# 12 Measuring rural tourist behaviour and engagement

## Inside the mind of the visitor

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### 12.1 Introduction

Rural tourism has been emphasized as a sector highly prioritized by a number of countries, as it offers a means to stimulate socio-economic development by generating new job opportunities and providing alternative income streams for rural communities (Quaranta et al., 2016; UNWTO, 2023). Within hospitality research, customer engagement is identified as an important factor that can "enhance the overall visitor experience as well as the value proposition of the destination" (Bergel & Brock, 2019, p. 576). A challenge though is the double-edged sword of attracting tourists while preserving cultural heritage and minimizing the negative effects associated with tourism (Cöster et al., 2023), thus ensuring sustainable development of destinations. To achieve a balance, it is important to consider the specific context of the rural destination in relation to what attracts and engages visitors. When an individual is engaged in an object – a destination – this demonstrates their inclination to dedicate resources towards learning more about the place, interacting and discussing their experiences with others, or expressing their opinions (so-called word of mouth, WOM) (Harrigan et al., 2017). Previous research has demonstrated the positive effects of visitor engagement on revisits, commitment, loyalty, spending, and on relationships between the visitor and different stakeholders at a destination (cf. Rather et al., 2023). Hence, understanding the underlying processes and mechanisms driving visitor engagement, including the triggers of engagement, is central for attracting visitors to a destination, especially in rural areas. Given that the experience of a visit unfolds within a spatio-temporal context, real-time measurement of visitors' behaviour is necessary for understanding the factors engaging tourists (De Cantis et al., 2016). While visitor engagement is evolving through on-site experiences such as activities, encounters with different services, and interactions with the local communities and the landscape, previous studies on tourist engagement rely on post hoc survey-based data (So et al., 2014). Although survey data offer insights into preferences and motives, the results capture the cognitive experience perceptions *after* the visit, i.e. post hoc,

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rather than the mid-visit experiences. Therefore, while survey data can help researchers and practitioners in understanding engagement *post*-visit, it fails to provide insights into the engagement process occurring during spatio-temporal mid-visit engagement. One way of tracking real-time movement has emerged with new technology, such as GPS loggers (De Cantis et al., 2016; Ferrante et al., 2018). However, while capturing movements, such technology has as of yet not been utilized for measuring tourist engagement. This chapter contributes to research on visitor engagement with a method combining GPS trajectories, OpenStreetMap, and surveys to capture and measure visitor engagement and experienced value. By illustrating how the method has been implemented in rural destinations, the research contributes to the understanding of the nature of spatio-temporal engagement in a destination and provides insights into how engagement affects individuals' value co-creation processes. In doing so, it contributes to research on engagement (Bergel & Brock, 2019; Brodie et al., 2019; Dessart et al., 2016), while offering practical insights for destination developers in rural areas on how engagement levels are formed and what development efforts should focus on for further growth or in mitigating overcrowding risks. Here, "visitors" refers to consumers engaging in tourism activities (Smith, 2000) and travelling to places outside their usual environment for no more than a year (cf. Frechtling, 2006).

## 12.2 Engagement and experienced value

Given our interest in understanding the mechanisms underlying engagement, it is essential to start with defining the concept per se. When an individual is engaged in an object or, as in this case, a destination, it reflects that individual's disposition to invest resources into learning more about the destination, expressing emotions, and sharing experiences (Harrigan et al., 2017). Previous research shows that engagement has a positive effect on loyalty, intention to return, and brand evaluations (cf. Harrigan et al., 2017; Kumar et al., 2010; Kumar & Pansari, 2016). Understanding how visitors become engaged in a rural destination, and in preserving the cultural heritage, requires measurement of the process of engagement. This helps to identify what triggers engagement and to track its evolution over time, i.e. both prior to, during (also called mid-visit), and after the visit. Despite the acknowledged importance of engagement in marketing research, there is a lack of consensus regarding its conceptualization (cf. Rather et al., 2023). Within engagement research, there are two dominant streams, which view it either as behavioural (cf. Harmeling et al., 2017; Kumar et al., 2010), or as a psychological state – sometimes also referred to as the disposition to engage (cf. Brodie et al., 2011; Rather et al., 2023; Storbacka, 2019). Within the behavioural approach, customer engagement is defined by behavioural manifestations, such as customers posting reviews, generating content concerning a product, making suggestions for improvements, or through spreading information by

WOM. Common to all these forms is that they to different extents add value to the firm/object, as the customer's activities indirectly or directly contribute to strengthening the brand (cf. van Doorn et al., 2010). The customer in this view becomes a marketer of the firm, brand, or object. All of these activities are voluntary from the customer side and are based on the willingness of the customer to promote a specific brand or firm. Defining engagement by behavioural manifestations suggests that it is a unidimensional concept, focusing on behaviour that goes beyond a core economic transaction (Harmeling et al., 2017).

While the unidimensional perspective of engagement contributes with insights on how engagement behaviour can be captured, it has been criticized for disregarding the cognitive and affective/emotional processes, i.e. the psychological state, which plays a part in forming and influencing customer engagement behaviour (cf. Brodie et al., 2011). By including the cognitive and affective/emotional processes, not only the manifestations but also the dispositions to engage (Storbacka, 2019) are involved. Combining the psychological state with the behavioural view offers possibilities for capturing the whole process of engagement, from the disposition to engage to the manifestations expressing the engagement. Considering that tourism is an experiential activity in which hedonic consumption is an essential part (experiencing feelings such as fun, excitement, or curiosity), both the behavioural aspects and the psychological state are important for understanding visitor engagement (Zhang et al., 2018). This multidimensional perspective has been defined by Brodie et al. (2011, p. 260) as:

> a psychological state that occurs by virtue of interactive, cocreative customer experiences with a focal agent/object (e.g., a brand) in focal service relationships. It exists as a dynamic, iterative process within service relationships that cocreate value. It is a multidimensional concept subject to a context- and/or stakeholder-specific expression of relevant cognitive, emotional and/or behavioral dimensions.

This quote highlights important aspects of the multidimensionality of engagement; its dynamic nature, and how it is dependent on the context in which the interactions take place. This dynamic nature furthermore implies that the level of engagement changes and depends on an individual's perceptions and reactions to an experience. The cognitive aspect of engagement denotes the mental processes in relation to an object and refers to how an individual activates their cognitive processes, such as seeking information. It also encompasses the willingness to exert that effort (Brodie et al., 2011; Hollebeek et al., 2019). The cognitive aspects thus include the mental processes and investments in an object, such as a destination. Whereas the cognitive aspect involves a process that requires the mental effort of an actor, the affective aspect is an emotional reaction to something, or a feeling (Dessart et al.,

2016; Hollebeek et al., 2019). This feeling is also something that destinations appeal to when promoting love, passion, or other emotional expressions. To summarize, the cognitive and affective/emotional aspects are an individual's tendency, here called disposition, to engage in an object (Fehrer et al., 2018; Storbacka et al., 2016). It is the continuous process of adjustments of the disposition that has effects on and is revealed through engagement behaviour. In this chapter, we apply a multidimensional approach to engagement, as it allows the researcher to capture both the enduring psychological connection to a brand, object, or destination in conjunction with behavioural manifestations (So et al., 2014). While studying activities may provide an indication of the individual's behaviours, the psychological state provides an understanding of the engagement valence, where positive engagement is an actor's positively associated feelings or evaluations towards an object, brand, or destination. This positive engagement is important for the "enhanced value co-creation experience" and is expressed in the form of behaviours such as repurchasing, positive WOM, and/or collaborations (Li et al., 2018, p. 492).

### *12.2.1 Spatio-temporal context of actor engagement*

While a visitor's experiences during a visit are crucial for shaping their disposition and willingness to become engaged in the destination, the experiences and psychological expressions are embedded in and affected by the time and place in which they occur. The experiences are influenced by the context through a variation of touchpoints or interactions with other actors or the place, as "each and every actor experience occurs in a specific time and place, the connections surrounding the experience contribute to the framing of a psychological state or disposition" (Chandler & Lusch, 2015, p. 9). Thus, these connections, in a spatio-temporal context, in turn influence and are influenced by the cognitive and affective processes as well as the valence and strength of the visitor's engagement. Through a number of touchpoints or interactions, taking place before, during, or after the visit, the experiences and valuations of the destination and the visit evolve. Interactions are here understood as interactions with the place and also with "social others" (i.e., travelling companions), individually or in a group, which are essential in forming and influencing an individual's visit (Hamilton et al., 2021) during the entire process. Prior to the visit, the individual may have different reasons to go to a particular destination and a varying level of prior knowledge. This can in turn result in a search for information online, or by asking friends, family, or other individuals. The degree of attention, vigour, and enthusiasm towards learning more about the place represents the individual's affective and cognitive dimensions of engagement pre-visit. Engagement valence can be positively or negatively influenced or can remain unchanged. As the individual, alone or with others, visits and interacts with the destination (and its

historical artefacts, traditions, languages, architecture, artistic expressions, inhabitants, and other visitors), the affective and cognitive aspects are evaluated and interpreted directly or indirectly. Through the interactive processes, the experiences are in turn formed, reformed, and reinterpreted mid-visit. As the visit ends, the value co-created through impressions and experiences have effects on the disposition to engage. Recognizing its multidimensional nature, as highlighted by for example Brodie et al. (2011), that evolves over time and in a context, implies that measuring engagement post hoc is insufficient for capturing the intricacies of both the engagement process and its multidimensionality. Following this line of reasoning, we argue for the necessity of measuring pertinent indicators of engagement throughout the whole process.

### *12.2.2 Measuring actor engagement*

With the insight that actor engagement is multidimensional, including cognitive and affective/emotional dimensions and behavioural activities and manifestations that are formed by interactive processes dependent on the context and occurring over time, a complex concept emerges. Previous research on hospitality has measured online engagement. While there are deviating definitions of engagement, this is also reflected in how it is operationalized and measured. While So et al. (2014) identify five dimensions that commonly define the concept – enthusiasm, attention, absorption, interaction, and identification – Vivek et al. (2014) propose attention, enthusiastic participation, and social connection. In an early study on customer engagement, Patterson et al. (2006) emphasized vigour, dedication, absorption, and interaction as important dimensions. Mollen and Wilson (2010), studying online engagement with a brand, characterized engagement as captured through emotional congruence with the brand's online narrative together with the vigour of the cognitive processes in relation to utility and relevance. The emotional aspect was also part of Brodie et al. (2011) definition where passion was expressed by the respondents in relation to a brand. In combination with immersion (being absorbed in an activity; the individual is engrossed in something) and willingness to spend time and energy on an activity related to a brand (called activation), this reflects an individual's engagement in that brand. Previous and disparate ways of measuring engagement all have some commonalities, such that the cognitive aspect is reflected in awareness, knowledge, interest, being engrossed, or assimilation. On the affective side, the emotions evoked are reflected in measuring excitement or devotion. While the cognitive and affective aspects take place inside the mind and heart of the individual, the behavioural aspect shows through different activities such as willingness to recommend a place (WOM), to interact with others, or, as can be seen in a destination, in the form of exploring and staying longer in a place.

This can be summarized as in Table 12.1.

*Table 12.1* Classification of dimensions of engagements

| *Engagement aspects* | |
|---|---|
| Cognitive | Awareness |
| | Knowledge |
| | Interest |
| | Being engrossed |
| | Assimilation |
| Affective | Excitement |
| | Devotion |
| Behavioural | Willingness to recommend |
| | Exploration |
| | Length of stay |

## 12.3 Developing a method to measure multidimensional engagement

To capture the multidimensional concept of engagement in a destination/place, it is essential to understand the individual's different interactions and cognitive and affective processes in relation to where and when in a spatio-temporal dimension they take place. This calls for, as argued above, a broad approach in data collection to be able to capture the pre-, mid-, and end-of-visit journey of the individual.

### *12.3.1 Designing data collection*

In understanding the whole process, two different datasets were used: survey and GPS loggers with a like-click function. In addition to these two, GSM data (mobile phone data) was used to better understand mobility changes at a meso-scale. While the latter category cannot be linked to survey or GPS responses, it does provide a generic depiction of visitor behaviours in the studied regions.

### *12.3.2 Data collection in three different locations to test/verify the method*

Within the INCULTUM project, three different destinations in Sweden were selected for studying and testing the method for measuring engagement:

- Gotland. The largest island in the Baltic Sea, with the city Visby (read more at Toger et al., 2023b). Visby is characterized by its walled medieval city – a UNESCO World Heritage Site – which is on the verge of overcrowding during parts of the summer, but it has rural surroundings that could be developed further (Figure 12.1a).
- Öregrund – A picturesque coastal town in the region of Roslagen, rich in recreational amenities but not a "passer-by destination". It needs to develop its attractiveness to tourists (Figure 12.1b).

*Figure 12.1* Examples of the three studied sites: (a) Gotland (view from wall over the town); (b) The harbour area of Öregrund, Roslagen; (c) Drone photo of parts of the Torsö archipelago (west of Brommö).

- Torsö. An archipelago in the largest lake in the EU, a "stop-on-the-highway place" between Stockholm and Göteborg (Figure 12.1c) that needs to promote itself as an engaging destination to attract new potential inhabitants, as the population is decreasing.

### *12.3.3 Survey*

As the purpose of this chapter is to understand engagement with a specific destination, the survey requires that the questionnaires are distributed to those who are visiting the area. A questionnaire can provide insights on pre-visit engagement, while also providing insight on the characteristics of the visitors. For each of the locations, we handed out a two-page, single-paper survey and pencils, for easy response in outdoor locations, to each party that agreed to participate.

Demographic information was collected to provide an understanding of who the visitor is and the reasons for the visit. To measure the cognitive aspect pre-visit, the questionnaire contained questions measuring previous knowledge about the destination, expectations, and any information search prior to the visit (referred to in Table 12.1 as Awareness, Knowledge, Interest, Being engrossed, and Assimilation). The questionnaire was also designed to measure mid-visit behaviour by asking the individual to state the places visited and the activities undertaken, such as whether the individual visited museums, specific sites, or a restaurant/café. A critique raised against questions asked post hoc is that they ask the individual to recall what they did during the visit (cf. Stewart & Hull, 1992). To overcome this, the volunteers were asked to take the questionnaire with them and fill it out during their visit. Another critique of questionnaires concerns using preformulated answer options, as alternatives important to the respondent may not be included. The questionnaire was therefore pre-tested and discussed with different stakeholders prior to data collection.

In measuring mid-visit behaviour, the unique opportunities and challenges that come with each of the regions make it difficult to develop identical methodological approaches for the collection of data. Therefore, slight alterations to the surveys were made to ensure that cross-location comparisons could be conducted at the same time as location-specific questions could be investigated. The main challenge in our study was, however, to select the best

location and time for involving respondents. On Gotland, and in particular in Visby, tourist information desks, tourism information boards, web resources, etc., are widely available, but in Roslagen, and in particular on Torsö, there are few or no locations where all tourists would go for information gathering. This means that there are too many options on Gotland, and few or none at the other sites. In addition, finding one information locus implies that we only identify one type of visitor and not those who already have knowledge about the locations. To solve this, we mainly collected data in liminal spaces where visitors spend time before continuing their journey. For all of the selected sites, visitors wait for ferries (Torsö and Roslagen) or for ship-to-town transport (Visby). In addition to these locations, we also selected alternative data collection sites for sensitivity analysis.

To measure the end-of-visit behaviour and disposition to engage in the future, the questionnaire assesses satisfaction level (which is an estimate for Excitement in Table 12.1, an affective aspect), and willingness to recommend the destination (a behavioural aspect in Table 12.1).

### *12.3.4 GPS loggers*

While much previous research measures engagement post hoc, there is still a lack of research measuring engagement mid-visit in real time. The inclusion of this analytical dimension is essential as the experience of an individual visiting a place develops and is affected by the processual spatio-temporal dimension (Aho, 2001; Caldeira & Kastenholz, 2019; Godovykh & Tasci, 2020). Recent research has introduced methods for tracking tourists' movements with new technology such as GPS loggers (De Cantis et al., 2016; Ferrante et al., 2018). While the technology makes it possible to follow in the tourists' footsteps, this technology has primarily been used to understand the consumption of place, i.e. the movements per se. Although adding to the knowledge on how individuals move in a place, how long they stay and where they go, use of the technology for understanding the engagement process is new. The GPS loggers used in the INCULTUM project are the size of a USB flash drive and have a button on the top that can be used for different purposes, in this case to capture what the individuals like (a "like-click" button) – see Figure 12.2. This technology offers the opportunity to capture how tourists move and interact with the place, how long they stay at different points of interest, and, when given the instruction, it shows what they like as they click on the button (Figure 12.2c).

We asked a member of each party to wear a GPS logger as a necklace and instructed the volunteers to like-click locations that the travelling party enjoyed (see details below). Since each GPS logger has a unique number noted in a designated part of the survey, trajectories and survey responses could be connected. We selected times according to ferry/ship arrival timelines and made sure to be available for collection of GPS loggers and survey responses upon the participants' return. We also selected days with similar weather, to make sure that activities and choices were comparable between locations and over time.

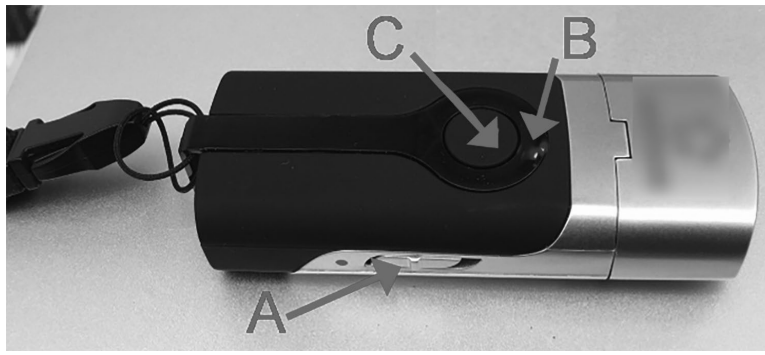


*Figure 12.2* GPS logger.

*Table 12.2* Classification of dimensions of engagement and temporal subdivisions of the tourist experience

| *Construct dimensions* | *Type of data* | *Pre-visit* | *Mid-visit* | *End of visit* |
|---|---|---|---|---|
| Cognitive | Survey | x | | |
| | GPS | | x | |
| | Survey | | | x |
| Affective | GPS like-click | | x | |
| | Survey | x | | |
| | Survey | | | x |
| Behavioural | GPS | | x | |
| | GSM | | x | |

To measure mid-visit engagement, the GPS loggers' like-click function is used as an estimate for affective and behavioural aspects of engagement. While like-clicking on a general level can work as an indicator of engagement, it is hard to estimate to what extent the level is high or low, unless also considering the number of like-clicks in relation to attention and vigour. The reason for this relative measure is that an individual's like-clicking once during a 7-hour visit could be argued to indicate relatively less engagement in the destination than an individual like-clicking once during a 1-hour visit. Attention is here operationalized as duration, in this case in the form of time spent at the destination, whereas vigour is measured as distance travelled during the visit.

In Table 12.2, the multidimensional classifications of engagement, as suggested in the literature section, are situated from pre-, mid-, and end-of-visit perspectives, and the method for data collection presented for each perspective. The table output suggests that while surveys are central, the combination of surveys and GPS loggers is essential for the understanding of engagement. Preliminary studies suggest (under review) that there is a significant positive correlation between the number of like-clicks and the stated value indicating how pleased the respondents were with their visit.

In addition to the relationship between surveys and GPS logging, it is also possible to draw conclusions from survey responses and the observed GSM behaviour over time, although the temporal dimensions became very different. In Table 12.3, responses from the 2021 survey from the Torsö archipelago revealed long-term behavioural changes in preferences as a result of the pandemic. GSM results confirmed the survey results (see Figure 12.5).

Using a combination of GPS trajectories and questionnaires, with the latter's answers matched to amenities and features identified in GIS resources (here collected through the GPS logger), we can match spatial activity to engagement. Starting with the GPS material, the GPS trackers

*Table 12.3* Survey responses from Torsö 2021 to the question about how and when they have changed their tourism/recreation behaviour because of the COVID-19 pandemic

| *How did the pandemic affect your behaviour?* | *Last year (%)* | *This year (%)* | *Next year (%)* | *Not at all (%)* |
|---|---|---|---|---|
| Avoiding crowds | 36 | 44 | 9 | 16 |
| Avoiding cities | 14 | 13 | 5 | 6 |
| Using private vehicle | 19 | 25 | 6 | 7 |
| Outdoor activities preferred | 26 | 33 | 6 | 5 |
| Nature important | 19 | 27 | 5 | 6 |

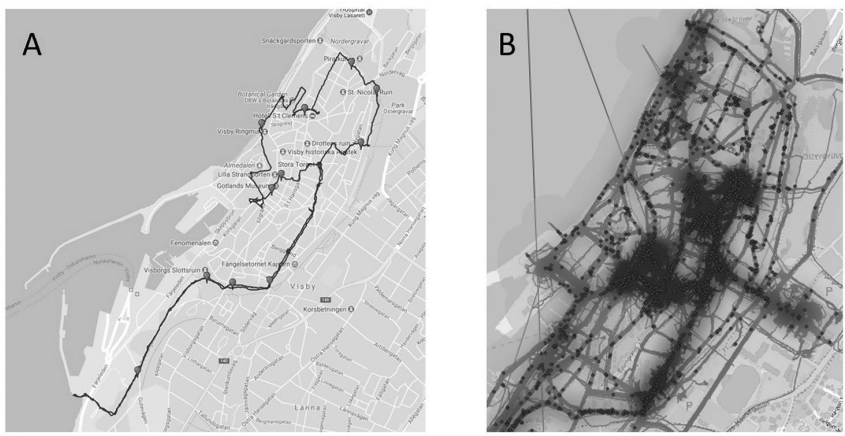


*Figure 12.3* GPS trajectories and like-clicks in Visby (Gotland).

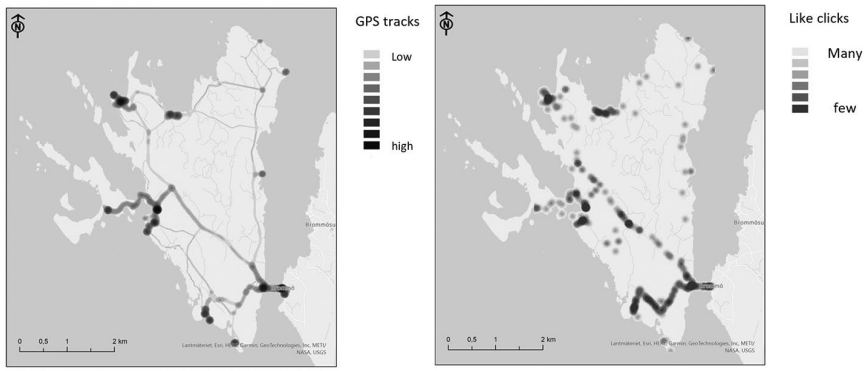


*Figure 12.4* GPS trajectories and like-clicks on the island of Brommö in the Torsö archipelago.

render results as shown in Figure 12.3a, where the line shows the trajectory chosen by a randomly selected tourist to Visby, Gotland, and the needle points indicate locations where the tourist has like-clicked. In Figure 12.3b, a full set of trajectories from tourists to Visby are overlaid. The patterns reveal two things about the visitors' behaviour: (1) the visitors are more or less keeping to the town streets of Visby, and do not wander beyond the medieval town wall that encircles the core part of Visby, and (2) the spatial distribution of GPS tracks and like-clicks are similar, suggesting that like-clicking is an activity conducted in the moment, and not an activity *saved to a later or better moment*, but an activity reflecting the experience of the moment.

In Figure 12.4, trajectories and like-clicks from tourists on the island of Brommö in the Torsö archipelago during the COVID-19 pandemic (summer of 2021) are shown. Using a slightly different technique compared to that in Figure 12.3, the density of trajectories and like-clicks are illustrated. Brommö Island is known for its long sandy beaches and rich fauna. The few private motorized vehicles that exist on the island are allowed to be used only by islanders (and property owners), making the mainly car-free island a cycling and hiking haven for tourists. From the common point of entry (the ferry connection, seen in the lower right part of each image), the visitor trajectories strictly follow the stretches of roads and tracks on the island (left-hand image), and the like-clicks (right-hand image) depict a similar pattern. The greatest density of tracks can be seen leading to the four main beach areas on the island (two in the north, one to the west, and one to the south). The patterns reflect what we observed in Figure 12.3, i.e. the visitors follow the designated paths, and like-click scenic locations as they travel.

### *12.3.5 GSM mobility patterns*

Uppsala University hosts the GSM database MIND, which contains pseudonymized, longitudinal records of GSM mobility. The database allows us to trace phone mobility patterns over limited time spans, but the spatial detail is limited to the location of the GSM antennas, which means that we can associate phones with areas and also match these areas to contextual statistics or land use data from GIS resources, but we cannot match locations of phones to addresses or specific amenities. By aggregating phones per spatial unit, and by comparing the relative density over time, we can determine whether individuals (phone users) are more or less likely to spend time in areas of different recreational qualities during vacation times, regular weekdays, and weekends. The association between phones and amenities was elucidated in several steps: (1) GSM antenna locations were transformed to km$^2$ units in which the phones were located; (2) mapped land use features from OpenStreetMap were used to calculate the dominance (area dominance using focal statistics in GIS) of different kinds of green and blue amenities in each of the GSM-designated km$^2$ units; (3) study preferences in land use exposure on different days, or as a change in preferences over time. In a series of papers, the GSM material described has

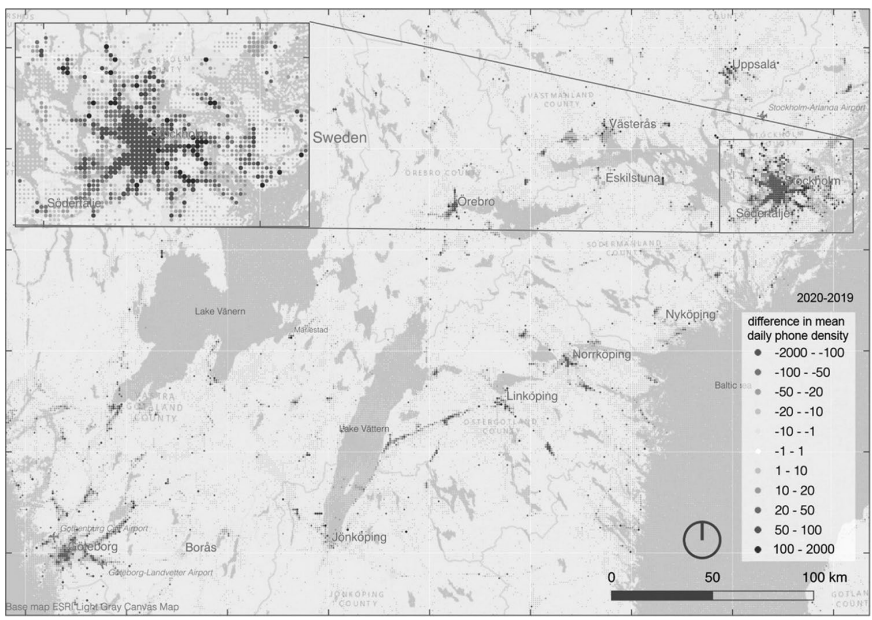


*Figure 12.5* Difference in population density between July 2020 and July 2019, in the central parts of Sweden. Darker colours indicate greater population change (for a full colour version of map cf. Östh et al., 2023). Map produced with ESRI ArcGIS®, base map ESRI Light Gray, map data sources: Lantmäteriet, Esri, Garmin, GeoTechnologies, Inc., METI/NASA, USGS.

been used to depict recreational mobility behaviour in Sweden. In Östh et al. (2023), the changing choice of locations during the pandemic is studied. They used a first differencing approach to show the relative change in population density during a Thursday in July, the main vacation period in Sweden (see Figure 12.5). The figure clearly shows how individuals are avoiding densely populated regions and favouring remote areas, and especially areas close to water, during the pandemic. The selection of nature amenities studied by Östh et al. (2023) was based on the survey conducted on Torsö.

Toger et al. (2023a) and Shuttleworth et al. (2023) find similar patterns where rural amenities are favoured during weekends, and during holidays such as Easter. Both of these studies include the Roslagen archipelago in the Baltic Sea, and both studies concluded that the archipelago gained population during recreational periods. The results are not spatially detailed enough to help us understand the engagement of individual visitors, but it helps us to understand the general change of behaviour in broad brushstrokes.

## 12.4 Concluding discussion

A cornerstone of our chapter is to reason about the nature of visitors' engagement and how to design the methodological setup for the measurement of their engagement in rural settings. We exemplify our discussion about visitor engagement using data from three rural and coastal but otherwise relatively different locations in Sweden. For each of the three regions, we have employed the same methods, which primarily means using survey and GPS logging techniques for the measurement of tourist engagement, but by adding GSM data, we are also able to show how, over time, changes in locational patterns for phones can be matched to survey responses, and where proximity to nature, avoidance of densely populated areas, etc., can be traced in both kinds of datasets.

What can we learn from our analysis? We propose that the engagement of visitors at tourist destinations is best measured using a combination of tools, where the different temporal dimensions of a visit are considered using a combination of survey and GPS measurements. By using surveys, the engagement of visitors before (when initially handed the survey, if this takes place before the trip) and after (upon return) can be measured. However, the temporal and spatial distribution of like-clicks observed by GPS loggers and the positive correlation between like-clicks and the stated pleasantness of the visit (as expressed in surveys) suggest that like-clicking on GPS devices and using GPS loggers can facilitate the analysis of engagement, and is suggested as a key method for measuring mid-visit engagement. On an aggregate level, the results from the GPS studies also reveal another important result. There seems to be a strong link between the duration of stay and like-clicking, in that areas with more and longer stays have a corresponding increase in engagement. Although the causal relationship between stay and like-click can be difficult to tease out using our technique, the results suggest that unattractive areas are not only not "liked", but they are also quickly passed.

### *12.4.1 Limitations*

An issue with our studies of engagement is that data collection took place during different phases of the pandemic. The pandemic affected peoples' behaviour to a considerable extent, and in ways that challenged behavioural norms and distribution of visitors. The pandemic enabled us to study the change in behaviour triggered by a shock, and as such, our studies were rewarding in providing evidence of a change in preferences towards more nature and solitude at times of risk. However, we have been unable to specify a state of *normal* behaviour during our study period. Uncorrelated, but worth noting, are also the effects of climate change, which is rapidly affecting tourism. Over a five-year period (2018–2023), Torsö experienced the warmest summer and the rainiest vacation period in a 100-year period, and the other study regions were almost as heavily hit. This underlines the challenge of finding a normal behaviour among tourists, and it also highlights a long-term challenge for tourism development.

### *12.4.2 Suggestions for future studies*

The method was developed and tested in three locations in Sweden. As behaviours are context-specific, testing in other contexts is important for refining the method. In this study, the pandemic may have affected the results. Future studies would also benefit from an analysis of the resilience of destinations, in terms of how well they are coping with or mitigating the effects of both the pandemic and increasing climate changes, and how these are affecting visitor behaviour.

## Note

Maps throughout this chapter were created using ArcGIS® Pro software by Esri. ArcGIS® is the intellectual property of Esri and used herein under license. Copyright © Esri. All rights reserved. For more information about Esri® software, please visit www.esri.com.

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