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## Geomedia sensibility in media technologies

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### ABSTRACT

With the rapidly emerging development of technology-mediated tourism experiences and place-based digital services for visitors, there is a lack of awareness regarding the spatial implications of technological implementations. Based on a participatory action research method applied in this study on five research-based destination development projects in Sweden, we propose a spatially sensible approach when developing enhanced experiences for visitors through digital technology. This paper is motivated by the emerging criticism of how media technology is shaping and reshaping spaces. Drawing on the theoretical underpinnings of the growing field of geomedia studies, we propose "geomedia sensibility" as a way to offer a sensible approach in the co-creation of digital experiences at destinations.

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### KEYWORDS

Geomedia sensibility; spatial sensibility; media technology; technology-mediated tourism experience; participatory action research

## Introduction

The tourism industry has, in many ways, been at the forefront of technological development (Sigala, 2018). The tourism sector early adopted social media platforms for marketing and communication (Labanauskaité et al., 2020; Munar et al., 2013). Many businesses have incorporated new digital conditions by utilizing technological innovations, such as GPS and marketing analytics (Hjalager, 2002, 2015; Sigala, 2018). Companies such as Airbnb and TripAdvisor have become major players in the global tourism market (Munar et al., 2013; Van Dijck, 2013). Additionally, visitors' media use has shifted their role to co-producers of destination information and has invited them to communicate their own experiences (Conti & Lexhagen, 2020; Paiano et al., 2017). Thus, contemporary tourism is highly influenced by different digital solutions with the intention to increase service and visitor experiences.

However, in recent years, critical studies have increased awareness of the plurality of digital media. When technologies affect and alter travel and tourism in general, they can also affect and alter local conditions. The most prominent studies focus on how technologies such as Airbnb trigger gentrification processes, over-tourism, and conflicts between visitors and locals (Gössling & Hall, 2019; cf.; Ioannides et al., 2019; Krotz, 2017; Mermel, 2017). Several scholars also argue for the need to transform the development of digital tourism by paying attention to history, reflexivity, equity, transparency, plurality, and creativity (see, for example Alvarado-Sizzo, 2021; Gretzel et al., 2020; Sigala, 2018). We agree, but argue on the other hand that with an increased understanding of media in relation to these perspectives' media technologies have the potential to bring attention to a wider scope of narratives, offer new experiences and new understandings, thus being more inclusive and sustainable.

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In this article, we therefore suggest one way to address these complex issues by turning to and introducing geomedia studies (McQuire, 2016) within the tourism field. Geomedia studies specifically engage with the multiple articulations of the place-media dialectic and bring attention to how place and media are intertwined. Geomedia studies offer a critical framework for nuanced and inclusive digital development within a destination, especially concerning place-based and enhanced experiences for visitors through media technology. We build our argument by illustrating how geomedia studies bring attention to specific sensible perspectives within destination development and do so through participatory action research conducted at five Swedish destinations.

Based on empirical cases, this article proposes geomedia studies as a theoretical lens to facilitate a more nuanced development of media technologies within destinations. We conceptualize geomedia sensibility to initiate critical and reflexive questions early in the development process, as well as questions that could make aspects of collaboration visible in the process. Bridging the development of media technologies in tourism with geomedia studies will allow for a spatially sensible understanding in the development processes of media technologies to enhance the experience of visitors – what we address as geomedia sensibility. This could serve as a successful tool in enabling increased and inclusive forms of digital experiences in tourism (Chhabra, 2020).

In the first part of this article, we present the field of geomedia. Thereafter, we illustrate how geomedia sensibility can be implemented using examples on critical questions from five research-based destination development projects in Sweden, conducted from 2016 to 2021. Finally, we develop the concept of geomedia sensibility and provide a guidance on how to incorporate the concept in processes of media technology development

## A literature review

The field of geomedia studies (Adams & Jansson, 2012; Fast et al., 2018; Jansson, 2022a; McQuire, 2016) engages with the complexity of place (geo) and technology (media) by highlighting the extent to which place and technologies are interwoven. At the turn of the century, scholars within the field of media and communication studies started to address spatial aspects in relation to media technologies, especially in discussions regarding the increased use of digital technology and mobile media (Livingstone, 2004). In contrast to the earlier understanding of media as “placeless” it was now argued that mobile media technology intervened with space (Fast et al., 2018).

A similar discussion emerged within human geography when the development and use of location-based technologies, such as GIS and GPS, the role of media in activities within place, and representations of space evoked a “digital turn” within human geography (Adams, 2009; Ash et al., 2018; Thielmann, 2010; cf.; Wark, 1994). These mutual reorientations led to “a bridge between disciplines” (Adams & Jansson, 2012) and the new subfield of research, Geomedia (Fast et al., 2018; Jansson, 2022a; McQuire, 2016).

## The field of geomedia studies

The field of geomedia studies contributes with knowledge, theorization, and methodologies to address the intersection of spatial, social, and technological implications. McQuire (2016) describes geomedia as omnipresent, that is, portable and accessible, and to a larger extent than earlier media forms, situated in public spaces. He defines this as ubiquity, which is one of four factors explaining geomedia as well as location awareness, real-time feedback, and convergence. Location awareness enhances the role of “placing” digital information through positioning systems. “Location-aware” devices allow for real-time orientation and interaction with real-time feedback. Convergence refers to technological developments that enable this shift and the associated impact on institutions, regulations, and businesses (Jenkins, 2004) related to the transformation into a new “mediascape” with new forms of devices, platforms, screens, and networks.

What geomedia deals with are the relationships between media and aspects of the physical place, the material, the embodied, and the face-to-face. In a tourism context, communication is “taking place” at destinations, and as defined by Adams (2018), therefore shaped by space. Simultaneously, media technologies are part of the construction of space and, therefore, part of shaping destinations. In order to increase understanding of the relationship between place and media, it is fruitful to understand place as a relationally constructed, rather than a fixed entity. Based on Lefebvre (1991) a place is constituted through a variety of negotiations embedded in existing power structures tied to the past, such as history, the present and the future, including media representations. Lefebvre illustrates the construction of social space by a triad of spatial practice (for example, members of society, the outside world, and daily routines), representations of space (entrepreneurs, experts, planners, knowledge, power, and construction), and representational space (locals and their experiences, images, culture).

By understanding space as a negotiation between different parameters we can unravel why a place appears and is understood or experienced in a specific way. Applying a relational time-space perspective, according to Massey (2005), acknowledges how individuals create their own experience of place in its own time-spatial context. Within our contemporary media saturated everyday lives, individuals’ media practices are part of that context.

The expanding field of geomedia studies engages with a variety of questions at the intersection of media and place. For example, Wilken and Humphreys (2021), in a recent study, acknowledge that place is configured and negotiated through the media platform Snapchat, allowing for placemaking through media (Özkul, 2021). Lindell et al. (2022) bring attention to how geomedia practices reproduce social positions by identifying a connection between places that people visit and choose to display on social media. Lately, there has also been an increased interest in acknowledging temporal aspects of geomedia. Özkul and Humphreys (2022, p. 2563) argues that the “mediation of time and temporality should be acknowledged as one of the key aspects and defining features of geomedia”.

Several scholars also engage in pedagogical aspects of geomedia technologies, both in an historical context and in relation to environmental issues (Gryl, 2023; Terry & Hewson, 2022). The theoretical expansion of the geomedia field opens for more nuanced and critical studies which we argue are applicable within the tourism field.

## Geomedia in digital tourism

Several studies within the geomedia field address aspects of tourism (ex. Fast, 2021; Jansson, 2020, 2022b), applying a critical perspective on tourism practices at the intersection of place and media. McQuire (2019, p. 164) draws attention to how Google Maps capitalize on travellers and concludes that if we wish for the development of “other possible futures in a digital milieu, this will require further struggles over the operation of digital platforms”. Jansson (2022b) highlights how contemporary tourism is entangled with the platform economy, calling for the need for tourist agencies. Whereas a geomedia perspective has mainly been applied within critical studies of tourist phenomena, we here want to acknowledge how a geomedia perspective also can contribute to tourism development, giving visitors and local entrepreneurs an agency (Jansson, 2022b).

Our application of a geomedia perspective, firstly engages with the enabling of mediated interactions with users in the production of place. User-generated content may shift and enhance the narratives, images, and people’s experiences of a destination. Secondly, a geomedia perspective deals with how destinations are intertwined with the past, present, and future and illuminates how technology needs to be understood under these conditions. Thirdly, a geomedia perspective highlights that technology has a spatial impact, including socio-cultural aspects, both within the tourism sector and beyond.

Geomedia technologies are used as positioning applications within smartphones to enable place-based services as well as co-created experiences (Fast et al., 2019). The so-called Geomedia

technologies specify their strong incorporation in the physical space (Kanderske & Thielmann, 2019; Wilken & Humphreys, 2021). These technologies include digital maps with place-specific information, place-sensitive games, sound-based walks, and augmented reality (AR) allowing for visual and textual overlays. The emergence of geomedia technologies has made it possible to interconnect media technology with local places and local stories at destinations (Somdahl-Sands & Finn, 2015). For example, AR solutions are used to visualize historical events or illustrate the past. These e-services use the location-aware capabilities to provide place-based information and experiences of historical sites, restaurants, etc.

The emergence of place-based services has also enabled user innovation with user generated content. Several tourism researchers have provided examples of visitors who have become intermediators in social media (Munar, 2010, 2011; Munar et al., 2013) and visitors' interaction on different platforms such as Trip Advisor, Facebook (Van Dijck, 2013), and Instagram (Conti & Lexhagen, 2020) with their use of smartphones (Van Dijck et al., 2018). This has had an impact on tourism. ICT businesses, for example, have entered tourism without reflecting on how new technology affects tourism places. New technical solutions created by the COVID-19 pandemic – for example, the “staycation” is one concrete example (Gössling et al., 2021) lacking ways of acknowledging place-based agendas and inclusive perspectives.

When it comes to service-oriented businesses, such as the tourism industry, an increased understanding of the development of digital experiences for visitors within tourism must go beyond the commonplace preoccupation with technological progress and engineering. A few tourism researchers have addressed this issue. Boes et al. (2015) and Graziano and Privitera (2020) argue for the importance of stakeholders or human capital. Jernsand et al. (2015) and Neuhofer et al. (2012) also argue for taking the physical and social environment into account in technological development in tourism. We agree with these perspectives, but we would like to address how media technology is affecting both tourism places and socio-cultural practices, as well as the reciprocal relationship, i.e. how sociocultural practices are changed by information technologies in tourism.

What we are dealing with is how media technology is shaping and re-shaping spaces (Adams, 2018). We argue that even though media technology, through geomedia technologies, has a geographical position, it does not necessarily align with local conditions or draw attention to unique local assets. Several geographers support this argument, stating that changed geographies are engendered when media and digital technologies redefine place identities. For example, they equate places with glamorised images of tourism destinations (Ash et al., 2018; Valentine & Skelton, 2008). This implies that tourism actors have, in a way, lost control of development and information, favouring technical experts and user-generated content by visitors (Morozova et al., 2021; Rydzik & Kissoon, 2021).

Geomedia theory brings specific attention to how increased knowledge could guide a more nuanced development of media technologies in harmony with place. With knowledge of geomedia technologies and their effects and possibilities, a geomedia perspective could, in the long run, inspire a less technology-centred approach to tourism development and contribute to sensible development. With that said, critical questions inspired by geomedia could be raised to deepen the understanding of how the use of media technologies engages in co-creating or reproducing tourism places.

## Methodology

This article is based on several years of action research on place-based media development in tourism. The research was conducted from 2016 to 2021 in collaboration with tourism actors and local stakeholders, covering five Swedish nature and culture destinations: the nature reserve Glaskogen, the waterfront area of Kristinehamn (Lake Vänern), the cultural scene situated around the municipality of Sunne, the old mining area Långban, and Vildmark in Värmland (timber rafting

on the river Klarälven). These destinations are well-known and attract both national and international visitors, mainly from central Europe.

At each location, we conducted a collaborative innovation process guided by participatory action research, applying geomedia studies as a critical framework. The intention of participatory action research is to collaborate with actors outside academia to generate joint knowledge at the intersection of action, reflection, theory, and practice (Reason & Bradbury, 2008). By using participatory action research, we were able to engage a variety of local actors, including entrepreneurs, local organizations for tourism, culture, and heritage, the municipality, other local and regional stakeholders, as well as visitors and citizens. Additionally, in-depth studies of each destination were incorporated into the research. The aim, in line with the methodological instructions, was to develop new theory parallel to building valid knowledge useful for all involved parties (Styhre & Sundgren, 2005).

A significant aspect of participatory action research is to perform multiple analytical cycles in three recurring stages: inquiry, action, and reflection (Coghlan & Brydon-Miller, 2014). Each cycle informs the subsequent one and generates new knowledge and questions. This cyclic process ensures that theory and practice intersect and continuously inform each other, while the researchers reflect on the consequences of the process and critically assess the outcomes (Anderson & McLachlan, 2016; Coghlan & Brydon-Miller, 2014). For each destination, we conducted seven analytical cycles: 1. In-depth study of the destination (document study, qualitative study of media presence, qualitative interviews, and visitor survey) (See Table 1.) 2. Workshop with stakeholders. 3. Workshop with local entrepreneurs, organizations, and citizens. 4. Workshop with visitors and users. 5. Workshop with local entrepreneurs revisiting collected data (focus group discussions). 6. Concept development. 7. Evaluation.

A more detailed description and motivation for each cycle are presented in Ryan Bengtsson et al. (2022). In this article, we present our final reflection circle conducted on all five studies. We revisit each project and summarize them in an eighth and final reflective cycle.

By revisiting our results and reflections from all five destinations, we have identified common instances where our theoretical framework of geomedia was of significant importance. This paper, therefore, synthesizes how the knowledge, insights, and experiences of using a geomedia perspective in tourism development have been transformed into reflexive questions used in the development of technology-mediated tourism experiences. However, a more detailed methodological description of how action research was applied at a specific destination is presented in Ryan Bengtsson et al. (2022).

With a geomedia perspective as a theoretical foundation, we were able to focus on the relationship between place and technology. Taking a reflexive approach, we examined how they affect each other and considered the necessary considerations to work and develop technical solutions in harmony with place, rather than being driven solely by technology. The critical perspective on technology-mediated tourism development, which was incorporated into the projects, has been transformed into reflexive questions as a means to translate theory into practice. The questions serve as a way to illustrate the usefulness of theory and as a valuable approach in the development process.

## Results

Below, we illustrate how geomedia is used as a theoretical lens and approach in our method, where local conditions such as physical and social elements, as well as actors as stakeholders and users, are included through the use of critical questions (Ryan Bengtsson et al., 2022). Geomedia enables us to take a holistic approach to understanding a place, considering the interactions between actors within the place, its history, its resources, different forms of representation, and the use of media technologies. We refer to this approach as “geomedia sensibility.” With a geomedia perspective as a foundation (Fast et al., 2018; McQuire, 2016), we have formulated reflexive questions concerning local values and the representation of place, all with the aim of achieving geomedia sensibility.

**Table 1.** Presents the rich and diverse data collection and use of data sources throughout the process.

Method	Data collected	Sampling and material
Document study	Local history, culture, the conditioning landscape, and natural resources.	Written local material, such as books and reports. Archives at local heritage organisations. Visual material, such as old photographs. Websites describing the local history.
Qualitative study of media presence	Digital representation of the place.	Social media, such as Facebook, Instagram, YouTube, Google Maps, and Twitter. Hashtag search related to each place.
Qualitative interviews	On-site, face-to-face interviews with visitors, entrepreneurs, stakeholders and locals at each place.	66 interviews, 40 of which were with Swedish citizens and 26 were visitors from other European countries. The interviews were between 20–60 min long.
Workshops	Creative collaborative work with different groups.	Observations, written notes, photographs, and video documentation. Each workshop lasted around 4 hrs and was conducted locally on site. 15 workshops with 161 participants recruited using a snowball method among entrepreneurs and the research team.
Visitor survey	Qualitative visitor survey on site.	Survey distributed by the destinations. 54 answers.
Evaluation questionnaires	Qualitative evaluation questionnaires to participants in workshops.	Evaluation questionnaires distributed after each workshop. 67 answers.
Focus group discussion	Qualitative evaluation with entrepreneurs and stakeholders.	Six focus group discussions (20 participants) after the process.

A development process guided by the unique conditions of each place provides insights into creating a spatially-sensible understanding of how the use of media technology co-creates and reproduces places. Revisiting our five studies, a set of recurring critical questions bring attention to various perspectives.

**Question 1:** How is the destination represented both historically and presently? We start by problematizing the spatial aspects and representations of the place (Ryan Bengtsson et al., 2022). To do so, we explore how a place is represented over time and in the present, as well as how it is currently utilized. This initiates in-depth studies of each place, aiming to gain deeper knowledge of the local history, culture, landscape, and natural resources – a relational perspective of place (Lefebvre, 1991; Massey, 1994). Through document studies, we investigate written local materials and archives from local heritage organizations, along with visual materials such as photos and websites that describe the local history. Qualitative face-to-face interviews are conducted to gather insights from local actors, including residents, stakeholders, entrepreneurs, and associations.

By critically questioning pre-existing perspectives, we also raise questions about whose stories are being told. The data for example addressed marginalized perspectives, invisible boundaries and political issues. A concrete example was that historical representation from Långban focused on the mining industry and men within the industry but lacked representation of women and children, while Vildmark in Värmland excluded the history of timber on the river Klarälven.

**Question 2:** Who has control over the information today? Our next set of questions focuses on the technology that enables interactions with and among users in the production of place. We raise critical questions about the power dynamics of information about tourism destinations in general (e.g. Google or TripAdvisor) and specific media technology solutions. This examination addresses the representation of place in relation to new forms of power relations for visitors who use mobile

phones and GPS systems as tools in the tourism context. As Gössling and Hall (2019) have questioned, how does this affect information about tourism destinations? In our project, we address this through qualitative studies of media presence (Ryan Bengtsson et al., 2022) by analysing social media platforms such as Facebook, Instagram, YouTube and Google Maps.

Comparing the place with its media representation allows us to clarify what, who, and whose stories are included or excluded. This leads to follow-up questions concerning aspects such as gender, age, present time, and history. We found for that the contemporary representation (social media and marketing) of Glaskogen focused on nature and lacked historical connections to the local culture of origins or the previous local industry. This example demonstrates how we can raise awareness of the disparity between place and media representation, and how critical questions in the development process can strengthen the connection between them. The awareness of how place is represented in the media also raises a critical perspective on the power of media technology. Who has the power to decide what to communicate? Innovations in media technology often revolve around providing a customer-focused experience for visitors. Our results also showed the opposite, i.e. where visitors in Kristinehamn felt excluded and disconnected from local information and marginalized by the locals.

**Question 3:** Who is included in the process of development? An important question that arises from the awareness of place representation and the power of information is who is included in the development process of media representations. This partly relates to the fact that tourism actors, for example tourism entrepreneurs, have relinquished control of the development to ICT companies and visitors (Morozova et al., 2021; Rydzik & Kissoon, 2021), but also pertains to insights on inclusion and exclusion in the current representation of place. To address this, we have developed a series of workshops in our projects with the aim of capturing diverse knowledge from various actors through creative and collaborative processes. In these workshops, locals, stakeholders, entrepreneurs, and visitors participate to provide insights into their understanding of and relationship to the place, their knowledge of media technologies, and their role in local development.

The initial workshops are designed to build knowledge, integrating insights from our in-depth studies of the place and media representation with ongoing activities and future visions, identifying possibilities and limitations through simple prototyping (Ryan Bengtsson et al., 2022). Subsequently, the workshops generate ideas rooted in local context, leveraging local assets to explore different media formats and identify unique place-based solutions for digital experiences in each destination. An example of a prototype was a digital application allowing users to capture digital so-called story cards with a character or an event, by visiting different sites in Sunne. These cards represent keys to different narratives inviting visitors to create and share their own stories (Ryan Bengtsson et al., 2022), i. e. an user generated content. The process in itself also resulted in new initiated networks among local entrepreneurs in Glaskogen for future collaboration.

The examples demonstrate how geomedia sensibility contributes to an understanding of how to initiate media technology development from a place-based perspective, facilitating non-technology-oriented development. Consequently, the reflexive questions serve as illustrations of how geomedia sensibility contributes with approaches that can be incorporated into the development process. By connecting critical understandings of media technologies with place, we can address the extent to which media technologies shape and give meaning to tourism-related processes (Adams, 2018). Lastly, we acknowledge that the technology used within tourism has spatial and socio-cultural impacts, extending beyond the tourism sector itself (cf. Jansson, 2020). Therefore, geomedia sensibility can support new approaches and serve as an inspirational method for place-based media technology development in tourism.

## Conclusion and implications

We have turned to the field of geomedia studies, motivated by the emerging awareness of how digital technology is shaping and reshaping spaces (Adams, 2018; Fast et al., 2018; McQuire, 2016). We contribute theoretically with new perspectives and approaches leading to an increased understanding of how media technologies are used to co-create or reproduce tourism places. We address this concept through the notion of “geomedia sensibility”. Drawing on several years of empirical cases in Sweden and with geomedia as our backdrop, we have developed critical questions to support and sensitize the interconnection between technology and place early in the development of enhanced experiences for visitors through media technology (Ryan Bengtsson et al., 2022).

We ask reflexive questions regarding the spatial and socio-cultural aspects of a place. In doing so, we illustrate how a theoretical perspective can be included and contribute practically in tourism development. Geomedia sensibility directs attention to what is unique about a place and focuses less on the technology itself. We also suggest that geomedia sensibility is not only beneficial in the development of place-based enhanced experiences for visitors through media technology but to tourism development in general with the implication of contributing to sustainable tourism.

Given that the tourism industry intersects different interests and values among citizens, visitors, and private and public actors, it is important to address social issues rooted in history, society, power, participation, and representation (Alvarado-Sizzo, 2021; Jansson, 2020). Geomedia sensibility emphasizes collaboration between different actors and the local context, enabling technological development in harmony with the place. The implications of geomedia sensibility could consequently open up for a wide range of actors, such as local citizens and visitors, to contribute their stories and understanding of a place, i.e. an expanded perspective of user generated content in collaboration with place-based agendas. By working collaboratively, ongoing place-based inequalities become visible. A practical contribution with “Geomedia sensibility” is to use the critical questions, inspire creative processes and a sensible and reflexive way for destinations to identify new ways of using and engaging with technological solutions and the unique conditions of a place.

Finally, this article contributes with a theoretical lens that forms the basis for an increased understanding of the more nuanced development of media technologies by including “geomedia sensibility”. With this paper, we call for further studies on how to strengthen geomedia sensibility in media technology in both tourism development but also in a wider context of place development as well as applying the critical questions in other international contexts.

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(optional: please review the submission guidelines from the journal whether statements are mandatory)

Author 1: Conceptualization, Methodology, Validation, Investigation, Formal analysis, Data curation, Writing – original draft, Writing – Review & Editing, Supervision, Project Administration, Funding acquisition

Author 2: Conceptualization, Validation, Data curation, Writing – original draft, Writing – Review & Editing.

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