of sociality, interconnectedness, interdependence and conviviality’,⁴⁵ and a widespread popular interest in current affairs.⁴⁶ 78 percent of our survey respondents were social media users, 72 percent of those accessed social media through their mobile phones, with Facebook and WhatsApp the most popular platforms.⁴⁷ Many who use social media check their accounts multiple times a day and it was not uncommon for people to say that it was the first thing that they did when they woke up, and the last thing that they did before they went to sleep.

An increasing amount of traditional media content is available on and accessed through social media via media houses’ social media posts and pages, and by links shared on people’s Facebook or Twitter feeds or through various WhatsApp groups. Indeed, while ‘radio and television remain the most dominant news sources (used daily by 56 percent and 47 percent

42. Bute, Swati, ‘The role of social media in mobilizing people for riots and revolutions’, in Bogdan Pătruț and Monica Pătruț (eds), *Social media in politics* (Cham, Springer, 2014), pp. 355–366.

43. Toussaint Nothias, ‘Access granted: Facebook’s free basics in Africa’, *Media Culture & Society* 42, 3 (2020), pp. 329–348.

44. Wendy Willems, ‘Beyond free basics: Facebook, data bundles and Zambia’s social media internet’, *Africa at LSE*, 1 September 2016, <<https://blogs.lse.ac.uk/africaatlse/2016/09/01/beyond-free-basics-facebook-data-bundles-and-zambias-social-media-internet/>> (15 April 2021).

45. Nyamnjoh, ‘Globalisation, boundaries and livelihoods’, p. 53.

46. Wisdom J. Tettey, ‘Mobile telephony and democracy in Ghana: Interrogating the changing ecology of citizen engagement and political communication’, *Telecommunications Policy* 41, (2017), pp. 685–694, p. 689.

47. See also Josephine A. Sanny and Edem Selormey, ‘Double-edged sword? Ghanaians see pros, cons of social media, want access but not fake news’ Afrobarometer Dispatch No. 366 (2020), <<https://afrobarometer.org/publications/ad366-ghanaians-see-pros-cons-social-media-want-access-not-fake-news>> (26 March 2021) for 2019 Afrobarometer data.

of Ghanaians, respectively)', the number of Ghanaians using social media as a daily news source increased from 12 percent in 2014 to 22 percent in 2019.⁴⁸ Many also connect 'with political pundits and commentators' online⁴⁹ and the most popular hashtags often relate to political issues and politicians.⁵⁰

This demand for news is reinforced by supply-side logic. Since reintroducing political competition in early 1992, Ghana has become an established democracy with two dominant political parties—the National Democratic Congress (NDC) and the New Patriotic Party (NPP)—which have frequently alternated in power.⁵¹ The country embarked on liberalizing its media alongside the institutionalization of democracy in the 1990s.⁵² Media freedom was enshrined in the 1992 Constitution and a number of measures were subsequently put in place to remove state surveillance and control, open up the media space, and protect freedom of speech. These include the establishment of an independent National Media Commission in 1993, the repealing of libel laws in 2001, the formulation of the Ghana ICT for Accelerated Development Policy in 2003, and the National Telecommunication Policy in 2005.⁵³ Crucially, both main parties have supported these measures. As a result, Ghana has witnessed a significant growth and pluralization of both private and public broadcast media.

In an increasingly competitive traditional media context, journalists and media houses use social media to attract and retain audiences, and the all-important advertising income that flows from the same. In mid-2019, Tamale alone had 16 local radio stations ensuring fierce competition for listeners, with several linked to churches and mosques or politicians and party leaders, which added an additional evangelizing or mobilizing zeal to their programming.⁵⁴ In this context, stations and presenters invest in

48. Sanny and Selormey, 'Double-edged sword?' p. 3.

49. Adasa N. Kofi Frimpong, Ping Li, Gabriel Nyame and Md Altab Hossain, 'The impact of social media political activists on voting patterns', *Political Behaviour*, published online before print (2020), <<https://doi.org/10.1007/s11109-020-09632-3>>.

50. Portland Communications, *How Africa Tweets 2016* (2016), < <https://portland-communications.com/publications/how-africa-tweets-2016/>> (16 April 2021).

51. See Emmanuel Gyimah-Boadi, 'Another step forward for Ghana', *Journal of Democracy* 20, 2 (2009), pp. 138–152; Nic Cheeseman, Gabrielle Lynch and Justin Willis, *The moral economy of elections in Africa: Democracy, voting and virtue* (Cambridge University Press, Cambridge, 2020).

52. Ufuoma Akpojivi, 'Democratising the media in the new democracies of Ghana and Nigeria: Challenges and prospects', *Ecquid Novi: African Journalism Studies* 35, 3 (2014), pp. 87–105.

53. Peter Arthur, 'Democratic consolidation in Ghana: the role and contribution of the media, civil society and state institutions', *Commonwealth & Comparative Politics* 48, 2 (2010), pp. 203–226.

54. cf. Rosalind Hackett, 'Charismatic/Pentecostal appropriation of media technologies in Nigeria and Ghana', *Journal of Religion in Africa* 28, 3 (1998), pp. 258–277; Wisdom J. Tettey, 'Talk radio and politics in Ghana: Exploring civic and (un)civil discourse in the public sphere',

social media to live-stream programmes, post adverts or summaries of programmes aired, collect comments from listeners online, conduct online polls, and update listeners on breaking news; and use their own and trending hashtags to increase the visibility of their activities. Through such efforts they seek to gain a competitive edge locally and extend their geographic reach.⁵⁵

As elsewhere, debates on social media also help to shape the content of traditional media coverage.⁵⁶ Indeed, several journalists with whom we spoke estimated that over 80 percent of their story leads were sourced from social media. As one radio presenter explained:

... most of the breaking news that comes in ... we see it on social media. So, we don't really go there [just] to feed people information. We also go there to get information for ourselves ... it has become an information hub, where you go fetch and feed.⁵⁷

This process of 'fetching' information is multidimensional. Journalists capitalize on the ready availability of information online—from political party communications⁵⁸ through to 'user-generated content'.⁵⁹ Social media also provides excellent insight into newsworthy topics. For example, in a study on the influence of Twitter on Ghana's major radio stations, Solomon Katachie found that 'traditional media repeated or monitored trending issues on social media' with most radio stations adding 'special segments to their programmes where social media feeds and trends ... are discussed'.⁶⁰ This links to another aspect of this dynamic relationship: Debates on social media can become news stories in and of themselves either because of the information revealed—from political scandals to public endorsements—or because of the offline action they spur. The latter

in Dina Ligaga, Dumisani Moyo and Liz Gunner (eds), *Radio in Africa: Cultures, publics and communities* (Johannesburg, Wits University Press, 2011), pp. 19–35.

55. Interview, radio journalist, Tamale, 19 July 2019; Tettey, 'Talk radio and politics in Ghana'; Solomon Katachie, *The inter-media agenda-setting influence of Twitter on traditional media in Ghana during the 2016 Ghanaian elections*, (University of Ghana, unpublished MPhil dissertation, 2017).

56. Benjamin Muindi, 'Negotiating the balance between speed and credibility in deploying Twitter as journalistic tool at the Daily Nation newspaper in Kenya', *African Journalism Studies* 39, 1 (2018), pp. 111–128; Dwyer et al., 'Between excitement and scepticism'; Nkwachukwu Orji, 'Social media and elections in Nigeria: Digital influence on election observation, campaigns and administration', in Maggie Dwyer and Thomas Molony (eds), *Social media and politics in Africa: Democracy, censorship and security* (Zed Books, London, 2019), pp.152–172; Selnes and Orgeret, 'Social media in Uganda'.

57. Interview, radio presenter, Tamale, 19 July 2019.

58. Ransford Edward Van Gyampo, 'Social media, traditional media and party politics in Ghana', *Africa Review* 9, 2 (2017), pp. 125–139, p. 131.

59. Kwami Ahiabenu II, Gideon Oforu-Peasah and Jerry Sam, *Media perspectives on fake news in Ghana*, 2 May 2018, < <http://penplusbytes.org/wp-content/uploads/2018/05/FAKE-NEWS-STUDY.pdf> > (16 April 2021), p. 8.

60. Katachie, *The inter-media agenda-setting influence of Twitter*, pp. 93 & 7.

included (at the time of our research) the #DropThatChamber debate, which prompted parliament to reject a plan to build a \$200 million new debating chamber. There is thus a constant information loop between social and traditional media with both becoming enmeshed in a larger media ecosystem ensuring that it is ‘unhelpful to draw firm distinctions between “social media” on one hand and professional journalism ... on the other’.⁶¹

Yet, Ghana’s media ecosystem also includes a third media space too often neglected in academic studies informed by western ideas of what constitutes ‘media’. In short, when people talk of the media, attention usually falls to radio, television, newspapers, magazines, and, increasingly, to social media platforms such as Facebook, WhatsApp, and Twitter.⁶² However, if we return to our definition of media as a means of mass communication then it is clear that a significant proportion of Ghanaians gain their news ‘from conversations with friends and acquaintances’⁶³ and other non-conversational forms of popular communication, such as sermons, songs, and posters,⁶⁴ and thus from what we call pavement media. The importance of pavement media is evident from observations and interviews, as well as from our survey, which found that a significant proportion of people—49 percent—gained their political news from friends and family (Figure 2).

As Stephen Ellis detailed, the centrality of pavement media to mass communication stems not only from the inequalities of access given the cost of newspapers, televisions, and smartphones and data bundles but also stems from the influence that the state and powerful politicians have historically enjoyed over traditional media content. The latter encouraged audiences to mistrust official news and to give ‘more weight to the spoken word’.⁶⁵ Indeed, a 1983 survey found that Ghanaians ‘were more inclined on principle to believe rumour than official news’.⁶⁶ The liberalization of

61. Peter Chonka, “‘Igu sawir’ gone too far?’ Social media and state reconstruction in Somalia’, in Maggie Dwyer and Thomas Molony (eds), *Social media and politics in Africa: Democracy, censorship and security* (Zed Books, London, 2019), pp. 19–42, p. 27 on Somalia.

62. Van Gyampo, ‘Social media, traditional media and party politics in Ghana; Dzisah, ‘Social media and Elections in Ghana’.

63. Ellis, ‘Tuning in to pavement radio’, p. 321.

64. Hackett, ‘Charismatic/Pentecostal appropriation of media technologies in Nigeria and Ghana’; Birgit Meyer and Annelies Moors, ‘Introduction’, in Birgit Meyer and Annelies Moors (eds), *Religion, media, and the public sphere* (Indiana University Press, Bloomington, 2006); Audrey Gadzekpo, ‘Street news: The role of posters in democratic participation in Ghana’, in Herman Wasserman (ed.), *Popular media democracy and development in Africa* (Routledge, Abingdon, 2011), pp. 105–122; Winston Mano, ‘Popular music as journalism in Africa: issues and context’, in Herman Wasserman (ed.), *Popular media democracy and development in Africa* (Routledge, Abingdon, 2011), pp. 91–104.

65. Ellis, ‘Tuning in to pavement radio’, p. 322.

66. *Ibid.*, p. 325.

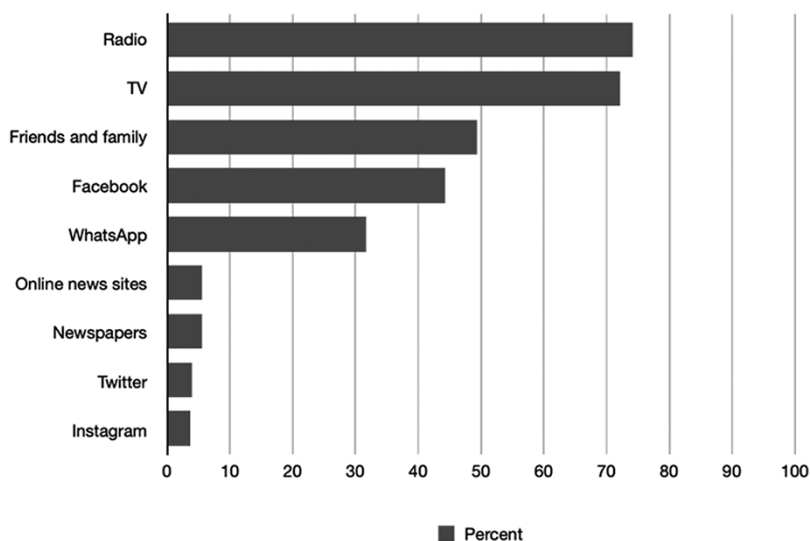


Figure 2 Where do you mostly get news on politics and current events?

traditional media and proliferation of radio stations in the 1990s⁶⁷ has gone hand-in-hand with Ghanaians placing more trust in traditional media (Figure 2).

However, this has not undermined the vibrancy of pavement media. On the contrary, it is an everyday reality in Ghana for discussions of current affairs to take place in homes and workplaces and at bus and motor-bike stages, marketplaces, weddings, funerals, and sporting events, and in schools, universities, bars, places of worship, and chiefs' compounds, and for information and news to be shared through other non-conversational modes of popular communication, such as sermons, songs, posters, and visual arts. Much trust is placed in pavement media, particularly in participants with higher social status and/or those who are known to be embedded in informed networks—be it friends and family, traditional leaders, or religious leaders (Figure 3).

As with traditional media, there is also much cross-fertilization between pavement and social media. On the one hand, the kinds of debates that take place in public and private spaces across the country are increasingly

67. Birgit Meyer, 'Going and making public: Pentecostalism as public religion in Ghana', in Harri Englund (ed.), *Christianity and public culture in Africa* (Ohio University Press, Athens, 2011), pp. 149–166.

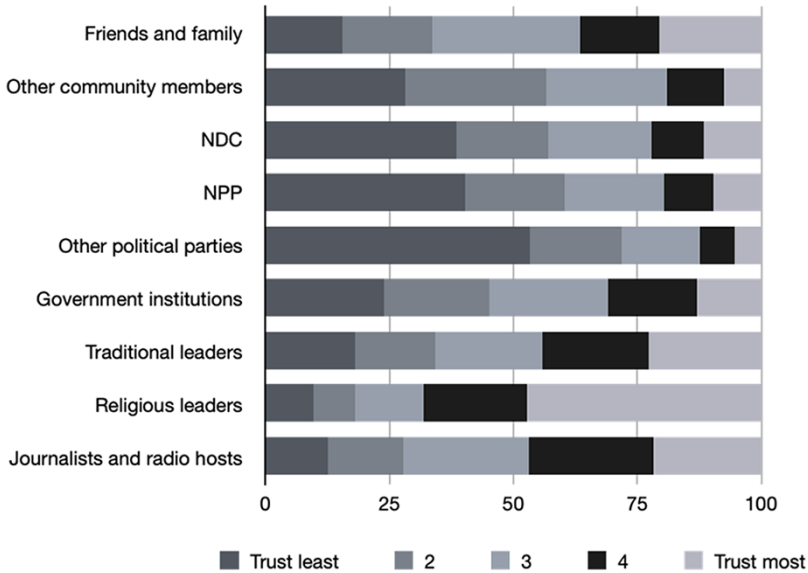


Figure 3 How much do you trust information coming from the following sources?

taking place on social media ensuring the emergence of a ‘digital pavement radio’.⁶⁸ On the other hand, online content is regularly shared and discussed offline: One meme is ‘often shared with more people just like one newspaper is read by a whole community’,⁶⁹ while ‘messages read by someone with a smartphone ... [are] quickly relayed to people without’.⁷⁰ As one interviewee explained with regard to political campaigns: ‘anytime you put something on social media ... people will read, they will share, if they don’t share on social media, they share on their community gathering, they share at school, they share everywhere they go’.⁷¹

Not only is online content shared offline and vice versa, but those who do the sharing are often relatively loud and/or authoritative voices. This is because the most influential participants in pavement media—from politicians and party activists to religious leaders, chiefs, school teachers, and university students—are amongst the community members most likely to have access to a smartphone and data.⁷² To give some examples: Politicians

68. Ekström et al., ‘The globalization of the pavement’, p. 163.

69. Mare, ‘Popular communication in Africa’, p. 96; Dwyer et al., ‘Between excitement and scepticism’, p. 106.

70. *Ibid.*

71. Interview, NPP party activist, Nanton, 23 July 2019.

72. Gadjanova et al., ‘Social media’.

and party activists—who are disproportionately male in northern Ghana as elsewhere in the country⁷³—are visible and influential actors on pavement media. To be successful, political aspirants ‘need to cultivate a reputation for being accessible to constituents, as well as for assisting them’.⁷⁴

As a result, political campaigns ‘remain ground-intensive ... and heavily reliant on physical presence’,⁷⁵ as politicians combine large rallies with roadside or townhall meetings, door-to-door canvassing, and appearances at religious services, weddings, and funerals, and as they work with local party structures and build-up networks of local supporters who help to organize events and mobilize support.⁷⁶ In this vein, George Bob-Milliar shows how ‘party-branded sheds’ provide a physical space for political communication in northern Ghana that is informal and dominated by impersonal ties,⁷⁷ and how fierce competition between the two dominant parties helps to maintain and motivate their pavement media activities on an impressive scale.⁷⁸

However, it is not just politicians and party activists who participate in public political debates through pavement media, and who take pavement media discussions back online. Ghana has a rich associational life connected to civil society organizations, churches, and mosques. For example, Lauren Morris MacLean found that in each village that she worked in, ‘there were five or more active churches and one mosque, each with its own youth group, women’s organization, choir, welfare association and/or prayer group’ with members sometimes meeting ‘with other congregation members as frequently as twice daily’.⁷⁹ As is the case across much of the continent, religion in Ghana thus provides an ‘institutional and social, as well as physical space, for political debate’;⁸⁰ religious leaders and figures also use ‘multiple media for the communication of that commentary – not

73. Sylvia Bawa and Francis Sanyare, ‘Women’s participation and representation in politics: perspectives from Ghana’, *International Journal of Public Administration* 36, 4 (2013), pp. 282–291.

74. Cheeseman et al., *The moral economy of elections in Africa*, p. 225.

75. *Ibid.*, p. 232.

76. Paul Nugent, ‘Winners, losers and also rans: money, moral authority and voting patterns in the Ghana 2000 elections’, *African Affairs* 100, 400 (2001), pp. 405–428; George M. Bob-Milliar, ‘Party youth activists and low-intensity electoral violence in Ghana: a qualitative study of party foot soldiers’ activism’, *African Studies Quarterly* 15, 1 (2014), pp. 125–153.

77. George M. Bob-Milliar, ‘Place and party organizations: party activism inside party-branded sheds at the grassroots in northern Ghana’, *Territory, Politics, Governance* 7, 4 (2019), pp. 474–493.

78. George M. Bob-Milliar, ‘Political party activism in Ghana: factors influencing the decision of the politically active to join a political party’, *Democratization* 19, 4 (2012), pp. 668–689.

79. Lauren Morris MacLean, ‘Mediating ethnic conflict at the grassroots: the role of local associational life in shaping political values in Côte d’Ivoire and Ghana’, *Journal of Modern African Studies* 42, 4 (2004), pp. 589–617, pp. 594 & 596.

80. Gregory Deacon, George Gona, Hassan Mwakimako and Justin Willis, ‘Preaching politics: Islam and Christianity on the Kenya coast’, *Journal of Contemporary African Studies* 35, 2 (2017), pp. 148–167, p. 149.

just from the pulpit, but through pastoral letters, local committees, and latterly through DVDs, the Internet and mobile phones'.⁸¹ As a result, religion provides both vocal participants in, and an important space for, pavement media discussions, which is particularly important given their status as the most trusted sources of information (Figure 3).

First-hand and indirect social media users in northern Ghana

Within Ghana's complex media ecosystem, a digital divide emerges between those with regular access to the Internet and social media applications and those without. Because of the ways in which social media content diffuses offline, we argue that this divide is better understood as one between first-hand and indirect users, than between the 'connected and disconnected'.⁸² This distinction is clearly an ideal-type: First-hand social media users are also indirect users since they also gain information from pavement and traditional media; many Ghanaians are part-time first-hand users due to the cost of data bundles and connectivity issues; and many indirect users gain occasional access to social media by borrowing a friend or family member's mobile phone or by visiting a cyber café.⁸³ Nevertheless, the distinction between direct and indirect users is useful because it allows us to capture different patterns of exposure and attitudes towards fake news, and thus improves our understanding of how citizens encounter, process, and respond to misinformation.

Figure 4 summarizes the characteristics of our respondents who stated they did not use or had no access to social media. It shows that indirect users are more likely to be female, with only informal or primary education, to live in rural areas, and be older (respondents over 45, in particular, are likely to be in this category). They are also less likely to express interest in politics and more likely to be non-partisan. In contrast, those with direct access are more likely to be better educated, urban, male, and relatively younger.

Access to social media requires a device, connectivity, and data. Our survey found that men were twice as likely as women to buy mobile data, and that, among those who do buy data, men spent about double the amount per month than women. Less than 40 percent of citizens without formal education used mobile data, while there were stark age group and rural/urban disparities in mobile data access and use—with older and rural citizens enjoying lower levels of access. This means that even those female, older, and rural citizens who do have some access to social media

81. *Ibid.*, p. 2; also Meyer and Moors, *Religion, media, and the public sphere*; Meyer, 'Going and making public', p. 159.

82. Mare, 'Politics Unusual?' p. 101.

83. Nyamnjoh, 'Globalisation, boundaries and livelihoods', p. 54.

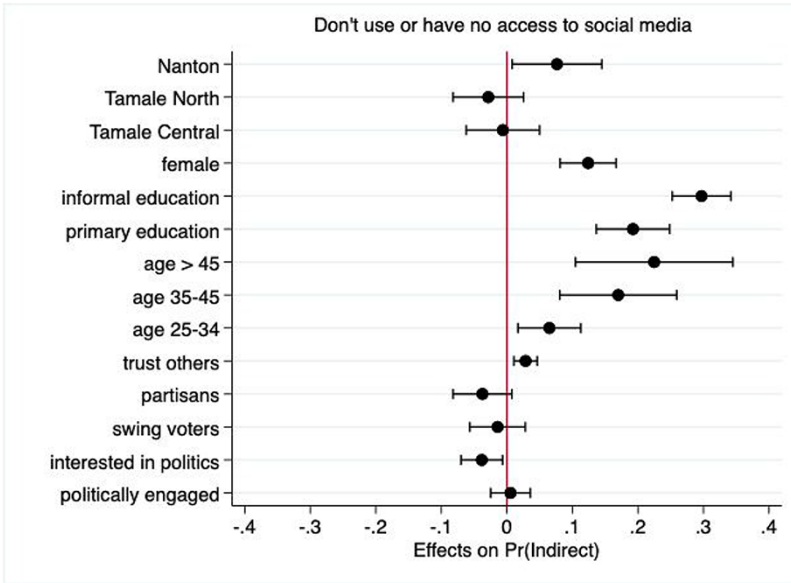


Figure 4 Those who do not use or have no access to social media in northern Ghana.

*Note: Logit model, marginal effects (dy/dx) presented. Constituency baseline: Tamale South. Age baseline 'Under 25'. Detailed results in the Appendix.

are more likely than their male, better-off, and urban citizens to have a 'walled-garden' internet experience.⁸⁴

Logics of misinformation exposure and responses in an interconnected media space

How do first-hand and indirect social media users encounter and respond to misinformation? What are the implications of different exposure channels for citizens' vulnerability to misinformation? Our theoretical framework of interlinked social, traditional, and pavement media means that all types of (mis-)information can move rapidly between different spaces. This was clear from our survey. We asked respondents to recall a recent example of fake news that they had encountered, and where they saw it first. Three main sources emerged: Social media (Facebook and WhatsApp, with Twitter a distant third), traditional media (radio, TV,

84. Nothias, 'Access granted', p. 331.

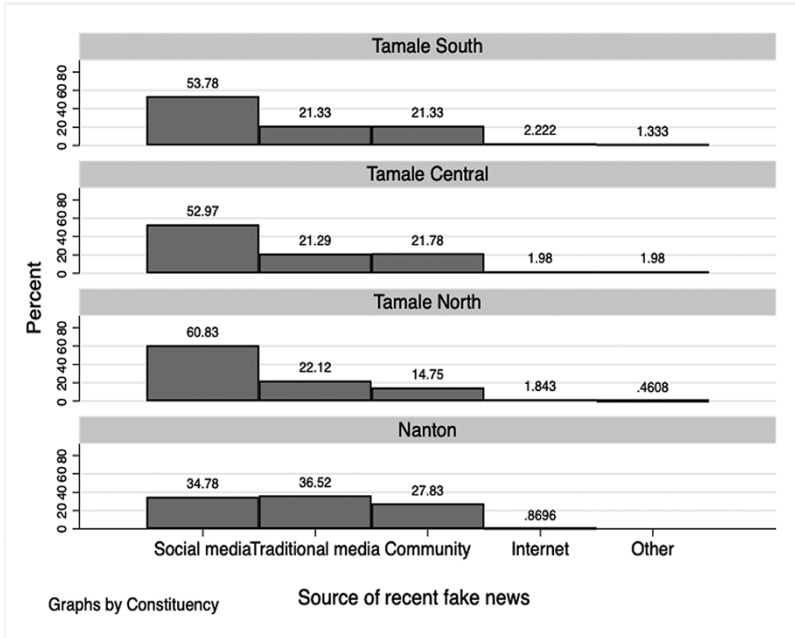


Figure 5 Sources of recent ‘fake news’ by constituency.

and newspapers), and community (friends, relatives, and other community members). Indeed, while social media was the primary channel of misinformation in the three urban constituencies selected (Tamale South, Tamale Central, and Tamale North), traditional media was the most common source of fake news in rural Nanton (Figure 5). However, it is also noteworthy that community spread of misinformation—or pavement media—accounted for 15–22 percent of known fake news in the urban constituencies, and close to a third in Nanton.

The single most common example of misinformation cited in the survey was a rumour that the current Dagbon King (the Yaa Naa)—the highest traditional authority in the area—had been killed. This rumour had caused distress to many people given the importance of the chieftaincy institution in Ghana and the fraught history of the Yaa Naa succession,⁸⁵ and had gained a lot of attention both online and offline. In our survey, people recalled first hearing the rumour on Facebook (11), WhatsApp (3),

85. William MacGaffey, ‘Death of a king, death of a kingdom? Social pluralism and succession to high office in Dagbon, northern Ghana’, *Journal of Modern African Studies* 44, 1 (2006), pp. 79–99; Steve Tonah, ‘The politicisation of a chieftaincy conflict: The case of Dagbon, northern Ghana’, *Nordic Journal of African Studies* 21,1 (2012), pp. 1–20.

the radio (5), from friends (4), and at the market (3). While we cannot be completely certain where the rumour originated, Facebook is the most likely culprit: It is the social medium most conducive to anonymity and anonymity would be key in ‘seeding’ a rumour with such potential to elicit strong emotional responses among what are fairly tightly-knit communities.

The dominance of Facebook in the rumour’s trajectory underscores how social media is increasingly a source of misinformation, but references to other sources also remind us of the constant flow of information back and forth between social, traditional, and pavement media. What’s more, several respondents volunteered more than one rumour and gave different initial sources for each subsequent one: Facebook and WhatsApp, Facebook and the wider community, and Facebook and radio/TV. This suggests that there are multiple and overlapping sources of misinformation exposure for first-hand social media users as well.

As could be expected, the source of exposure to fake news varied significantly between first-hand and indirect social media users. The vast majority of those who did not have direct access to social media heard fake news from the community or on traditional media (Figure 6).

Such high rates of community and traditional media transmission of fake news in an interconnected media space where a significant portion of the population is ‘not’ on social media, yet is regularly exposed to social media content, raise important questions about citizens’ vulnerability to misinformation. In general, vulnerability to social media misinformation can be thought of as a combination of three related, yet distinct, factors: First, how suspicious citizens are of social media content, second, what actions they are prepared to take regarding suspicious content, and third, how long it takes them to conclusively debunk a false rumour. We examine each in turn.

Indirect users were almost 30 percent less likely to suspect that social media contains misinformation than first-hand users (Figure 7). This speaks to a general vulnerability to misinformation among those who do not use or have no access to social media. Because they are likely to encounter social media content through the more trusted traditional media or wider community, they are less likely to suspect and to question it.

Next, we asked respondents what they would do if they encountered something they suspected was fake news, regardless of its source. While the majority (51 percent) said they would ignore it or do nothing, a significant number—42 percent—claimed that they would seek to fact-check the information in some way: Either by further investigating it on their own, by confirming with family or friends, or by publicly commenting and warning others (Figure 8).

Significantly, once the prospect of messages containing fake news was raised, those without direct access to social media were no less likely to

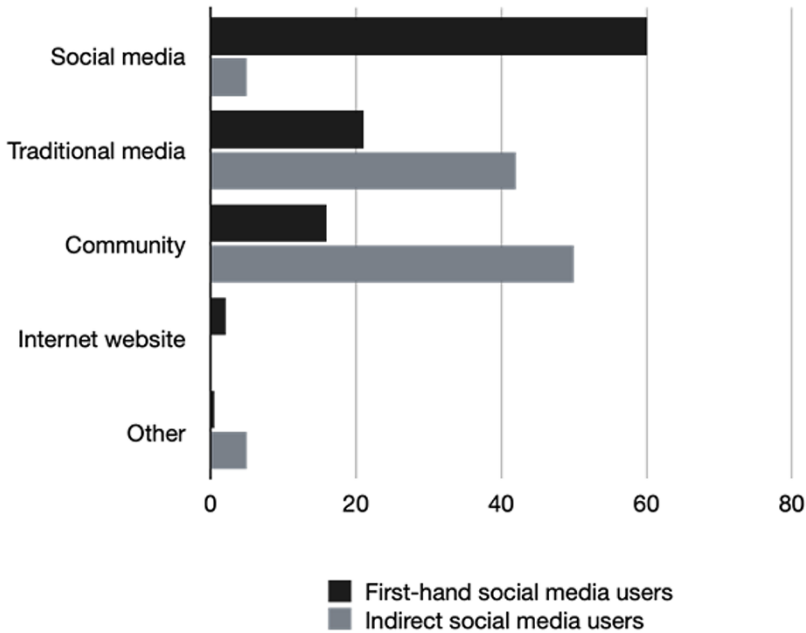


Figure 6 Sources of recent ‘fake news’ for first-hand and indirect social media users.

*When respondents gave multiple examples of misinformation, categories reflect the first instance of ‘fake news’ shared and its source.

express a willingness to investigate suspected misinformation than first-hand users. How they would seek to debunk rumours, however, varied between the two groups: Those without direct access were more likely to seek to confirm suspected misinformation with family and friends, although a significant number expressed a willingness to investigate/do research on their own.

What also stands out about indirect users’ responses to fake news is that they are more likely to express a willingness to sanction the source of misinformation in some way: By withholding trust or even challenging them directly (blaming and insulting). Thus, confirmed misinformation appears to prompt a stronger emotional response among people who are not on social media, suggesting that beyond information, traditional and pavement media are also networks of morality and affection. This makes sense when we consider the closely-knit social networks via which pavement media operates—networks in which good social standing is essential and norms of reciprocity are closely policed, and the relatively high levels

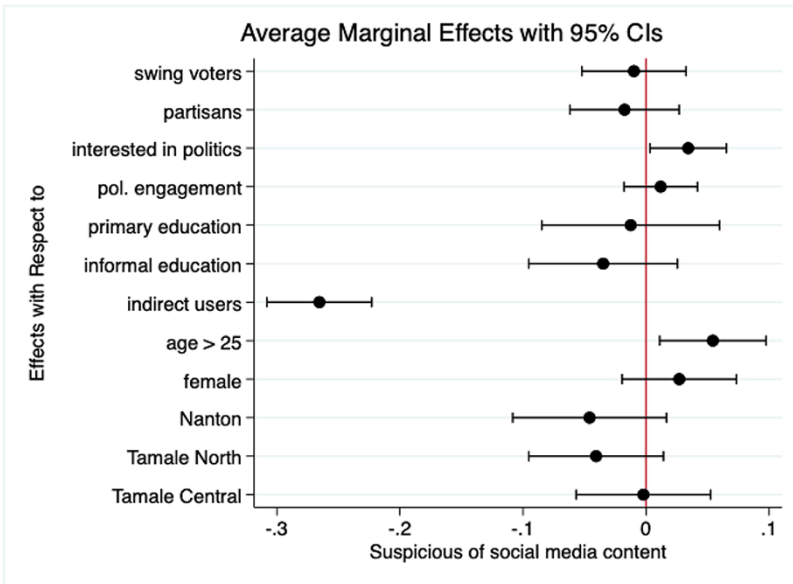


Figure 7 Who suspects social media contains misinformation?

*Note: Logit model, marginal effects presented. Dependent variable coded 0 if respondents answered ‘don’t know’, ‘never’ or ‘rarely’, 1 if ‘sometimes’, ‘often’ or ‘always’ to ‘How often do you suspect social media contains fake news?’ Detailed results in the Appendix.

of trust traditional media enjoys. People who encounter fake news offline are also more likely to be able to put a face and a name to the source of misinformation, which facilitates direct accountability and moral demands.

Below, we show the determinants of apathy towards fake news—our second proxy for vulnerability to misinformation (Figure 9). Respondents with higher education levels (high school and above), those interested in politics, and those suspicious of social media content, were more likely to express a willingness to do something about suspected fake news. Conversely, respondents living in rural areas (Nanton and Tamale North) were more likely to show a passive attitude towards misinformation. Significantly, higher mobile data spend per month is associated with less willingness to fact-check suspected fake news. We find no significant independent effects of partisanship or gender on responses to fake news.

Finally, we examine how quickly citizens were able to debunk instances of misinformation. We asked respondents to recall how soon after hearing/seeing a recent example of fake news they learned it was fake. Responses

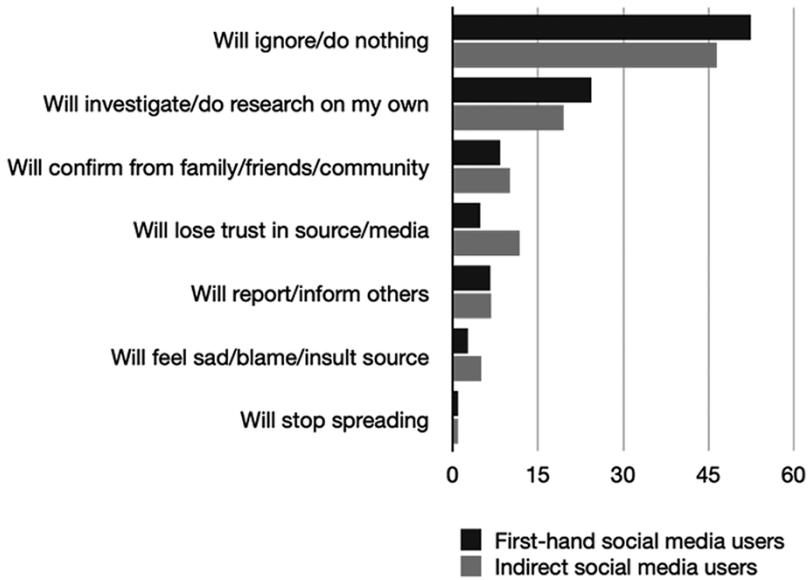


Figure 8 Self-reported responses to suspected 'fake news'.

*Categories created from open responses to the question: 'What would you do if you see or hear something that you suspect is "fake news"?'

varied from a few minutes to several weeks. [Figure 10](#) shows the main factors associated with fake news being debunked within a day.

The source of misinformation was the strongest predictor of how quickly it was debunked. Fake news first encountered on internet news sites, traditional media, and through friends or relatives was 20 to 40 percent less likely to be proven false quickly compared to those that circulated on social media. Respondents willing to fact-check suspicious content were more likely to discover circulating misinformation—that could be conclusively dispelled—within a day. It is important to note that these are self-reported behaviours and are thus likely to reflect respondents' perceptions about how quickly it is 'desirable' for misinformation to be debunked. Nevertheless, the difference is still notable given that such response bias is likely to cut across survey respondents.

To return to the rumour that the Dagbon King had been killed, people had sought to fact-check in various ways: Through Facebook, by asking friends and relatives, by phoning into radio stations, and even by calling the chief's personal secretary. Confirmation that the rumour was false had been quickest on WhatsApp (within 30 minutes according to one respondent) and slower on radio and TV (within 2–3 days according to others).

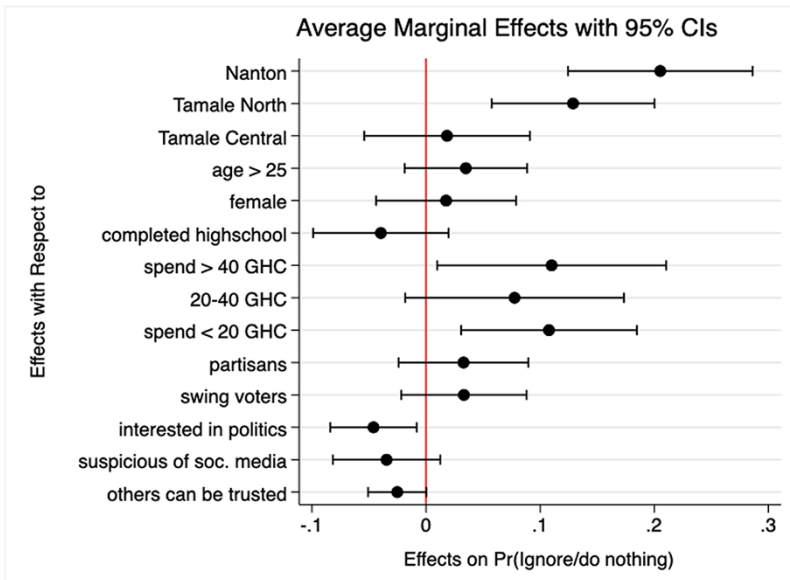


Figure 9 Who is apathetic towards suspected 'fake news'?

*Note: Logit model, dependent variable coded 1 if respondents said 'ignore/do nothing' to "What would you do if you see or hear something that you suspect is 'fake news'?", 0 otherwise. Constituency baseline: Tamale South.

This example also provides further evidence of how information hierarchies extend beyond social media access and reflect the extent to which individuals are embedded in local networks and have access to those who can plausibly be regarded as well-informed: Not every citizen has a direct line to the chief's personal secretary. As one government employee put it, if he suspected fake news, 'I could even contact the real source!'.⁸⁶

At a more general level, those with a phone can call a well-connected friend or family or call a local radio station. As one radio presenter explained, 'We've had news on social media that turns out to be false. So, people sometimes, even if they see it on social media, they want to call to confirm whether it's true or not'.⁸⁷ Similarly, those who live in more densely populated areas can ask someone who is believed to be relatively well-informed in the market, their place of worship, or other local gathering place.

86. Interview, government employee, Tamale, 25 July 2019.

87. Interview, radio presenter, Tamale, 19 July 2019.

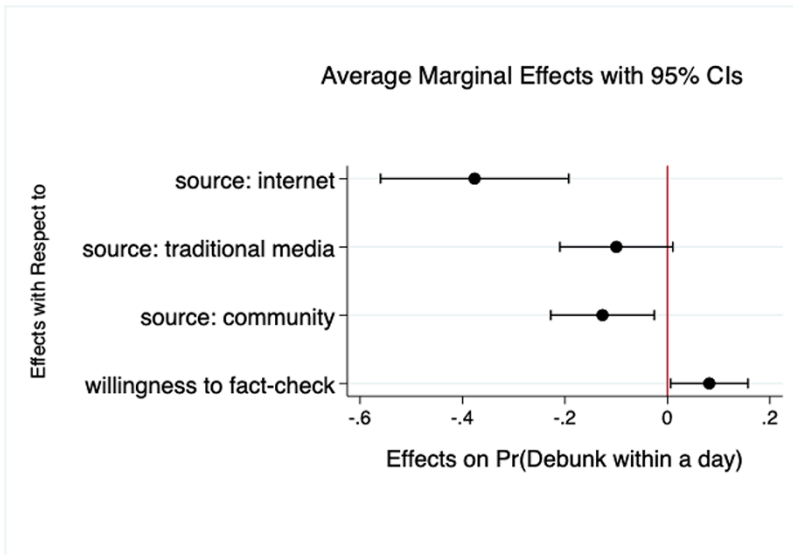


Figure 10 Determinants of the fast debunking of suspected fake news.
 *Note: Logit model, marginal effects (dy/dx) presented. Source baseline: 'social media'.

Figures 7–10 highlight the factors contributing to vulnerability to misinformation in our research area. Citizens with no direct access to social media and lower education levels are less likely to question social media content, and rural residents are more likely to be apathetic to fake news. High levels of trust in certain news sources can exacerbate vulnerability to misinformation when these same sources are found to be (either willingly or unwillingly) spreading fake news. Taken together, the results point to a significant and compound vulnerability to social media misinformation among indirect users because citizens with no first-hand access to social media are likely to live in rural areas, have lower education levels, and hear fake news through more trusted information sources (traditional media and the wider community).

Table 1 summarizes our findings regarding how Ghana's interconnected media space and intersecting digital inequalities influence citizens' patterns of exposure, relative vulnerability, and responses to social media misinformation be they first-hand or indirect social media users. As noted, we find clear differences between first-hand and indirect social media users in terms of their vulnerability to misinformation and patterns of response.

First, social media users have an opportunity to directly scrutinize the authenticity of the information shared online, while indirect users lack

Table 1 Logics of misinformation exposure and responses for first-hand and indirect social media users in northern Ghana.

	<i>First-hand social media users</i>	<i>Indirect social media users</i>
Characteristics	Disproportionately younger, male, urban, educated, economically better off	Disproportionately older, female, rural, with little to no formal education, relatively poorer
Most common channel of misinformation exposure	Social media	Pavement media
Vulnerability to misinformation originating on social media	Relatively lower	Relatively higher
Response to suspected misinformation	Faster, individualized, private	Slower, socially normed, public

access to the complete content and thus have less capacity to detect any obvious problems with the same. For example, if one sees an ‘official document’ shared online, one can assess whether it looks legitimate—in terms of the letter-heading, signature, stamp, and the like⁸⁸—in ways that are not possible if one only hears about the document on the radio or in the marketplace. Those with unlimited internet access can also then undertake additional ‘online forays’ to investigate sites and authors, and cross-check information shared, in ways that are impossible for those with unlimited plans.⁸⁹

Second, indirect users tend to hear about ‘fake news’ from traditional media or pavement media and thus from what they consider to be relatively trusted sources. This issue of trust is reinforced by the fact that indirect users are on average much less likely to suspect that social media contains misinformation and thus question information that is shared with them. Although the issue is complicated by possible differences between types of social media—from closed WhatsApp groups to Twitter—and from the fact that social media users, just like non-users, will trust some sources more than others.

Third, not only might social media content appear more plausible to indirect users but also it may be more difficult for them to publicly question the information shared due to popular expectations and social norms. As Admire Mare reminds us, ‘human interaction is always mediated by something in-between, something that enables us to connect and communicate in a particular way, while it also creates a distance between us

88. Dwyer et al., ‘Between excitement and scepticism’.

89. *Ibid.*, p. 120.

by being in-the-way'.⁹⁰ However, what is 'in-between' and 'in-the-way' varies between offline and online interactions as the scope for anonymity and geographical distance that are key characteristics of online interactions render it easier for people to ask questions and show disbelief than if they hear, read or see the information via traditional or pavement media. This is true anywhere but is exacerbated by the patriarchal culture that shapes popular ideas of what it is to be a 'good' woman, wife, daughter, man, husband, son, or leader in northern Ghana. This is important as people tend to want to be viewed as 'good' people; a desire only further fuelled by the felt need to sustain good relations with those who someone may need to call upon for assistance later. As one interviewee explained:

The rural folks, the vulnerable, the women, the marginalised, peasants with disabilities, they need to ask the questions ... But they are the ones that do not have the means to use social media. Do you understand, because that is tough for them and the gap that they have ... You see, it is one thing to be on social media, Facebook, and all that, you know you see what other people are doing. But there's another, asking questions, it is another probing. It is another, you know, demanding for one or two things, interrogating national issues.⁹¹

The capacity to ask questions and probe is arguably greater online where it is easier to hide one's identity, and where one is less likely to know the person in question, than offline—either for traditional media, which often lacks the interactive nature of social media, or for pavement media, where citizens are involved in face-to-face interactions and may feel particularly strong pressure to conform to social norms and expected behaviours, and show respect for authority figures.

The difference here is one of degree: It is not that first-hand social media users are not also embedded in social hierarchies that may influence their response to misinformation, but rather that they have greater agency, which stems from the greater scope for privacy, anonymity, and directness that internet access provides its users. This access matters because it opens up further channels for fact-checking outside of users' immediate social networks. Indirect users, on the other hand, are constrained by their existing social networks and traditional media access when attempting to fact-check suspected misinformation and do not enjoy either privacy or anonymity in their efforts to do so. Thus, their fact-checking behaviour is subject to

90. Mare, 'Politics Unusual?' p. 97.

91. Interview, government employee, Tamale, 25 July 2019.

stronger social norms and constraints related to clear status hierarchies of sources and information. This makes their response to misinformation on the whole both slower and socially-normed: Subject to group norms about acceptable behaviour in questioning authority.

Finally, first-hand users may also be more likely to hide the obvious for their own self-interest. Certainly, first-hand users are more likely to belong to the chain of social media battalions working as party activists on social media.⁹² Because of this, they may shield the truth about misinformation from indirect users provided it scores them a political point. In fact, they may not want to disclose or retract an exposed misinformation to indirect users because they may not want to reverse it to lose political credibility or risk it backfiring on their political patrons.

Conclusion

Media studies tends to focus on traditional and, increasingly, on social media as 'the media'. However, there is a third media space—pavement media—which is important to recognize if we are to understand how (mis)information moves between online and offline spaces in the contemporary world. From primary research in northern Ghana, it is clear that all three spaces are vibrant and an important source of (mis)information.

Recent evidence from other places leads us to conclude that a similarly complex media ecosystem is evident across much of sub-Saharan Africa and beyond. Recent surveys conducted by the British Institute in Eastern Africa found that 26 percent of Ugandans and an equal percentage of Zambians cited 'offline discussions with family, friends, and other acquaintances' as one of the forms of media that they 'mostly get' their news from.⁹³ In addition, a range of studies continue to attest to the ongoing vibrancy of pavement media across the continent.⁹⁴ Outside of Africa, little attention is normally given to pavement media—or to 'the grapevine' as it is sometimes called—but that does not mean it does not exist, even if it maybe often be less vibrant, while more traditional media is also in a constant feedback loop with social media. The implication: When it comes to exposure to online (mis)information, the idea of the 'connected' and 'disconnected' is always likely to be an over-simplification. In short, due to the movement of (mis)information between online and offline spaces via traditional and/or

92. Gadjanova et al., 'Social media'.

93. The survey material is accessible through the British Institute in Eastern Africa (contact prince.guma@biea.ac.uk).

94. For example, see Herman Wasserman (ed.), *Popular media democracy and development in Africa* (Routledge, Abingdon, 2011); Ambreena Manji, *The struggle for land and justice in Kenya* (James Currey, Woodbridge, 2020).

pavement media, few (if any) are now fully immune from online discussions leading to an important ideal-type distinction between first-hand and indirect social media users.

Africa's interconnected media spaces and multiple, intersecting, digital inequalities have significant implications for citizens' patterns of exposure, relative vulnerability, and response to social media misinformation. We have identified two channels of misinformation exposure: Social, traditional, and pavement media for first-hand users and traditional and pavement media for indirect users. These channels matter because they influence both the relative vulnerability of different users to misinformation and the patterns of their response to (suspected) fake news, in somewhat paradoxical ways.

First-hand social media users often possess the means and capacity to independently assess the social media content: Our data show they are keenly aware of the prevalence of misinformation on social media and generally more suspicious of the social media content. Conversely, citizens who are exposed to social media misinformation via traditional media or pavement radio are less likely to question it, leaving them more vulnerable. This vulnerability is not necessarily a function of literacy or socio-economic characteristics alone, although the latter do play a part; we argue that indirect users' relatively higher vulnerability to misinformation stems also from their embeddedness within relationships of trust and existing social hierarchies that help to dictate whose authority is to be questioned and thus what type of information is to be taken at face value.

Critically, these findings are likely to be more context specific than those relating to the idea of a complex media ecosystem and first-hand and indirect social media users, since the profile of those who are often online or never/rarely online, their embeddedness within relationships of trust and existing social hierarchies will vary. However, while this has implications for whether, and the extent to which, first-hand or indirect social media users are more likely to be vulnerable to misinformation campaigns, we want to suggest that the broader point—namely, that first-hand and indirect users will likely have differential access and capacities to evaluate, question, and debunk misinformation—is likely to hold true for two key reasons. First, the movement of misinformation from online to offline spaces will vary in speed and degree ensuring differential access. Second, first-hand and indirect social media users are likely to share certain

characteristics leading to differential capacities to evaluate, question, and debunk misinformation.⁹⁵

The patterns we describe have clear implications for battling the spread of misinformation in Ghana and beyond. First, the interconnected media space that we have described means that misinformation originating on social media travels through multiple channels simultaneously, significantly increasing its reach. Second, efforts to battle misinformation should take into account the different modes of social media access and the logics of responses to suspected fake news that we describe. This means that there is a need to harness multiple information channels in the service of debunking misinformation: Local and national media, common information diffusion spaces, such as markets and the like, and high-status individuals who enjoy high levels of trust locally. Third, social media literacy campaigns are unlikely to be effective unless they also address and seek to influence wider societal norms giving rise to informational hierarchies. Beyond encouraging fact-checking on an individual level, governments and civil society should strive to normalize it as social practice, which would empower indirect social media users to exercise more agency in responding to suspected misinformation.

Appendix

This Appendix provides supporting information for *Missinformation across Digital Di-vides: Theory and Evidence from Northern Ghana*. It describes the data used in the paper and presents detailed tables for the results reported in the main text.

1 Survey Data

The survey was carried out by IPSOS-Ghana between 10–31 July 2019 using a Door-to-door/household survey random walk methodology. 1500 respondents were interviewed individually and in their local languages in the Tamale South, Tamale Central, Tamale North, and Nanton Parliamentary constituencies. All main settlements within the four constituencies were surveyed (see map in the main text). The average interview time was 45 minutes and data was collected on GPS-enabled mobile devices and uploaded to iField. Quality control checks were performed by IPSOS-Ghana and the project research team between 1–7 August 2019.

95. For example, see Emily A. Vogels, 'Digital divide persists even as Americans with lower incomes make gains in tech adoption', *Pew Research Centre* (22 June 2021), < <https://www.pewresearch.org/fact-tank/2021/06/22/digital-divide-persists-even-as-americans-with-lower-incomes-make-gains-in-tech-adoption/> > (23 January 2022).

Table A1 Summary statistics.

<i>Variable</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>Min.</i>	<i>Max.</i>	<i>N</i>
Age	26.459	7.914	18	79	1533
Constituency	2.42	1.048	1	4	1556
Female	0.294	0.456	0	1	1556
Swing voters	0.396	0.489	0	1	1436
Partisans	0.468	0.499	0	1	1527
Other people are what they appear to be	0.787	1.037	0	4	1556
Interested in politics	0.77	0.737	0	2	1544
Scores for factor 1 (Pol. engagement)	0	0.788	-0.791	2.044	1556
Suspect fake news	0.922	0.583	0	2	1556
Don't use or no access to social media	0.215	0.411	0	1	1556
react = Ignore/do nothing	0.512	0.5	0	1	1542
Mobile data spend	1.274	0.936	0	3	1548

2 Detailed Results for the Figures Cited in the Main Text

Table A2 Results for [Figure 4](#) “Don't use or have no access to social media”.

	<i>Logit coefficients</i>	<i>Marginal effects (dy/dx)</i>
Nanton	0.577**	0.076**
Tamale Northv	-0.255	-0.028
Tamale Central	-0.832	-0.006
Female	1.064***	0.124***
Informal education	2.552***	0.297***
Primary education	1.653***	0.192***
Age > 45	1.552***	0.225***
Age 35-45	1.242***	0.170***
Age 25-34	0.549***	0.065***
Trust others	0.245***	0.029***
Partisans	-0.32	-0.037
Swing voters	-0.122	-0.014
Interested in politics	-0.329**	-0.038**
Politically engaged	0.048	0.006
N	1185	1185
LR chi2	309.95	309.95
Pseudo R2	0.256	0.256

***P < 0.01,

**P < 0.05.

Table A3 Results for [Figure 7](#) “Who suspects social media contains misinformation”.

	<i>Logit coefficients</i>	<i>Marginal effects (dyldx)</i>
Nanton	-0.318	-0.046
Tamale North	-0.283	-0.041
Tamale Central	-0.016	-0.002
Female	0.188	0.027
Informal education	-0.244	0.035
Primary education	-0.087	-0.012
Age > 25	0.379**	0.054**
Indirect user	-1.853***	0.265***
Partisans	-0.122	-0.018
Swing voters	-0.069	-0.009
Interested in politics	0.239**	0.034**
Politically engaged	0.082	0.012
N	1413	1413
LR chi2	184.4	184.4
Pseudo R2	0.126	0.126

***P < 0.01,

**P < 0.05.

Table A4 Results for [Figure 9](#) “Determinants of apathy towards suspected fake news”.

	<i>Logit coefficients</i>	<i>Marginal effects (dyldx)</i>
Nanton	0.849***	0.205***
Tamale North	0.526***	0.129***
Tamale Central	0.076	0.018
Age > 25	0.145	0.035
Female	0.073	0.018
Completed highschool	-0.165	-0.039
Spend > 40 GHC	0.461**	0.110**
20–40 GHC	0.325	0.078
Spend < 20 GHC	0.451***	0.108***
Partisans	0.137	0.033
Swing voters	0.138	0.033
Interested in politics	-0.192**	-0.046**
Suspicious of social media	-0.144	-0.035
Trust others	-0.105	-0.025*
N	1395	1395
LR chi2	53.63	53.63
Pseudo R2	0.028	0.028

***P < 0.01,

**P < 0.05,

*P < 0.1.

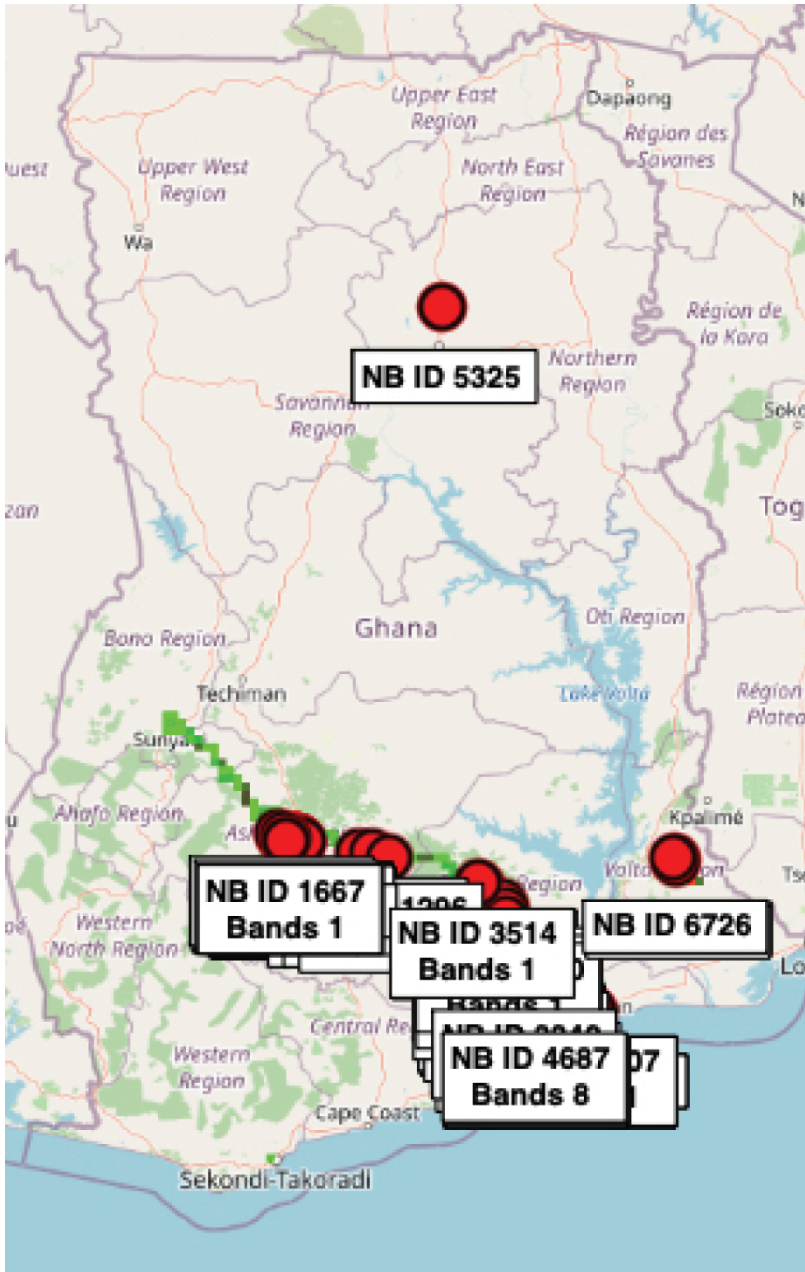


Figure A1 Cellphone coverage in Ghana, August 2019.
 Source: Cellmapper: <https://cellmapper.net>.