



## “RadioActive”: an exploration of the critical role of materiality in shaping participatory spaces

Maria Cristina Gallegos & Marleen Buizer

To cite this article: Maria Cristina Gallegos & Marleen Buizer (14 Aug 2024): “RadioActive”: an exploration of the critical role of materiality in shaping participatory spaces, Development in Practice, DOI: [10.1080/09614524.2024.2387285](https://doi.org/10.1080/09614524.2024.2387285)

To link to this article: <https://doi.org/10.1080/09614524.2024.2387285>



© 2024 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group



Published online: 14 Aug 2024.



Submit your article to this journal [↗](#)



Article views: 179



View related articles [↗](#)



View Crossmark data [↗](#)

# “RadioActive”: an exploration of the critical role of materiality in shaping participatory spaces

Maria Cristina Gallegos<sup>a,b</sup> and Marleen Buizer<sup>a</sup>

<sup>a</sup>Strategic Communication Group, Communication, Philosophy, Technology and Education cluster, Wageningen University, Wageningen, Netherlands; <sup>b</sup>Honorary Research Fellow, Center of Excellence in Biodiversity and Natural Resource Management (CoEB), University of Rwanda, Huye, Rwanda

## ABSTRACT

Materiality plays a critical role in determining participatory spaces within social and behaviour change communication (SBCC) interventions focused on the Sustainable Development Goals (SDGs). However, this role remains under-examined. This article draws inspiration from social practice theory to steer away from dominant individual-centred approaches. We focus on the material dimension of social practices to examine how materiality is involved in enabling or hindering participation, with the Rwandan “Itetero” Radio Listening Club (RLC) as case study. This research draws on one year of ethnographically inspired participant observations that involved attending 12 listening club sessions, 12 group discussions, and semi-structured interviews with 45 RLC participants (2019–2020). We provide insight into how the materiality of the RLC – understood here as infrastructure, architecture, and technology – shaped attendants’ ability to participate. We argue that acknowledging the material entanglements of people and (material) space might allow SBCC project implementers to develop more contextually appropriate and inclusive participatory spaces.

## ARTICLE HISTORY

Received 27 December 2023  
Accepted 26 July 2024

## KEYWORDS

Participatory space; social and behaviour change communication (SBCC); radio listening club (RLC); materiality; social practice theory (SPT)

## SUSTAINABLE DEVELOPMENT GOALS

SDG 5: Gender equality; SDG 10: Reduced inequalities; SDG 13: Climate action; SDG 15: Life on land

## Introduction: a radio listening club at the crossroads of infrastructure, architecture, and technology

Radio has become a versatile communication medium over time and continues to position itself as one of the main technological sources of information for people around the world (Oliveira, Grażyna, and Stachyra 2014). Bessire and Fisher (2012) attribute the radio’s ongoing popularity mainly to its capacity for broad audience outreach, immediateness, and adaptability to new technologies and ways of living. According to Perez-Teran and colleagues (2015), the radio’s appeal is also based on the notion that most people have the skills and knowledge to use the radio. Scholars such as Larkin (2008) and Weir (2020) further contend that the radio’s popularity is not just attributable to its versatility and reach but also to already established systems of infrastructure, and technology that easily allow the production and distribution of information. However, radio technology is also part of a problematic history.

In the initial stages of radio broadcasting, gathering around the radio was “the result of a scarcity of radios [the technology], but then it grew to discipline and instruct [as a form of education] the

**CONTACT** Maria Cristina Gallegos  cristina.gallegosjaramillo@wur.nl  Strategic Communication Group, Communication, Philosophy, Technology and Education cluster, Wageningen University, Hollandseweg 1, Gebouw 201, 6706 KN Wageningen, Netherlands

© 2024 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. The terms on which this article has been published allow the posting of the Accepted Manuscript in a repository by the author(s) or with their consent.

listening audience" (Goodman 2016, 437). Various authors, such as Ilboudo (1967) and Matewa (2003), have commented on the introduction of broadcasting infrastructure and technologies, and the radio, in particular, as part of a colonisation strategy. They highlight that radio listening clubs started to appear during colonial times (1956 onwards), as a way to bring development to rural areas (da Matha 2001) and create a particular type of "modern colonial subject" (Larkin 2008, 21). For example, the Anglican Church established radio listening clubs in Zimbabwe (Radio Home Craft Club Programme) to congregate women from rural areas around the limited number of radios to create a listening audience and educate them (Matewa 2003). In other words, gathering around the radio (AKA radio listening clubs) comes "with specific historic conjectures" (Larkin 2008, 21). Therefore, we need to look beyond the participatory aspect of radio listening clubs to see the way that a participatory space might continue to carry dominant colonising systems of participation and influence people to participate in a particular way.

This colonial history now raises important questions about the ongoing use of radio listening clubs in development, including in the context of social behaviour change communication (SBCC) interventions.<sup>1</sup> Since the early 1990s, participatory approaches in the form of radio listening clubs (Manda 2019) started to be taken up as part of SBCC programs. SBCC programs promise to be "inclusive" through the use of participatory spaces such as radio listening clubs, but they have also been critiqued for putatively "improving" knowledge, attitudes, and practices (Dearden et al. 2001; Gallegos et al. 2023).

SBCC programs have been critiqued by practice-based theorists who advise steering away from a focus on specific individual-centred approaches (such as the socio-ecological model) and individual behaviours, towards a focus on social practices to better understand how, why, and when individuals and communities engage with particular development initiatives. As Gallegos et al. (2023) highlighted, disregarding social practices including their material associations risks ignoring the cultural and historical underpinnings behind particular social practices, and might even do damage to them (e.g. Shove 2010). For practice-based theorists, meanings, skills, and materials are connected elements of social practices (e.g. Schatzki et al. 2001; Reckwitz 2004). Particular attention should be given to the way "social practices are partly constituted by, and always embedded in material arrangements" (Shove, Watson, and Spurling 2015, 274) and the "types of connections through which practices are held together in space and time" (286). Svabo (2009) argues that SPT can act as a platform to critically look at human-materiality interactions in spaces of engagement (such as workspace).

In this paper, we aim to contribute to a more in-depth understanding of the material arrangements involved with radio listening clubs as part of practices. We relate this attention to the idea of radio listening clubs as "participatory space", a concept also defined by Huber et al. (2019) as "third spaces, social spaces and third places [where] participants develop, maintain and share social relations and social norms that help strengthen the community" (43) and which "stimulate or hinder the development of citizenship" (51). Rydin and Natarajan (2016) similarly argue for the need to look into the material encounters associated with participatory space and how those encounters facilitate or constrain people's participation and engagement with each other. They highlight the way that participatory efforts are influenced by "the physical setting" (infrastructure) "the internal layout" (architecture) and "the role played by material artefacts" (technology) (2) within a participatory space. In slightly different words, Petersen (2014) shares the idea that focusing on the materiality entangled within "spaces of interaction" (such as radio listening clubs) allows us to see the way materiality influences or links everyday life practices. For example, the way that material arrangements within urban green spaces link various practices, such as running, picnicking, or walking.

Also, we pay attention to how materiality can duplicate stereotypical aspects of power and gender inequality in performative spaces (Tyler and Cohen 2010). For example, regarding inclusive participation, scholars such as Gyan, Malik, and Siddique (2022) argue that women tend to face different challenges than men, when participating in public spaces of decision-making on aspects

of development that matter to them. In the context of our research, for instance, women radio-listening-club participants expressed that they struggle to attend group sessions, meetings, or workshops because of the time they have to spend on household work. When it concerns the material component of participation, Quaye et al. (2013) highlight that it is important to acknowledge the differences in how men and women access information and adopt technologies. Moreover, Petersen (2014) highlights how the materiality within engagement spaces, such as classrooms, plays a significant but often overlooked role in reinforcing gendered power dynamics. Yohannes (2020, 40) writes that, “There are significant differences between the way women and men use radio, and there is evidence that women have less access to radio than men”.

These studies argue for more in-depth scrutiny of how materialities influence participation. In the following, we will use “participatory space” to refer to and problematise how materialities as part of physical space may shape participation. Our research question, therefore, is: How do material encounters (infrastructure, architecture, and technology) linked with the SBCC participatory space (radio listening club) influence radio listeners’ engagement with environmental conservation information?

### ***Research setting: the Itetero radio listening club***

In late 2019, Maria Cristina started attending a radio listening club that was part of the Rwandan Itetero radio program. Itetero means “children’s nurturing space” in the official local language Kinyarwanda. The Rwandan government conceived the Itetero radio program as an SBCC strategy (in 2014) with the support of international organisations and other local implementing partners (Bridgewater, Régnier, and García 2012). The program aimed to promote the Sustainable Development Goals (SDG) that the country aims to achieve by 2030 (Timko et al. 2018).

In June 2018, Itetero program organisers and partners implemented radio listening clubs (the participatory space approach) as part of the Itetero radio program. SBCC approaches became a central component of the radio listening clubs as a way to better to engage with community members. From using social media, TV, call-in feedback systems, and SMS toll-free numbers, the radio program added participatory spaces through radio listening clubs as a strategy to ensure behaviour and social change at the individual level (Manda 2019). Initially, there were four listening clubs, one in each province of Rwanda. However, the communities could not meet set institutional requirements to sustain the radio listening clubs (such as getting a moderator). So, only one listening club remained at Gashingiro’s community church and the early childhood development (ECD) education centre in the northern province. Here, a trained listening club moderator from Shyira Diocese (a local implementing partner organisation) integrated moderation and combined his work at the ECD Centre and the Itetero radio listening club in the same space.

Our goal is to examine materiality’s critical role in determining participation in the radio listening club within a SBCC program. In doing so, we distinguish three types of material encounters that make up the Itetero radio listening club participatory space: the first material encounter is with the radio-listening-club infrastructure (such as paved roads, electric grids, and radio broadcasting infrastructure). This infrastructure creates the essential connections that allow individuals to get to the radio listening club. The second material encounter is with the architecture (church, education centre, and arranged furniture). The architecture provides the surrounding space that facilitates the gathering and engagement of radio club listeners. The third material encounter is with technology (radio and cell phone). Radio and cell phones connect the participants with the radio listening club. Then, with infrastructure, architecture, and technology in mind, we examine the complex interplay between materiality and radio club participants, with the aim to shed light on how these material encounters in participatory spaces can either help or hinder participatory interventions. The following section will first expand on the use of social practice theory with a more nuanced understanding of materiality within participatory spaces for more contextually and culturally sensitive and inclusive spaces.

### ***Conceptual background: social practice theory (SPT), materiality, and participatory space***

In view of the presented question, we will first explain social practice theory (SPT) and the role of materiality therein. We then zoom in on the notion of “participatory spaces” and elaborate on the three encounters of materiality introduced above, as they are key to understanding how materiality and participatory spaces are linked as elements of social practices.

Shove and Walker (2010) distinguish three elements as part of social practices: materials, skills, and meanings. In this research project, we have given particular attention to the deeper connections and entanglements between materiality and social practices (e.g. Petersen 2014) because materiality carries its own agency and can influence the way people participate in spaces of engagement. Therefore, we join the “material turn” and show the need to go beyond objects’ material attributes as materiality can carry systems of knowledge, history, and cultural values (e.g. Katan 1967). Askins and Pain (2011) showcase the intricate relationship between material-led encounters and the way materiality can influence people’s way of doing things in spaces of engagement. For example, some African – and British-heritage participatory art project participants in Northeast England used paintbrushes to play sword games. Others used paintbrushes to paint football fields. In other words, through seemingly benign material actions, such as the use of paintbrushes, people could show their different historical and cultural backgrounds, which allowed the project to improve inclusion efforts.

In what follows, we dive deeper into the interconnectedness between material encounters of infrastructure, architecture, and technology of the radio listening club and radio listening club participants. This way, we are able to obtain a better understanding of how the materiality of radio listening clubs influenced radio listener’s participation. We conclude by highlighting the kind of participatory space that emerged from these material encounters.

### ***Participatory spaces and engagement***

Radio listening clubs were introduced within SBCC interventions (in this case Itetero) as a participatory space (Manda 2019) with the idea of reducing disparities and being more inclusive, for “ordinary people to participate in public life” (Mhagama 2015, 105). In other words, radio listening clubs appeared as spaces of transformative change (Cornwall and Coelho 2007). A focus on materiality, according to Rydin and Natarajan (2016) might help highlight otherwise unseen or sidelined challenges and limitations in the sustainability of engagement. For example, acknowledging the intricate material encounters associated with the radio listening club can highlight the way that women end up adopting significantly more practices than men who attend the radio listening clubs, such as walking in groups for safety, or having a charged cell phone with a torch. In other words, we want to highlight how these materialities that make up the radio listening club might shape or limit inclusiveness and accessibility and influence participants into adopting external environmental conservation and climate change-mitigation concepts.

### ***Material encounters through infrastructure, architecture, and technology***

Radio club participants’ first encounter with materiality was the roads and transportation systems (also known as infrastructures). Infrastructures, such as roads, are more than their immediate, “obvious” function, which takes people from one place to another. Infrastructures are also networks that carry aspects of politics, history, and culture (Larkin 2008). For example, a paved road can link people to blooming shops and tourist attractions. Roads can also carry understandings of modernity, desired “political and future possibilities” (Arora and Ziipao 2020, 2), or, when incomplete or insufficiently maintained, they can signify the failure of these promised futures (Hobbis 2019). Therefore, infrastructures can also be considered facilitators that can influence, create, enhance, or limit everyday practices in a particular way. Chambers (2001, 5) points out that infrastructure also brings biases

“as services are provided along the roadside – improved tarmac surface for the road, buses, electricity, telephone, piped water supply – so those who are better-off buy up roadside plots and build on them. The poorer people shift away out of sight”. In other words, infrastructure shapes people’s perceptions and widens the gap between people who have access to paved roads and electricity and people who live next to dirt roads.

Radio listening club participants’ second encounter with materiality is the buildings representing the architecture of the radio listening club and the furniture within the space (church and education centre). Participatory space’s architecture can also bring underpinnings and associations experienced and appreciated in various ways by people’s interpretation of the space’s atmosphere (Pickering 2013). In other words, the architecture can influence participants’ behaviour and adoption of practices. Architecture and the particular furniture arrangement can bring existing knowledge and know-how to certain aspects of culture and history, such as when Mongolian nomads’ homes (architecture) situated bookshelves (furniture) with sacred books on the left side of their home space, which was only accessible by men. In other words, having the bookshelf on the left side of the home limited the way that women would access knowledge and information and maintained systems of gender inequality (Spain 2016).

Radio club participants’ third encounter with materiality focuses on how tools (in this case, technology) can embed certain understandings and aspects of culture that can either support or challenge “people’s engagement within an activity/event spaces” (Askins and Pain 2011, 818). Leonardi and Barley (2008) refer to technological artefacts as a “bundle of material and symbol properties packaged in some socially recognisable form [...]” that seem to “provide opportunities for or constraints on action” (162). In this case, the technology radio and cell phone. For instance, not everybody can access the technological tools used in the radio-listening-club participatory space. This may limit the way that radio-listening-club participants learn and are able to embed environmental conservation and climate change-mitigation practices. This shows that the materiality within a participatory space (radio listening club) needs to be explored deeper.

## Methodology

This research draws from one year of ethnographically inspired fieldwork (from the end of 2019–2020) with participant observation and group discussions that involved attending 12 listening clubs and moderated discussions. The listening club sessions were one hour long (30 min radio program and 30 min discussion). Fieldwork involved real-time engagement by “being there” and having “access to the field”, to observe radio-listening-club participants and their use of a participatory space to create their own radio listening experiences. Further, from the 45 radio listening club participants, 30 semi-structured interviews were conducted with 26 women (whose profession was farmer) and four men (from different professional backgrounds: preacher, carpenter/electrician, businessman, and baker), the most regular listening club participants.<sup>2</sup> Interviews lasted between 60 and 140 minutes; these were digitally recorded, transcribed verbatim, and translated. Twelve group discussions were conducted to look deeper into people’s daily practices associated with the radio listening club, environmental conservation, and climate change. Maria Cristina, of this paper, explained the research project to radio-listening-club participants. Then she described her positionality as a researcher within the Itetero project and obtained informed consent from radio-listening-club participants with the support of a translator and moderator. Both the interview and group discussion transcripts were then translated and analysed using the qualitative analysis program Nvivo to identify and code core themes. The transcripts were coded with thematic areas related to the practices linked with the radio listening club and the elements of these practices: materials, skills, and meanings. Then, there was a focus on the material element of the practices and the way they connect to other practices.



After identifying the practices associated with attending the listening club, it became clear that roads (infrastructure), radio, cell phones (technology), and the church and education centre (architecture) affected how radio club participants incorporated the radio listening club practice.

It is crucial to acknowledge Maria Cristina's potential limitations associated with her positionality in this research, as it shaped the approach to the study. Maria Cristina has experience implementing participatory spaces within SBCC interventions (Gallegos et al., 2023) and has been trained to observe engagement through an ABC lens. Therefore, there were regular reflections throughout the study to critically examine her positionality during the data collection, analysis, and interpretation of findings.

In the next section, we will present our findings on the participatory aspect of the radio listening club, notably, how it was influenced by materiality linked to the radio listening club: 1) infrastructure: electricity, roads, light; 2) architecture: listening club space, furniture, set-up; and 3) technology: radio and cell phones (Figure 1).



**Figure 1.** Top left (church), top right (education centre), middle left (cell phones), middle right (radio with electric cable set-up), and bottom (main road).

## **Results: the matters of the radio listening club space**

### ***Infrastructure: the influence of a paved road and a lightbulb***

Maria Cristina first met with the Itetero radio club moderator at the main crowded junction on the most trafficked paved road at the end of 2019. Since the paved road was packed with commuters, animals, shops, restaurants, public transportation, cars, motorcycles, businesses, women carrying produce baskets, and men on bicycles, walking on the paved sidewalk was not easy. She noticed the paved road also got tourists to specific destinations (high-end hotels, tourist centres, community cooperatives, and tourist shops). It took 40 minutes to walk to the radio listening club space. This was the Gashingiro Protestant community church: a space surrounded by commuters, business owners, and community leaders. She also noticed that radio-listening-club participants made a conscious display to others across the street that they were heading to the radio listening club in the church. This shows the way that the main road provides access to buildings of cultural importance to the community. All participants considered the radio listening club a respected and safe space.

The church space was not only used for community church sessions. In the same space, there was the church leader's home, a carpentry shop, and an education centre (school for kids and childhood development workshops). Across the street from the church were the government offices where community leaders organised community meetings before the radio-listening-club sessions. This meant that community members used the same radio listening club infrastructure system in their daily life to attend church or community meetings, do business, or take children to school. Therefore, those who attended all those activities were invited by the church and community leaders, and the moderator, to the radio listening club. This showed that organising the radio listening club at the church space provided a known, easy-to-access space that radio club participants felt comfortable with. Participants stated that the radio listening club was conveniently accessible on foot (besides the main paved road). They added that as soon as the radio club meeting ended, the paved road also provided lights at night. This made them feel safe when walking back home. Participants also added that to attend every Tuesday, they had to walk long distances to get to the listening club. Most participants said they had to walk for one hour to two hours (one way), which is what they do to attend church on Sundays.

However, about half of the women participants expressed that walking back home at night was scary if there was no light. They shared that most of the dirt roads near their community did not have adequate road lights, so they had to use the flashlight capability on their phones. In addition, during a group discussion, all women participants agreed that after the radio listening club, they returned home to their community in groups. Claudia added that her commute to the radio listening club was never sure because she had to cross bridges and walk over dirt roads that flooded during the rainy season. This meant the current dirt road infrastructure challenged her participation in the radio listening club during the rainy season. Focusing on infrastructure, in this case, the paved road, allowed seeing how roads and streetlights influenced people's participation in the radio club. This also meant that people were pushed into using socio-economic systems tied to paved roads, streetlights, and light bulbs and being able to use electricity to connect the radio. Thus, participation depends on these "modern" infrastructure systems to access the radio listening club.

After several sessions in the church, the radio club moved to the education centre space next to the church because of competing space requirements. This move showed how infrastructure subsystems (electricity) could either support or challenge people's participation in the radio listening club. The education centre, as opposed to the church, did not provide an electrical infrastructure. Nor did it have furniture. This lack of electricity infrastructure influenced participants to adopt a new set of practices. About half of the women radio-listening-club participants said they first had to walk from their farm-fieldwork to their homes through dirt roads to get to the main paved road. Then they had to reach their homes, only accessible through dirt roads, to quickly clean themselves up, change their clothes to something more formal (clothes used to attend church), and make sure dinner was ready for the husband and kids (women had to ask permission from their husbands), and lastly, make sure



their cell phone was charged or borrow their husband's phone so they could use the flashlight option in the dark streets around their community. Then, they had to walk along dirt roads to reach the main paved road (again) to reach the radio listening club. Juan was responsible for setting up one long electric cable for every session. These practices show how participants (in particular, women) had to adopt new practices to attend the radio listening club. An ABC approach normally sidelines these practices because it tends to focus on particular behaviours for what is considered "effective" social and behaviour change.

The radio listening club participants only entered the education centre after the lightbulb was set because the dark space made them feel uncomfortable and unsafe. In their view, a lightbulb made the place more respectable and gave the listening club more formality (as a classroom). Through the constant set-up of the radio listening club, every Tuesday in the education centre, it was clear that the radio listening club space depended on a particular set of material arrangements: infrastructure, architecture, and technology (radio and cell phones). Regarding infrastructure, it needed electricity and paved road access, to have a safe engaging participatory experience. For instance, electricity determined the potentiality of participation, particularly for women. In the middle of one of the sessions, the electricity cut off, so we had to end the listening club early so that the women could return to their communities and houses as quickly as possible, and in groups. Moreover, by always having to set up the electric infrastructure for the listening club space, participants were unknowingly influenced by dominant political, economic, and social systems of progress and power (Larkin 2008).

The listening club set-up depended on Juan's skillset. He always had to bring a long cable from the neighbouring house from the priest/preacher situated between the church and the education centre (classroom). The carpenter/electrician would get this long cable to connect one lightbulb for the listening club and provide electricity to connect the radio. The listening club's existence depended on being able to set up an electrical infrastructure and connect the radio.

### ***Architecture: listening club space, furniture setup***

When the radio listening club moved from the church to the education centre, because of community members' demand to use the space for other church-related activities, Maria Cristina thought the education centre was a goat shed because there were always some goats inside. During group discussions, half of the radio club participants explained that the education centre space was used for different purposes (carpentry, work, goats, etc.). It was mainly used as an early childhood development centre (school) for young children. This meant the space hosted various functions with different understandings and meanings. Rodrigo said:

This space started as a carpentry shop [next to the community church], then it became a sewing place where people worked during the day. Then, the sewing place was moved to another town as part of WDA [workforce development activities]. Community members also used the space as a school for young children so that they would stop hanging outside or get beaten or rained down. (Fieldwork, 2019)

The education centre was divided into three rooms and a large central area that could easily fit 45 people. The space was covered with a tin roof and held together by tin and wooden walls on top of a dirt floor. It did not have any furniture. The furniture had to be brought from the church for every radio club session. Participants would always set up the furniture (long wooden benches) in a semi-circle. Before setting up the furniture, the women swept the dirt floor with water. Then, the men would place the carpet in the main room. Then, the participants would set up the benches around the space in a semi-circle. They would place one entire bench and a table for the moderator in front of them, similar to the preacher's position. The rest of the participants sat close to each other around the moderator. The semi-circle seating arrangement allowed everybody to see each other. Nobody was sitting in front of anybody. Through the repeated set-up of the radio listening club, every Tuesday in the education centre, the arrangement of the furniture became a new practice.

According to RLC participants, the seating arrangement created an inclusive, participatory environment. Radio club participants could set up the furniture in the radio listening club space however they wanted. By replicating the furniture set-up of church and classrooms, they created a space that they were familiar with in their everyday lives. At the same time, all participants also integrated aspects of listening to the radio that they were already familiar with in their community, by standing up all together (parents and children) and dancing during and at the end of the radio broadcast. This means that all participants added know-how associated with how it would be to listen to the radio in their community, with friends and family. Diving into the materiality of architecture allows paying close attention to the furniture set-up and how it became its own practice.

A look at the architecture allows us to see the practices attached to setting up the radio listening club in the education centre. Community members could only participate if the set-up were ready, so there was significant effort to make sure the set-up happened before the radio program was broadcasted. A look at the meanings associated with architecture reveals that people carried to the radio-listening-club space meanings associated with school and church. For example, each person raised their hand and took turns at participating. Further, placing the moderator at the front centre showed how people thought of the moderator as a preacher or teacher. For example, participants expressed that there could not be a listening club without a moderator. The moderator is seen as the person who knows about the different radio-broadcasted subjects and has the skills to be inclusive and engage with participants on how to think about the content of the radio program. Linda stated:

During the discussions, we try to adopt new skills or knowledge from Itetero. When we are together in the listening club or when we are on our way home, we walk and talk about what we learned and how we can convert that knowledge into action at home. For example, in that episode about the kitchen garden; everybody returned home wondering what they will do to have their kitchen garden [and protect the environment]. (Fieldwork, 2019)

### ***Technology: radio and cell phones***

Radio in the African region, particularly Rwanda, is the primary outlet for receiving information (Manyozo 2021). Access to TV or social media is minimal and, therefore, not a suitable technological source of information. Most participants expressed that in rural areas, people mainly tune in to radio programs to get information about current affairs or entertainment. Noemi related the importance of radio to access multiple sources of information, “The reason why people prefer to radio is that there is different programs and news broadcasted on radio than television shows; accessibility of using television or other social media is more expensive compared to radio” (Fieldwork, 2019). In addition, people have to learn how to use the cell phone as a technology to get information from radio programs. They have also adopted cell phone to call family members, set up businesses, entertain themselves during long commutes, and use the flashlight feature when it gets dark. When participating in the radio listening club, and when the radio was unavailable, all participants brought their cell phones or borrowed their husbands’ cell phones. It took some time to figure out how to use the cell phones to tune in to the radio program. At some point, we tried to put all the cell phones together on the table to “better” listen to the program. The issue of putting all the cell phones together was that following the program’s content was challenging because of the lousy radio network (infrastructure). The network kept dropping so each person had to interpret the messages. Because it was hard to understand all the content, people decided to hold their cell phones by their ears and listen to the radio independently while attending the radio listening club in a group. This means that people are expected to have the skills to use the cell phone technology and access a network that allows institutions to broadcast information related to environmental conservation and climate change.

In addition, it is important to consider the way people have or do not have access to these materialities. For example, radio club participants had a type of phone that had an integrated radio application that allowed them to access the radio network for free. In other words, participants’

technology “made it easy” to access the radio program. Few participants currently own a radio at home because they use their cell phones to access the program. A wide range of factors drives this preference. Fewer than half of the radio-listening-club participants have easy, continuous access to an electricity supply, and batteries for radios that do not need an electrical supply are expensive. In addition, cell phone technology is extensively used in rural communities; cell phones do not need a continuous electricity supply, and their batteries are rechargeable (Anand et al. 2012). Linda explained:

The advantage of listening to the radio on my cell phone is that it is more portable, meaning I can listen to the Itetero program wherever I am. When I’m walking on the street or in the field, it is very easy to follow the Itetero program. (Fieldwork, 2019)

A focus on materiality allows us to see the prevalence of cell phone technology and the way that cell phones are aiming to replace the radio by providing free access at all times to the radio network. Everybody had cell phones when attending the radio listening club. They preferred to use a cell phone even if the radio technology was there, while listening to the radio program. However, women radio-listening-club participants experience different sets of challenges when accessing information than men. Women do not always have time to listen to the radio at broadcasting times, or they do not have the money to pay for a service, or they just borrow the cell phone from their husbands.

### **Discussion: living in a material world**

In this section, we highlight how materialities – infrastructure, architecture, and technology – connected with the Itetero radio listening club influenced people into creating, moving, and connecting existing and new social practices. We assemble accounts from Petersen (2014), Svabo (2009), and their contemporaries, Huber et al. (2019), about the need to dive deeper into materialities linked to participatory spaces and highlight how people adapt and adhere to the underlying cultural conditions, requirements, capacity, and access that materiality allows. By using SPT, we can foreground these networks and systems of materiality, which are usually hidden in the background. In other words, we show how radio listening clubs’ infrastructure, architecture, and technology influence participants into adopting “particular” engagement practices – namely, those external to community members and commonly implemented by institutions. For example, when radio-listening-club participants opt to raise their hands and take turns talking, it shows that the radio-listening-club space carries aspects of previously learned classroom participation from Rwandan public schools. Setting up a radio listening club in a church or education centre, rather than participants listening to the radio in their own neighbourhood (Larkin 2008), and encouraging women to walk at night, which goes against cultural norms, aligns with observations made by Ilboudo (1967), Matewa (2003), and da Matha (2007). These scholars emphasise that bringing people to listen to the radio is an imposed practice that replicates colonial systems that continue to influence people in a certain way. Turning to materialities allows seeing how material arrangements can influence the way that people (dis)engage with practices. For example, women are invited to attend radio listening clubs at a time when they are supposed to focus on family and household activities. In addition, we can see how people can modify these material arrangements to fit into their daily lives by the way radio-listening-club participants organised the furniture in a semi-circle and then danced to the songs during the radio program.

The materialities associated with the radio-listening-club influenced participants to adopt new practices and do things in a way they were not used to. For example, there were some efforts after the tenth session to ensure participation and attendance by turning the radio listening club into an informal association, which provided an economic incentive to radio club participants. However, women participants still faced challenges with participation and attendance. This shows that looking at materials can help identify otherwise sidelined aspects of gender power dynamics,

inclusion, history, and culture that challenge people to sustain participation, regardless of their strong interest in the radio listening club (Gyan, Malik, and Siddique 2022).

A focus on materialities showed that when participants arranged the furniture, they linked the benches, carpets, and table arrangements with church and classroom education understandings. However, accommodating the moderator in the front with his chair and table made the setting less democratic, inclusive, and egalitarian. It gave the moderator a position of respect and power. These layers of understanding are linked to pre-existing notions of how the space should be used for participation. Thus, materialities can mediate the way people participate and the flow of systems of power, existing know-how, and cultural ideas, and add and replicate dominant understandings and ways of doing things (Askins and Pain 2011).

Materialities “command a powerful presence” Larkin (2008, 245), meaning that materialities have their own agency and carry aspects of culture and history. Focusing on materialities allowed us to identify participants’ practices associated with the radio listening club (participatory space). Moreover, material encounters (infrastructure, architecture, and technology) linked to the radio listening club’s participatory space helped develop an understanding of the way that materiality allowed or challenged networks of social practices (Askins and Pain 2011). Zeroing in on materialities allows us to highlight radio listening club participants’ practices that might cause participatory challenges even before reaching the participatory space. For example, if there is no lightbulb in the education centre, women are put at risk because husbands will not allow their wives to attend the radio listening club. In addition, the way of gathering around the radio in and of itself continues to replicate colonialist understandings of power (Larkin 2008, 245).

The radio listening club seemed to adopt contextual cultural understandings by using an existing infrastructure (the road and electricity), to invite people to gather in a particular architecture (church/education centre) to sit around a technology (radio/cell phones) that people use differently in their everyday routines. However, a focus on materiality highlighted the way the space duplicated systems of power and inequality in participation and engagement.

## **Conclusion: material participation**

Our perception of space matters. Hence, careful attention should be paid to the way that materials are entangled with participatory spaces, such as radio listening clubs, within an SBCC intervention. A focus on materiality within participatory spaces (AKA radio listening clubs) can allow researchers, development practitioners and policymakers to gain insights into how the material encounters linked with participatory spaces can influence participation and engagement in these radio clubs and the way material encounters can drive social and behavioural change. This perspective emphasises the importance of understanding the interplay between the tangible elements and the socio-cultural context in which radio listening clubs operate, ultimately informing more effective design and implementation of SBCC interventions. We recommend that future research should be done to assess a set of criteria to foreground the efficacy of participatory spaces.

This link between materiality and participatory space needs to be better examined and, therefore, deserves more exploration. Through the results and discussion, we highlight how radio listening club participants’ material encounters with infrastructure, architecture, and technology might allow project implementers to better acknowledge participants’ challenges in sustaining engagement in a participatory space and to select a space that allows for more contextually appropriate, culturally sensitive, and inclusive participatory spaces within SBCC interventions. We provide further insight into the way materiality is able to carry aspects of history, knowledge, and understandings that can influence people’s ability to engage, participate in, and adopt transformative changes within a participatory space.

Material encounters within a participatory space may create links with otherwise unknowingly dismissed cultural aspects – such as the way that women participants would only attend the

radio listening club because the materiality of the space (church and classroom) carried meanings of safety and respect – and political underpinnings (such as the way that environmental conservation information was made available by ensuring there was a solid radio set-up). If we genuinely want to create participatory spaces within SBCC interventions, we need to reflect on aspects of materiality, its agency, and its influence on the potentiality of participation. The materiality of the radio listening club's participatory space manifests aspects of "identity, social interaction, and power dynamics" (Tyler and Cohen 2010, 195), and only by paying close attention to these aspects may it be possible to create more meaningful, inclusive participatory spaces in development encounters.

## Notes

1. SBCC is only one framework among several that integrate participatory approaches that draw on radio listening clubs, including also, for example, communication for development (C4D). Since this article empirically focuses on an SBCC intervention, we do not conceptually engage with other participatory approaches such as C4D (e.g. see Tufte and Mefalopulos 2009). Instead, we present an in-depth analysis of an SBCC case study, encouraging others to further explore the materiality of e.g. C4D-driven radio listening clubs.
2. Participant's names have been replaced with pseudonyms to ensure they are not put at risk.

## Disclosure statement

No potential conflict of interest was reported by the authors

## Funding

This work was supported by UNICEF/IAMCR COMMUNICATION FOR DEVELOPMENT RESEARCH FUND.

## References

- Anand, A., V. Pejovic, D. L. Johnson, and E. M. Belding. 2012. "VillageCell: Cost Effective Cellular Connectivity in Rural Areas." *ACM International Conference Proceeding Series*, 180–189. <https://doi.org/10.1145/2160673.2160698>.
- Arora, V., and R. R. Zippao. 2020. "The Roads (Not) Taken: The Materiality, Poetics and Politics of Infrastructure in Manipur, India." *Journal of South Asian Development* 15 (1): 34–61. <https://doi.org/10.1177/0973174119896470>.
- Askins, K., and R. Pain. 2011. "Contact Zones: Participation, Materiality, and the Messiness of Interaction." *Environment and Planning D: Society and Space* 29 (5): 803–821. <https://doi.org/10.1068/d111109>.
- Bessire, L., and D. Fisher. 2012. "Introduction: Radio Fields." In *Radio Fields: Anthropology and Wireless Sound in the 21st Century*, 1–47. New York: NYU Press.
- Bridgewater, P., M. Régnier, and R. C. García. 2015. "Implementing SDG 15: Can Large-Scale Public Programs Help Deliver Biodiversity Conservation, Restoration and Management, While Assisting Human Development?" *Natural Resources Forum* 39 (3-4): 214–223. <https://doi.org/10.1111/1477-8947.12084>.
- Chambers, R. 1981. "Rural Poverty Unperceived: Problems and Remedies (Third World Development)." *World Development* 9 (1): 1–19. [https://doi.org/10.1016/0305-750X\(81\)90073-5](https://doi.org/10.1016/0305-750X(81)90073-5).
- Cornwall, A., and Coelho V.S (Eds.). 2007. *Spaces for Change?: the politics of citizen participation in new democratic arenas (Vol. 4)*, 1–29. London: Zed Books.
- da Matha, J. 2001. *CIERRO: A 23-Year Contribution to the Development of Rural Radio and Local Rural Radio in Africa*. Issue 7th edition. Ouagadougou: Inter-African Center for Rural Broadcasting Studies of Ouagadougou (CIERRO)/FAO.
- Dearden, K., G. Mulokozi, M. Linehan, D. Cherian, S. Torres, J. West, B. Crookston, and C. Hall. 2023. "The Impact of a Large-Scale Social and Behavior Change Communication Intervention in the Lake Zone Region of Tanzania on Knowledge, Attitudes, and Practices Related to Stunting Prevention." *International Journal of Environmental Research and Public Health* 20 (2), <https://doi.org/10.3390/ijerph20021214>.
- Gallegos, M. C., M. Buizer, S. Ketterer, and G. Wise. 2023. "Knitting for Conservation: A Social Practice Perspective on a Social and Behaviour Change Communication Intervention." *Environment, Development and Sustainability* 26, <https://doi.org/10.1007/s10668-023-03066-7>.
- Goodman, D. 2016. "A transnational history of radio listening groups I: the United Kingdom and United States." *Historical Journal of Film, Radio and Television* 36 (3): 436–465. <http://dx.doi.org/10.1080/01439685.2015.1134119>.
- Gyan, C., M. Malik, and A. Siddique. 2022. "Barriers to the Participation of Women in Community Development Process in Rural Ghana: A Regression Analysis." *Development in Practice* 32 (4): 448–459. <https://doi.org/10.1080/09614524.2021.1937541>.

- Hobbs, S. K. 2019. "A Road to Development? Rural Perspectives on Infrastructure Maintenance in Solomon Islands." *Development in Practice* 29 (6): 748–759. <https://doi.org/10.1080/09614524.2019.1586832>.
- Huber, M. A., R. Metze, L. Veldboer, M. Stam, T. Van Regenmortel, and T. Abma. 2019. "The Role of a Participatory Space in the Development of Citizenship." *Journal of Social Intervention: Theory and Practice* 28 (1): 39. <https://doi.org/10.18352/jsi.583>.
- Ilboudo, J. 1967. *Chapter 16 After 50 Years: The Role and use of Rural Radio in Africa*, 1–8. Rome: FAO.
- Katan, L. 2023. "How the Waste Management System's Materialised Normativity Influences Engagement in Sustainable Waste Practices." *Journal of Environmental Policy & Planning*, 443–458. <https://doi.org/10.1080/1523908X.2023.2171976>.
- Larkin, B. 2008. *Signal and Noise: Media, Infrastructure, and Urban Culture in Nigeria*, 16–47. Durham and London: Duke University Press.
- Larkin, B. 2013. "The Politics and Poetics of Infrastructure." *Annual Review of Anthropology* 42 (1): 327–343. <https://doi.org/10.1146/annurev-anthro-092412-155522>.
- Leonardi, P. M., and S. R. Barley. 2008. "Materiality and Change: Challenges to Building Better Theory About Technology and Organizing." *Information and Organization* 18 (3): 159–176. <https://doi.org/10.1016/j.infoandorg.2008.03.001>.
- Manda, L. Z. 2019. "What Makes Radio Listening Clubs as a Participatory Communication for Development Platform Work? A Case Study of Monkey Bay, Malawi." *Online Journal of Communication and Media Technologies* 5 (4), <https://doi.org/10.29333/ojcm/2533>.
- Manyozo, L. 2021. *People's Radio Communicating Change Across Africa*. <https://emea.mitsubishielectric.com/ar/products-solutions/factory-automation/index.html>.
- Matewa, C. E. F. 2003. *Media and the Empowerment of Communities for Social Change. Chapter Five: Participatory and development communication in Zimbabwe*. <https://www.comminit.com/la/node/206610>.
- Mhagama, P. 2015. "Radio Listening Clubs in Malawi as Alternative Public Spheres." *Radio Journal:International Studies in Broadcast & Audio Media* 13 (1–2): 105–120. [https://doi.org/10.1386/rjao.13.1-2.105\\_1](https://doi.org/10.1386/rjao.13.1-2.105_1).
- Oliveira, M., S. Grażyna, and G. Stachyra. 2014. *Radio : The Resilient Medium- Papers from the third conference of the ECREA R*, iii–iii3. Sunderland: University of Sunderland.
- Perez-Teran, A. S., A. M. Tiani, M. Touko-Tchoko, and B. Tchatchou. 2015. *Testing the influence of radio programs on climate change knowledge: a pilot experience from the Congo Basin* 173.
- Petersen, L. K. 2013. "The Materiality of Everyday Practices in Urban Greenspace." *Journal of Environmental Policy & Planning* 15 (3): 353–370. <https://doi.org/10.1080/1523908X.2013.766576>.
- Pickering, A. 2013. "Living in the Material World." In *Materiality and Space*, edited by De Vaujany F-X. and Mitev N. N., 25–41. Hampshire: Palgrave Macmillan.
- Quaye, W., J. A. Onumah, M. Boimah, and A. Mohammed. 2022. "Gender Dimension of Technology Adoption: The Case of Technologies Transferred in Ghana." *Development in Practice* 32 (4): 434–447. <https://doi.org/10.1080/09614524.2021.2000588>.
- Reckwitz, A. 2004. "Toward a Theory of Social Practices: A Development in Culturalist Theorizing." *Practicing History: New Directions in Historical Writing After the Linguistic Turn* 5 (2): 245–263.
- Rydin, Y., and L. Natarajan. 2016. "The Materiality of Public Participation: The Case of Community Consultation on Spatial Planning for North Northamptonshire, England." *Local Environment* 21 (10): 1243–1251. <https://doi.org/10.1080/13549839.2015.1095718>.
- Schatzki, T. R., Cetina K. K., and Von Savigny E., eds. 2001. *The Practice Turn in Contemporary Theory*. 1st, 1–252. London and New York: Routledge.
- Shove, E. 2010. "Beyond the ABC: Climate Change Policy and Theories of Social Change." *Environment and Planning A: Economy and Space* 42 (6): 1273–1285. <https://doi.org/10.1068/a42282>.
- Shove, E., and G. Walker. 2010. "Governing Transitions in the Sustainability of Everyday Life." *Research Policy* 39 (4): 471–476. <https://doi.org/10.1016/j.respol.2010.01.019>.
- Shove, E., M. Watson, and N. Spurling. 2015. "Conceptualizing Connections: Energy Demand, Infrastructures and Social Practices." *European Journal of Social Theory* 18 (3): 274–287. <https://doi.org/10.1177/1368431015579964>.
- Spain, D. 2016. "Gendered Spaces and Women's Status." *Sociological Theory* 11 (2): 137–151.
- Svabo, C. 2009. "Materiality in a Practice-Based Approach." *The Learning Organization* 16 (5): 360–370. <https://doi.org/10.1108/09696470910974153>.
- Timko, J., P. Le Billon, H. Zerriffi, J. Honey-Rosés, I. de la Roche, C. Gaston, T. C. Sunderland, and R. A. Kozak. 2018. "A Policy Nexus Approach to Forests and the SDGs: Tradeoffs and Synergies." *Current Opinion in Environmental Sustainability* 34:7–12. <https://doi.org/10.1016/j.cosust.2018.06.004>.
- Tufte, T., and P. Mefalopoulos. 2009. *Participatory Communication A practical Guide*. *World Bank Working Paper* 4: 1–162. <https://doi.org/10.1596/978-0-8213-8008-6>
- Tyler, M., and L. Cohen. 2010. "Spaces That Matter: Gender Performativity and Organizational Space." *Organization Studies* 31 (2): 175–198. <https://doi.org/10.1177/0170840609357381>.
- Weir, Patrick. 2020. "Networked Assemblages and Geopolitical Media: Governance, Infrastructure and Sites in BBC Radio." *Geopolitics* 25 (4): 937–967. <http://dx.doi.org/10.1080/14650045.2018.1465043>.
- Yohannes, S. J. 2020. "Rural Women's Radio Listening Behavior and Program Preferences in SNNPRS, the Case of Sidama and Geddo Zones." *Journal of Media and Communication Studies* 12 (4): 39–45. <https://doi.org/10.5897/JMCS2020.0694>.