

Bridging Digital Geographies and Socially Smart Villages: Participatory Action Research in Rural Place Design

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Abstract

This article critically explores the intersection of digital geographies, community building, tourism development, and bottom-up processes that shape resilient rural futures. While rural development initiatives often adopt urban-centric norms and technology-driven solutions, such approaches risk overlooking the lived realities and social fabric of rural communities. Digital representations of rural places frequently reinforce stereotypes, leaving these regions underrepresented and mischaracterised in media narratives. In the Smart Villages in Sweden project, we sought to counter this trend by integrating tourism and place design through participatory, place-based methods. Rather than assuming technology as a panacea, our approach foregrounded local knowledge, everyday practices, and grassroots engagement to co-create digital solutions that resonate with rural life. This participatory action research process enabled the identification of concepts that address local challenges and aspirations, fostering hope and vitality within communities. Our findings demonstrate that sensible digital development—anchored in sociality and local agency—can bridge spatial, social, and digital divides. By combining geomedial studies with tailored, community-driven design, digital tools become more than technical artefacts: They serve as catalysts for storytelling, value creation, and connection. Ultimately, technology must be embedded in the rhythms of rural life to strengthen social bonds, cohesion, and solidarity. We argue that sustainable rural futures depend not only on innovation but on approaches that respect and amplify the voices and practices of those who inhabit these places.

Keywords

digital geographies; participatory action research; rural place design; rural tourism; socially smart villages

1. Introduction

This article explores how place-based digital solutions can be customised for rural communities to strengthen social bonds and nurture future hope, connecting both people and places. By using place design as both an approach and a method, we examine the intersection of “digital geographies,” community, tourism development, and bottom-up innovation. The aim is to develop new pathways of hope by bridging spatial, social, and digital divides through thoughtful place design.

Drawing on extensive research into spatially sensible digital innovation in tourism and place development, we employ critical geomedia studies (McQuire, 2016; Ryan Bengtsson et al., 2022) to examine nuanced processes of geomedia technologies. Using this perspective, we explore the concept of a “smart village.” Our project, Smart Villages in Sweden, aims to deepen the understanding of what it means to be “smart” in modern rural communities. It identifies residents’ and visitors’ needs for services, commerce, and information, and investigates how digital solutions could enhance local attractiveness and economic opportunities. The term “smart” is often linked to ICT use for sustainable social development, resulting in urban-centric initiatives in which authorities collaborate with technology firms to address environmental issues and improve resource efficiency (Harrison et al., 2010; Kitchin, 2015). Although “smart villages” promote bottom-up cooperation in rural areas (Aziiza & Susanto, 2020; Zavrtnik et al., 2018), their realisation often reflects urban-focused, technology-led logic. A review of the literature (Anastasiou et al., 2021; Căne, 2021; Cowie et al., 2020; Cvar et al., 2020; Devadiga, 2020; Hlaváček et al., 2023; Martinez-Gil et al., 2020; Paniagua, 2020; Patnaik et al., 2020; Slee, 2019) reveals a critical viewpoint: The concept risks prioritising technological innovation over genuine community engagement, leading to solutions that may be misaligned with local realities.

Contemporary society is increasingly shaped by digital technologies, surveillance, and “smart” systems, which are often depicted as solutions to societal challenges. This technology-centric narrative is evident in tourism and place development, where digitalisation is pursued without sufficient attention to local needs or sustainability. Rural development is frequently viewed through an urban perspective, assuming urban solutions can be easily adapted to rural areas (Cowie et al., 2020; Sigala, 2018). Meanwhile, digital representations of rural areas—especially in social media and other marketing channels—rely on stereotypical images of landscapes and cottages, overlooking the complexities and available resources of rural areas. Our research focused on place-based mediated digital solutions that enhance visitor experiences or promote social interaction, linking spatial and sociocultural conditions. This led us to ask: How can “smart” be redefined through place-based digital design practices to better reflect rural realities and aspirations? And how can place design support socially sustainable, place-sensible development by aligning digital solutions with local needs and hopes?

We argue that digital solutions should be grounded in the unique characteristics of place—its people, history, and resources—rather than imposed through generic, top-down models. Our research addresses a gap in understanding the drivers and beneficiaries of digital development in rural tourism and local contexts. In critiquing “smart villages,” we draw on geomedia studies (McQuire, 2016) to explore the interplay between media and place and the power of digital representations (Jansson, 2020). Using value creation theory (Vargo et al., 2017), we promote a participatory approach.

Place design emerges as both an approach, a mindset, and a method: A holistic framework combining problem-solving design with local knowledge and inclusive processes. It tackles complex societal challenges through action research (Brydon-Miller et al., 2003) and place-adapted strategies (Braunerhielm, Gibson, & Ryan Bengtsson, 2024), emphasising understanding the local place through inclusion and collaboration with local resources and actors (Braunerhielm, 2025). Unlike technology-driven models, this approach contributes to a set of methods that use diverse tools to co-create solutions, integrating tangible and intangible resources—such as local culture, history, and identity—to identify challenges and aspirations. Stakeholders with local knowledge contribute to outcomes that benefit residents, workers, and visitors. Digital technologies offer rural communities opportunities for entrepreneurship and resilience by overcoming geographic limitations (Li et al., 2024; Olalekan, 2024). Hope lies in their capacity to foster autonomy, ownership, and sustainable development (Braunerhielm, Gibson, & Ryan Bengtsson, 2024).

Our project focused on two rural communities, Sillerud and Syssleback, in Värmland, Sweden, with a focus on tourism and services. These communities face common rural challenges, including struggling businesses and tourism-related seasonal population fluctuations. Both are situated in municipalities known for small- and medium-sized enterprises, but are geographically marginalised, located near the regional border between Norway and Sweden. Our case studies show how place design incorporates diverse geographies, needs, hopes, and resources into customised processes. The resulting digital solutions were, above all, socially meaningful, fostering connections among residents, workers, and visitors. As a result, we have reimagined the “smart village” concept as “socially smart villages,” where social cohesion and local engagement are essential to digital intelligence.

This article provides a critical, practice-based contribution to understanding how bridging digital geographies with socially smart approaches can foster hope and resilience in rural communities (Braunerhielm, Gibson, & Ryan Bengtsson, 2024). We outline the “smart villages” concept and its connection with geographies of people and places, present our methodological approach grounded in participatory action research and place design, and share outcomes from workshops conducted between 2021 and 2024. We conclude by reflecting on how place-based design processes can support inclusive and sustainable rural development.

2. Theoretical Framework

The concept of “smart villages” is well established in Europe but remains relatively unfamiliar in Sweden. It promotes the use of digital technologies to support rural economic and social development (Malik et al., 2022), with the EU framing it as a means to revitalise rural services and strengthen resilience through innovation (Zavratnik et al., 2018). However, “smart” is often interpreted through a technology-centric lens, as seen in discussions of smart villages, cities, and tourism (Căne, 2021; Cvar et al., 2020; Shafiee et al., 2021). While digitalisation can aid rural development, it is not inherently transformative or sustainable and may carry with it environmental and social consequences.

What makes a community “smart” is not the level of digitalisation but how technologies address local needs and enhance quality of life (Zavratnik et al., 2018). “Smart villages” are based on the idea that value is co-created with actors connected to a specific place (Căne, 2021), making contextual understanding essential (Vargo et al., 2017). Here, value refers to immaterial resources—knowledge, ideas, solutions—that promote local development. The approach combines practical results with scientific insights through

collaborative methods (Aziiza & Susanto, 2020). Yet, research and practice still lack reflective and democratic perspectives (Braunerhielm et al., in press). Current debates tend to focus on agriculture, connectivity, and digital skills, while broader social issues receive less attention (Devadiga, 2020; Hlaváček et al., 2023). In Sweden, “smartness” often relates to resource efficiency, service adaptation, and innovation for shrinking populations (Cedergren et al., 2025). However, many initiatives are criticised as top-down, favouring technology firms over citizens and prioritising economic growth over social and environmental values (Luque-Ayala & Neves Maia, 2019; Rose, 2020). We suggest an alternative model where digital technology acts as a tool—rather than the driver—of development. This involves examining technology’s influence (Fast et al., 2018) and how places both shape and are shaped by it.

2.1. Geographies of People and Places

The modern landscape merges urban and rural elements, creating unique challenges for tourism and development. The urban norm has shaped rural lifestyles worldwide (Cloke, 2006; Woods, 2011), while ruralisation emphasises urban reliance on rural resources such as agriculture and energy (Westlund & Nilsson, 2022; Woods, 2005). Rural areas are increasingly blending work and leisure, exemplified by pandemic-driven migration and rising interest in holiday homes (Carson et al., 2016). This fusion of urban and rural spaces results in overlapping landscapes, economies, and lifestyles (Matern et al., 2019), challenging traditional binaries. Hybrid spaces can promote innovative digital infrastructure and participatory approaches tailored to local needs, bridging the gap between urban and rural areas. They also influence the demand and supply of services, necessitating strategies that reflect these shared geographies.

Recent restructuring of rural areas has revitalised them, particularly through tourism and creative industries. The dominant design approach emphasises idyllic images (Eggert-Heerdegen & Louafi, 2011), making tourism essential in creating attractive places for visitors, residents, and businesses. However, tourism stakeholders are often overlooked, with local authorities focusing on manufacturing and residents. Leveraging tourism expertise could help tailor rural strategies to local contexts. From a tourism geography perspective, places must be meaningful for both visiting and living, offering experiences shaped by activities and design (Wattanacharoensil et al., 2024). As urban norms influence rural landscapes, design needs to reflect the needs and ambitions of both residents and visitors (Inayatullah, 2007). This involves moving beyond isolated thinking and adopting integrated approaches that consider the sociocultural context of places (Braunerhielm & Ryan Bengtsson, 2023).

2.2. Digital Geographies

Geomedia as a theoretical lens helps problematise places and tourism by examining the interactions among spatial, social, and digital elements (Braunerhielm & Ryan Bengtsson, 2023; Jansson, 2020). Geomedia also provides a critical perspective on how technology-driven development influences everyday life in tourism, fostering both value and hope (Braunerhielm, Gibson, & Ryan Bengtsson, 2024).

In tourism and place development, digital information layers are often “placed” using positioning systems and tracking methods, such as historical maps or location-based games. Visitors access real-time feedback during events via devices and networks, while location-based services promote user innovation through user-generated content. Tourism researchers highlight how visitors have become intermediaries for much of

the information on social media (Munar, 2010), giving them considerable influence. Interactions on TripAdvisor, Facebook (van Dijck, 2013), Instagram (Conti & Lexhagen, 2020), and smartphones (van Dijck et al., 2018) shape perceptions of locations. Social media thus creates new digital representations of place, affecting identities (Lindell, 2022; McQuire, 2016). These geomedia platforms shape digital geographies and representations, leaving notable digital footprints. Algorithms and user-generated content often glamourise places (Ash et al., 2018; Valentine & Skelton, 2008), producing homogenised images that eclipse authentic local stories. For example, the Swedish countryside is often depicted as idyllic, with red houses and outdoor activities, while local actors lose control over their portrayal. This signifies a shift in power towards technical experts and visitors (McQuire, 2016; Morozova et al., 2021; Rydzik & Kissoon, 2021). ICT actors and marketers frequently overlook place-based priorities (Braunerhielm & Ryan Bengtsson, 2023), raising concerns about the accuracy and representation of local culture and history (McQuire, 2016).

2.3. Digital Geographies of Value

A geomedia perspective on tourism and placemaking (Braunerhielm, Grip, et al., 2024) emphasises how smartphones enable place-specific content, reviews, and social interactions, fostering autonomy and participation (McColl-Kennedy et al., 2015). However, Roy et al. (2017) highlight a techno-optimism that is tempered by the “digital paradox,” where tools intended to enhance experience can alienate users (Roy et al., 2017). Geomedia technologies distribute and gather information (Fast et al., 2019; McQuire, 2016), allowing digital navigation and connections to local stories (Somdahl-Sands & Finn, 2015). Customers engage with businesses through peer-to-peer communication (Minkiewicz et al., 2013) and digital practices such as online engagement and mediated storytelling (Bolton et al., 2018). Value thus arises for visitors and locals through a dynamic journey across multiple touchpoints (McColl-Kennedy et al., 2015) and is experientially shaped in specific sociomaterial contexts (Edvardsson et al., 2011).

Digitalisation intensifies this relational ontology, reconfiguring service landscapes into many-to-many environments and opening new modes of value creation (Teixeira et al., 2017). However, digital solutions continuously redefine touchpoints, reshape behaviours, and construct places as layered, affective, and symbolic spaces (Rosenbaum et al., 2017).

2.4. Bridging (Digital) Geographical Complexities

Rarely do we encounter methods that integrate the uniqueness of a place, the needs and challenges of its people, and its resources into digital development processes (Alvarado-Sizzo, 2021). Research also indicates that many other disciplines explore digital aspects of tourism without a comprehensive understanding of the industry or an understanding of the conditions of place (Braunerhielm & Hoppstadius, 2025). With knowledge of geomedia technologies, their effects, and possibilities, geomedia studies (McQuire, 2016) can support an approach that promotes a less technology-centred view of place development. Here, the concept of geomedia sensibility (Braunerhielm & Ryan Bengtsson, 2023) emerges as central to adopting a holistic perspective of a place, considering interactions among actors, history, resources, different representations, and digital solutions. This is one way of addressing the spatial and sociocultural dimensions involved in the formation and construction of digital geographies.

Both spatial and social perspectives are essential. The dependence on sociocultural capital increases and thus intensifies the further one gets from urban areas. The cultural history of a place also reflects the attitudes and ambitions of the local community (Braunerhielm & Ryan Bengtsson, 2023). A place's actors are therefore crucial in creating value for the community and enhancing a place's appeal and social environment (Boylston, 2019; Inayatullah, 2007; Zielinski et al., 2020). Today, the tourism industry plays a role in societal development, making its experience and expertise central to this complexity. As a result, knowledge and understanding of digital layers and their utilisation to connect various locations are necessary. But how can we integrate diverse geographies, sociocultural aspects, and digital layers in place design?

3. Our Approach and Method

We use place design as our starting point, both as an approach (how to think) and a method (how to do). Design involves solving complex problems (Jones, 2014). Place design has inspired us to combine the design process with society (Boylston, 2019; Fesenmaier & Xiang, 2017) and the research method of participatory action research (Brydon-Miller et al., 2003). It primarily focuses on addressing challenges and needs, making it essential to understand the place and users. The design process should be exploratory and process-oriented (Boylston, 2019). Palermo and Ponzini (2014) also emphasise the importance of working across boundaries and adopting a critical stance towards the physical and social contexts of the places being developed. Therefore, design, based on our approach, requires collaboration with co-creators to bring in the necessary expertise. We start by leveraging the unique conditions of the location and by involving in the design process those who live, work, or visit. Additionally, we incorporate digital layers as tools, for example, to create value or encourage interaction.

The design process itself is vital for creating both appealing places and local influence within them, thereby empowering communities and turning them into attractive tourist destinations (Braunerhielm et al., in press). In this context, design pertains to the approach and method for collaborating with stakeholders to develop a place in harmony with spatial, sociocultural, and digital conditions (Braunerhielm & Ryan Bengtsson, 2023). Place design can thus influence the future and foster hope among those who live, work, or visit a place (Inayatullah, 2007). With this in mind, understanding the complex contexts that impact tourism and place design is essential. Recognising the differences among various rural areas is crucial for developing tailored, place-based solutions suited to each location.

3.1. Creating Hope Through Place Design

This article presents the findings of our research project Smart Villages in Sweden. The project ran from September 2021 to August 2024. The research design emphasises participatory, democratic methods to promote change (e.g., Haraway, 2016; Ren et al., 2017).

Participatory action research guides the facilitator of the design process to work in cycles, each consisting of enquiry, action, and reflection. According to Brydon-Miller et al. (2003), the aim is for the knowledge and perspectives generated in each cycle to inform subsequent cycles. Participants played an active role at every stage of the design process (Brydon-Miller et al., 2003; Fesenmaier & Xiang, 2017). In this way, place design helps identify different dimensions by involving the place and actors from the outset and by participating in shaping the entire process, thereby contributing to knowledge while gaining new insights about the place.

We used in-depth interviews and a series of workshops to engage various actors in the process. Thompson and Prokopy (2016) argue that this collaborative approach is vital for helping people recognise their power and capacity to shape their history, strengthen hope, and influence the future of places through engagement with issues of place, representation, and power.

3.2. Studying Places

Our two cases included in the project, Sillerud and Syssleback, were selected alongside local key businesses and the municipalities in each area. Based on earlier research on rural tourism development, the challenge of rural communities providing local services to residents and visitors was identified as an important aspect to include in future studies. Therefore, the selection criteria from previous studies were also refined to include rural communities or villages that serve as service centres for residents and businesses and that also attract significant tourism.

Our communities are roughly 250 km apart, enabling face-to-face meetings and joint workshops. Sillerud offers local services and attracts international summer visitors for canoeing, fishing, hiking, and cycling, as well as many Norwegian shoppers. Syssleback is a year-round service centre, with winter tourism centred on skiing and motorsport, and summer activities along rivers and through forests. Both communities share Swedish-Norwegian cultural influences and have a diverse population of permanent residents, second-home owners, and tourists. Despite seasonal peaks, both are facing declines in permanent populations and the challenge of meeting varied visitor expectations—creating a complex environment for local development.

A small number of local businesses and organisations served as advisers, providing valuable local knowledge and input during the design process, which consisted of three cycles (Brydon-Miller et al., 2003). The first cycle, “in-depth place interviewing” (Boylston, 2019; Braunerhielm et al., in press; Ryan Bengtsson et al., 2022), was conducted over roughly six months. It involved mapping both the physical and digital representations of the sites to develop a multifaceted understanding, identifying challenges, needs, and hopes through qualitative interviews.

We conducted 25 interviews with residents, local associations, businesses, service providers, and public actors, using strategic and snowball sampling. To complement this, a visitor survey was distributed via email and QR codes at 37 tourist sites in Swedish and English during winter and summer, resulting in 138 responses. We also inventoried digital technology use and analysed digital representations on websites and social media through visual collages for workshop discussions. Data from interviews and surveys were analysed thematically, identifying key themes such as local service needs, resources, rural challenges, and attitudes towards digital solutions. These insights informed the next phase of collaborative workshops.

3.3. Designing Collaborative Creation

The second cycle was guided by a challenge-driven process rooted in local perspectives. Over a year, the research team facilitated co-creation workshops that built upon needs identified in the first cycle. Instead of imposing predefined goals, the approach adopted a “fuzzy goal,” allowing local actors to steer the process in line with participatory action research (Brydon-Miller et al., 2003; Coghlan & Brydon-Miller, 2014). Workshops were structured around three guiding questions: Why is development needed? What resources

exist? How can ideas be implemented? This ensured discussions began with local challenges and aspirations. The first workshop involved public organisations, the second included local entrepreneurs and associations, and the third brought together residents and potential visitors—uniting diverse voices from the grassroots across different stages.

The third cycle, over six months, brought key actors from both communities together to co-create concepts for future solutions: mainly digital services for local and tourism development. These sessions yielded concrete ideas for digital solutions to address local challenges and create new opportunities for businesses and community actors. The research team analysed the entire process and shared results for future planning.

Around 100 people participated in this process in the third cycle. Outcomes were documented through drawings, written notes, and summaries prepared by a project assistant. This material informed subsequent workshops and final analysis.

3.4. Research Processes: A Winding Road to Travel

A place design approach inspired by participatory action research offers benefits but also presents challenges. Selecting cases and participants can be biased when researchers are familiar with the area, and limited time and resources restrict inclusion. To promote transparency and diversity, we combined local recommendations with public sources and held open discussions with key actors about participant selection for interviews and workshops. Including everyone is impossible, and involving younger people proved difficult, a common challenge in rural development research and practice. By addressing these concerns with informants, we aimed to involve a diverse range of businesses, associations, and organisations connected to local services and tourism. Local knowledge was enhanced with data from websites and registers, and activities were scheduled at convenient times and locations for the participants.

Managing conflicts of interest, sensitive topics, old grievances, or overly negative individuals is another challenge in participatory action research. Conflicts exist in every community, so we invited diverse perspectives, encouraged open dialogue, and offered individual follow-ups. Including stakeholders throughout the process and addressing tensions in workshops helped bridge differences, meet varied needs, and incorporate multiple regional experiences.

4. Results: Different Local (Digital) Geographies

“In-depth place interviewing” provided knowledge and understanding of the local communities, but also revealed several challenges, including limited access to services, skills shortages, difficulties in attracting or retaining residents, and a lack of coordination among local actors. Infrastructure issues, such as energy access, charging stations, transport, and digital connectivity, were also prominent. While empty premises were seen as potential assets, they also posed obstacles to development when neglected, as vacant buildings signal a community in decline. Social resources like networks, voluntary organisations, and collaboration were identified as strengths. However, these were often inaccessible to newcomers or visitors, highlighting a gap in social inclusion. By examining different digital layers and representations, we uncovered invisible boundaries between physical and perceived geographies. These included distinctions between areas for residents versus visitors, and historical narratives that excluded women and children or focused

solely on the past or present. This revealed tensions between physical and digital geographies and sociocultural divides. These fragmented digital representations created barriers to participation and belonging, shaping how people experienced and navigated the place.

We worked on transferring knowledge from one stage to the next and bringing insights from each participating group. For example, starting by involving public authorities in workshops helped them gain a new understanding of and relationship with the places. They shifted from being “stakeholders” to “stakemakers,” in which their interest in increasing collaboration with local communities grew, thereby creating trust and confidence among the local population. The findings here provide counterarguments for why these places are significant. The “why” and the motto for Sysslebäck became “A string of opportunities! A place for life!,” while for Sillerud—where, for example, Sweden’s first unmanned ICA store (i.e., 24/7) is located—the motto was “The hub that creates opportunities. A dynamic living 24/7.” Developing these mottos collaboratively with public actors was very important. It helped create understanding and instilled great pride.

In the second workshop with entrepreneurs and associations, tensions and core values of each place were identified, leading to a rediscovering of the communities, a learning of local history and traditions that inspired creativity and future collaborations. Workshops with residents and visitors generated ideas for development, including digital solutions, building on previously identified needs.

The participating stakeholders asked several questions: How can we gather more information about what already exists? How can we make visible what is happening and what exists? How can we tell the story of our place? They discussed the need to be a “fly on the wall”—to listen and learn if it works here. The focus was on social aspects and local culture for newcomers to Sillerud, for example. Ideas included resident guides, mentors, or godparents for newcomers. The topic of local hospitality for everyone was also discussed in Sillerud. Can we make information visible digitally? Early on, an idea was conceived for a digital portal for the district named “Visit Sillerud/Living in Sillerud”—for residents and visitors, with on-demand services such as Uber, Facebook groups for babysitting, QR codes on notice boards, etc. The idea also emerged in workshops in Sysslebäck for a digital portal named “Hej Nordvärmland i Sysslebäck.” In Sysslebäck, there was talk of an all activity centre for courses or for crossing borders and meeting. Digital courses were proposed to help visitors explore nature, read maps, find trails, understand how to behave, and locate the best fishing spots. Knowledge about nature and information transfer were also discussed. The idea of a geofencing digital solution was raised, which would notify visitors when they pass a certain point on the road with a ping on their phone, along with details about various offers. They discussed how to improve existing solutions and develop new digital tools to enrich the experience for both residents and visitors.

During the third workshop, participants created a customer journey that covered before, during, and after the visit to Sillerud and Sysslebäck. They explored solutions for living, visiting, and working in these two communities, including both fixed and mobile options. An important consideration for the customer journey, and thus also for the digital solution, was where face-to-face meetings are necessary. The discussion on digital technology centred on how it can support the expressed needs and promote social interaction. This emphasised the need for solutions that enable new residents to learn how things work in the area, lend items to each other, assist with services, facilitate interactions between visitors and residents, and share stories about places. Participants highlighted that digital technology should not replace anything but serve as a helpful support.

4.1. Digital Solutions for Social Interaction

Through our workshops, we identified three critical areas. It became clear that these two communities, first and foremost, lacked clear information for visitors (and for residents and second-home owners) about local services and places to visit. Secondly, they also wanted to communicate their local culture and way of life. Here, it was evident that they were not ready to develop more place-based digital solutions and enhance visitor experiences. They needed to concentrate on strengthening the social fabric of each place.

We developed concrete concept sketches for digital solutions, such as digital portals that showcase what communities have and who they are. We used metaphors to explain these solutions, ensuring they align with the identified needs and challenges, and match the mottos created by the public authorities during the first workshop. The solution for Sysslebäck primarily focused on a digital platform but also included a physical presence in the neighbourhood. The solutions aimed to address the strong need to build local identity and pride—the social glue that binds the communities along the 100 km-long Klarälven valley. We proposed an appropriate metaphor that resonated with local stakeholders: “String of Pearls”—a digital platform designed to connect the various communities along Klarälven, acting as the thread in the string of pearls.

A similar situation in Sillerud was identified, characterised by an “underlying” need and hope for the wider community to bring people closer and enhance human interaction. In this case, the villages surrounding our “main village” tended to mind their own business, and previous collaborations and local developments either stalled or proceeded slowly. The metaphor evolved into a set of unconnected cogs with missing links. A strong driving force was likely preventing others from getting involved. An information platform was needed to restart progress. The metaphors served as analytical tools and as a shared goal or vision for local stakeholders. The online solutions aimed to emphasise the importance of information, encourage social connections, and meet visitors’ desires to experience local nature and culture. We recognised that digital solutions can be vital tools for facilitating face-to-face social interactions. These solutions were not the end but a means to achieve the broader vision.

The results and digital solutions highlighted the importance of an adaptable approach when identifying local stakeholders. Such needs-driven design processes do not start with technology but focus on the creative process. The stories that actors wished to share, or how the needs and hopes of visitors or residents could be fulfilled, were most essential. The digital layer was gradually integrated, and solutions were developed throughout the process. These digital solutions also helped bring people together and foster connections among those who live, work, and visit the area. They contributed to building bridges between people and places. Past conflicts between villages were addressed through solutions with the purpose of connecting places and people rather than dividing them. One example is the digital platform that included all the villages in the valley where Sysslebäck is located. The aim was to foster interaction and help bridge the historic disputes and rivalries between the villages, as well as the divide between the left and right sides of the river.

The solution in Sysslebäck also strengthened social bonds and created a tangible connection by forming a local development group—providing a unified front for dialogue with the municipality or larger players in the tourism industry, such as a bigger ski resort on the other side of the river. This local development group also became the natural owner and caretaker of the digital platform, thereby promoting social sustainability and local ownership. Ultimately, the solution served as a means of bridging physical, digital, and social geographies.

5. Discussion: Bridging Digital and Social Geographies

We aimed to design a process collaboratively involving the place and its actors. Our results contributed to boosting the competitiveness of villages, but more importantly, to strengthening local communities and fostering stronger bonds among people. We identified three types of measures needed: (a) information about existing local attractions and events (tangible) to enhance their visibility for both visitors and residents, especially newcomers; (b) stories about local culture and cooperation (intangible), particularly to help residents learn about the place's history, local customs, traditions, and norms; (c) improvements to existing services and the visitor experience (for residents, visitors, and part-time visitors). The Smart Villages project shows that place-based mediated digital solutions can bridge social, spatial, and digital divides when rooted in the lived realities and aspirations of local communities. This contrasts with the technology-driven and often urban-centric approaches that dominate digitalisation discourses (Harrison et al., 2010; Kitchin, 2015), which risk overlooking the sociocultural conditions of rural areas (Cowie et al., 2020; Sigala, 2018). As highlighted in the introduction, contemporary smartness narratives tend to prioritise technological innovation over local engagement, potentially resulting in solutions that do not align with rural realities (Hlaváček et al., 2023). The project instead supports arguments from smart villages research that genuine smartness must be bottom-up and collaborative (Aziiza & Susanto, 2020; Zavrtnik et al., 2018) and aligns with our critique that “smart” is often uncritically equated with digitalisation (Braunerhielm et al., in press).

The design process revealed that neither Sillerud nor Sysseleback initially required complex digital solutions. Instead, their priorities focused on making existing services and attractions more visible, articulating local culture and norms, and strengthening social bonds that support the sustainability of rural communities. These insights directly align with value creation theory, which stresses that value emerges through networks of actors who co-create meaning based on context (Vargo et al., 2017). They also resonate with geomedial perspectives that emphasise the influence of digital representations in shaping how places are understood, experienced, and valued (Jansson, 2020; McQuire, 2016). Using a grounded, participatory approach, the project enabled the redefinition of smartness—shifting from a focus on technology to what is now called socially smart development, in which digital solutions serve as tools to support local identity, cohesion, and hope (Braunerhielm, Gibson, & Ryan Bengtsson, 2024; Inayatullah, 2007).

The place design methodology was essential in facilitating this transformation. As Palermo and Ponzini (2014) argue, place-based development requires working across social and spatial boundaries, and this was evident throughout the project. During the in-depth interviewing phase (Boylston, 2019; Ryan Bengtsson et al., 2022), participants reflected not only on visible challenges but also on invisible boundaries shaped by history, culture, and power. Examples include the longstanding divide between the left and right sides of the river in Sysseleback, and the limited integration between newcomers and long-term residents in Sillerud. Such complexities align with discussions of rural–urban hybrid geographies (Gillen et al., 2022; Matern et al., 2019) and the socio-cultural dimensions of rural life (Cloke, 2006; Woods, 2005). Recognising these boundaries was vital, as Thompson and Prokopy (2016) emphasise the importance of collaborative processes in enabling communities to regain control over their own narratives.

During workshops, it was clear that digital technology could serve as a bridge between the physical and social dimensions when used in context-sensitive ways. This finding aligns with geomedial research indicating that digital layers can reshape place experiences (Ash et al., 2018; van Dijck, 2013; van Dijck et al.,

2018). However, as scholars such as Conti and Lexhagen (2020), Lindell (2022), and Valentine and Skelton (2008) caution, digital representations also risk glamourising or homogenising rural areas, reducing local cultures to picturesque imagery. This issue was evident in both communities, particularly in how social media influenced their external image. By developing locally produced digital solutions—such as “String of Pearls” in Sysseleback and the digital information hub in Sillerud—the project challenged these tendencies and empowered local agency over digital geographies (Morozova et al., 2021; Rydzik & Kisson, 2021).

The metaphors developed during the workshops offer concrete examples of how digital solutions originated from local needs. The “String of Pearls” metaphor in Sysseleback symbolised the bridging of historical tensions between villages along the Klarälven valley. This aligns with Baker and Ward’s (2002) argument that digital communities must be rooted in geographic and social proximity to be meaningful and sustainable. In Sillerud, the metaphor of interlocking yet disconnected gears demonstrated the need for renewed cooperation among villages that had previously drifted apart. These metaphors became analytical tools that assisted local actors in articulating future pathways and hopes, and in imagining how digital solutions could support rather than replace physical interactions. This perspective corresponds with research showing that digital tools can enhance local autonomy, social bonds, and sense of place when embedded within sociomaterial contexts (McColl-Kennedy et al., 2015; Rosenbaum et al., 2017; Roy et al., 2017).

A key contribution of the project lies in how hope emerged as a central theme. Hope functioned simultaneously as an emotional, social, and theoretical category. From a geomeia perspective, hope relates to the way digital representations open or constrain imaginaries of the future (McQuire, 2016). From a participatory action research standpoint, hope arises when people gain agency, recognition, and influence over the development process (Boylston, 2019; Brydon-Miller et al., 2003; Inayatullah, 2007). In the workshops, participants repeatedly described how the process itself made them feel more empowered and able to shape their place. By rediscovering forgotten histories, identifying shared challenges, and co-creating new digital solutions, they generated renewed optimism about future possibilities. This aligns with previous research on how collaborative, place-based approaches foster engagement and pride (Braunerhielm, Gibson, & Ryan Bengtsson, 2024; Braunerhielm & Ryan Bengtsson, 2023).

The outcomes in both communities demonstrate how digital solutions can act as catalysts for enhancing social cohesion and fostering new forms of local agency. In Sysseleback, the design process helped establish a local development group, which took ownership of the digital platform—a clear sign of increased local influence. In Sillerud, the digital information hub helped reconnect villages whose collaborations had stalled. These developments support the argument made by Alvarado-Sizzo (2021) that development processes must recognise the uniqueness of each place, and they show how digital geographies, when co-created, can promote socially sustainable futures.

6. Summary and Conclusion

The findings from the Smart Villages in Sweden project demonstrate that rural digitalisation is not mainly a technological challenge but a relational, cultural, and narrative process. Digital solutions can indeed support rural development, but only when they are embedded in approaches that value local knowledge, encourage social interaction, and foster hope. By integrating spatial, social, and digital dimensions through place design,

the project showed how communities in rural Sweden can strengthen social ties, reclaim their digital identities, and envisage more hopeful futures.

The results show that digital solutions can be powerful tools for shaping rural narratives, highlighting potential, and connecting people and places. Such solutions can strengthen social bonds, cohesion, and solidarity, contributing to vibrant communities and fostering hope for the future. However, a weakness of this study was the absence of children's and young people's voices, which are crucial for understanding how future generations perceive and imagine their communities. Future research should therefore include these perspectives to better understand what inspires hope and to create digital geographies that reflect their visions.

Our study of the cases presented and discussed in this article can be seen as an intervention, with the intention of contributing to a more sustainable way of working with local rural development. Our role as the researchers in this design method involves being involved in the processes that take place with participating actors, which means that we are facilitators and initiators of the process. It is therefore difficult to imagine what local development processes in these communities would have entailed if our research had not been carried out at this time, or at all. It is also difficult to say that the outcome has not been influenced by the fact that we, researchers, together with local actors in these communities, have participated in the process. To address this, we have discussed our role as researchers throughout our research, both within our team and with other researchers using similar methods. We have also had continuous dialogues with our key actors about our analyses and results to ensure that these are consistent with how they perceived the processes. However, we would welcome more joint reflections on research with similar design processes in the future.

Our approach harmoniously integrated tourism and place design, using participatory action research to develop ideas for digital solutions that address local challenges and needs. This highlights the importance of understanding local contexts when designing and implementing digital solutions, as well as promoting cross-border collaboration across administrative, cultural, and historically shaped boundaries. We therefore advocate for the concept of socially smart villages, where "smart" signifies a shared approach to place design that benefits both people and places—not solely through technology. In conclusion, being socially smart is a prerequisite for being digitally smart. We suggest that future research and practice should focus on smart ways of working—approaches that integrate social, spatial, and digital aspects—to create digital geographies of hope and strengthen rural communities in meaningful ways.

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Conflict of Interests

The authors declare no conflict of interests.

Data Availability

Data can be made available on request.

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