


# Mapping Local Perceptions for the Planning of Cultural Landscapes


Marta Ducci, Heritage Studies, Vrije Universiteit Amsterdam, The Netherlands\*

 <https://orcid.org/0000-0001-9063-5568>

Ron Janssen, Spatial Economics, Vrije Universiteit Amsterdam, The Netherlands

Gert-Jan Burgers, Heritage Studies, Vrije Universiteit Amsterdam, The Netherlands

Francesco Rotondo, Urban Planning, Università Politecnica delle Marche, Italy

 <https://orcid.org/0000-0001-8599-7994>

## ABSTRACT

Local perceptions in the definition of cultural landscapes have been on the radar of the scientific community for a long time, but very few studies have focused on integrating this information into heritage and planning practices. The purpose of this paper is to demonstrate, with a practical example, how to do so through a Public Participation GIS (PPGIS) application. In this study, a landscape approach and participatory mapping framework were tailored to a case study area in the south of Italy, where an online map-based survey was shared with the public. The survey results illustrate how the application effectively brought to the fore local heritage perceptions as relevant sources for future potential spatial planning strategies.

## KEYWORDS

Co-Design, Democratisation, Heritage, Maptionnaire, Participation, PPGIS, Spatial Planning

## INTRODUCTION

In the last few decades, a new, more inclusive vision of defining and planning *cultural landscapes* has developed in the field and practice of cultural heritage studies. It first emerged when the United Nations Educational, Scientific and Cultural Organization (UNESCO) officially recognised *landscape* as the result of the combined work of humankind and nature, including both natural and cultural components, as well as tangible and intangible values (UNESCO, 1972, 2003, 2008). As a result, landscape came to be seen as a *cultural* expression of a long and intimate relationship between people and the natural environment they inhabit (Cosgrove & Cosgrove, 1984).

Since then, the concept of *cultural landscape* has also come to include ‘unofficial’ definitions of heritage. First, with the European Landscape Convention (Council of Europe, 2000), ordinary landscapes were recognised for their heritage value, in addition to their outstanding counterparts. Before then, the previous category had hardly ever been considered. Second, local communities are increasingly engaged in the processes of defining heritage and identifying strategies for its protection,

DOI: 10.4018/IJEPR.317378

\*Corresponding Author

This article published as an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>) which permits unrestricted use, distribution, and production in any medium, provided the author of the original work and original publication source are properly credited.

management and planning, with community participation becoming a key practice for cultural landscape planning and sustainable development (Council of Europe, 2000, 2005; UNESCO, 2011; Rotondo et al., 2016).

Over time, various *participatory methods* have been developed, and their use has consistently increased (Nanz & Fritsche, 2014; Cooke & Kothari, 2001). In the last two decades, *map-based tools* have become particularly widespread, as they are very well suited to collecting and processing input from local communities that can be easily translated into planning information (McCall, 2021; Gottwald et al., 2021). Notwithstanding these developments, the integration of local heritage perceptions into the heritage and spatial planning fields is still not nearly common enough in practice (Ryan, 2011; Gottwald et al., 2021; Spanu et al., 2017; Grasseni, 2012; Torquati et al., 2011; Garcia-Martin et al., 2017; Nikula et al., 2020). This paper aims to test the effectiveness of a map-based online questionnaire tool in revealing local heritage perceptions and integrating them into the planning practice.

This study specifically deals with Maptionnaire,<sup>1</sup> an online questionnaire application that was used in a case study in the south-Italian region of Apulia, where planning strategies are being developed for slow tourism in relation to the rural cultural landscape. The authors focused on what Steinitz (2012) refers to as the people of the place, using the online questionnaire tool to discover what these people of the place value in the cultural landscape. It will be argued that this tool makes it possible to collect valuable extra information in addition to well-known, official heritage objects and notions, and that this can contribute to more inclusive planning and management of local cultural landscapes.

The overall question addressed in this paper is:

- Is a map-based questionnaire an effective tool to map local heritage perceptions and use them for the planning of cultural landscapes?

The following subquestions follow from this main question:

- Do respondents identify other heritage elements than the official heritage categories?
- Do respondents pay attention to official heritage elements?
- What is behind these differences?
- And how can this information be used from a planning perspective?

The first section introduces the emergence of a landscape approach in the field of heritage, as well as the spread of map-based participatory activities. The second section will then introduce the case study area in relation to ongoing local spatial transformations and planning strategies. This is followed by a methodology section that presents the tool used, the design and dissemination of the questionnaire, as well as detailing how the data were processed. The results section will address the outcomes of the questionnaire, with an emphasis on the criteria that were used to evaluate the effectiveness of the tool: the number and diversity of participants, the quantity and quality of the mapping data, and the other collected information. More specific criteria to evaluate the tool are directly related to the subquestions: first, whether it could give insights into perceptions and data other than the 'official heritage' mapped by the authorities; second, whether the tool helped the respondents in identifying official heritage; and third, whether it helps in identifying a relation between different groups of the population and their inputs. The final section discusses the last criterion to evaluate the tool, that is, to what degree this information can be used for planning purposes.

The questionnaire results presented in this paper were used in a later phase of the research (during four co-design workshops), where citizens and other stakeholders were invited to develop design proposals focused on cultural landscape valorisation and slow tourism development (Ducci et al., in press).

## CONCEPTUAL FRAMEWORK

### The Landscape Approach

The Maptionnaire tool investigated in this paper is meant to bridge the traditional divide between cultural heritage conservation and spatial planning. Until recently, these two professional worlds were far apart, and even in conflict with each other. Built heritage in historic city centres, in particular, was deemed untouchable, frustrating urban interventions and plans to the point of paralysis. Professional and governmental heritage boards served to safeguard the conservation and preservation of such objects and sites, and they still do. Beyond these heritage cores, however, spatial planning was often free to proceed without any major restrictions from the heritage boards, leading to the loss of historical features in peripheral and rural areas.

During the last three to four decades, significant changes have occurred in the selection of such official heritage designations. The area under study, the Brindisi Plain in the Italian Apulia region, is a case in point. As elsewhere in Italy, here, traditionally, the various Soprintendenze (heritage boards) centred on iconic heritage objects for conservation and protection—mostly urban sites like castles and churches—the selection of which was determined notably by their national (art-)historical value. Increasingly, the heritage boards collaborate with other experts, like planning offices, and also recognise selection criteria, such as local landscape and agricultural value. This is a much wider, international phenomenon linked to a paradigm shift in the theory, management, and practice of the heritage field. As part of this paradigm shift, traditional conservation ethics and policies have come under increasing criticism for their exclusive focus on iconic monuments and sites and for their tendency to isolate this heritage from its intangible aspects, its wider spatial context, and more in general, contemporary social, economic, and cultural developments. In contrast, a new paradigm is gradually emerging in academia, management, and policy, emphasising the potential role of heritage as a major resource for regeneration, renewal, and sociocultural as well as economic sustainability (Muñoz Viñas, 2005; Bloemers et al., 2010; Waterton & Watson, 2015; Spanu et al., 2017).

This new paradigm highlights the capacity of heritage assets to be integrated within the wider spatial and social context in which they are embedded. Adopting such a wide geographical and societal perspective, the new paradigm expands the spectrum of built heritage beyond traditional emblematic places to include cultural landscapes at large, including rural landscapes such as the Brindisi Plain. Focus is shifting from localised monuments or city centres preserved in isolation to a concern for whole landscapes and from the physical to the immaterial world of memories and traditions (Fairclough & Moller, 2008; Auclair & Fairclough, 2015). Accordingly, planners, economists, policymakers, and heritage professionals are all beginning to see that the totality of a given region's *cultural landscape*—tangible and intangible—can be used to release social, cultural, or economic capital (Turner, 2011; Veldpaus et al., 2013; Corten et al., 2014; Bandarin & Van Oers, 2012; Van Oers & Pereira Roders, 2014; Janssen et al., 2017). In Europe, the outlines of this new vision of cultural heritage landscapes have, during the last two decades, particularly emerged in countries such as the United Kingdom, the Netherlands, Sweden, Denmark, Germany, and Italy. The Council of Europe partly codified this critical approach in 2005 with the Faro Convention on the Value of Heritage for Society, prefigured by the European Landscape Convention (ELC) in 2000. The ELC has especially been important in materialising the change in perspective in the relationship between landscape and the definition of cultural heritage.

The Convention opens up the definition of cultural landscape to include natural, rural, urban, and periurban areas alike, whether they are considered 'outstanding, as well as everyday or degraded landscapes' (Council of Europe, 2000). Intimately linked to this democratisation in valuation is the increasingly common tendency to recognise all landscapes and manage them as part of the 'common good' (Settis, 2013). Part and parcel of this trend is that the professional world has opened up the planning processes to public involvement and participation. The quest for public participation in the definition and management of heritage landscapes can be heard

globally in urban settings and rural districts alike. A case in point is the Apulia Region, which is central to the present paper. Here, a Regional Territorial Landscape Plan (PPTR) has been developed, providing methods, criteria, and techniques for implementing the new landscape definition contained in the European Landscape Convention (Regione Puglia, 2015; Albrechts et al., 2020). Its aim is to foster a new model of sustainable development, which includes the cultural landscape and promotes local heritage values and cultural assets, working closely with the local communities (Rotondo et al., 2016; Magnaghi, 2003, 2005).

## Participatory Mapping

Although this new landscape paradigm has been embraced at supranational as well as at local levels, it still remains conceptual in nature in most cases. Relatively little research has been done on current tools for democratisation and community participation in the cultural landscape sector (Rotondo & Selicato, 2011; Rotondo et al., 2016; Alvarez Larrain & McCall, 2019). It is the main aim of this paper to further develop research on such tools. To that aim, it focuses on participatory mapping, which includes Public Participation Geographic Information Systems (PPGISs) and Participatory Geographic Information Systems (PGISs). Since the 1990s, participatory mapping has increasingly been used as a medium of exchange between experts, decision-makers, and the public (McCall, 2021; Sieber, 2006; Kahila & Broberg, 2017; Brown & Kytä, 2014; Kahila-Tani et al., 2019; Rzeszewski & Kotus, 2019). As McCall (2021) points out, the turn to participatory mapping is associated with four main ideological drivers which developed over the past few decades: (1) good governance through increased citizen participation associated with transparency, inclusiveness, accountability, and legitimacy; (2) critical spatial knowledge and the impulse toward the integration of ‘non-authoritative’ knowledge; (3) the recognition that people’s spatial knowledge has validity and value; and (4) the development of appropriate GIS tools. A good number of examples can be found in the literature of participatory mapping activities that seek to integrate local perceptions into landscape planning practices. In these cases, authors often refer to participatory mapping input as local spatial knowledge, spatial values, place values, landscape values, meaningful places, sense of place, social values, place attachment, etc. (McCall, 2021; Gottwald et al., 2021; Alvarez Larrain & McCall, 2019; Brown et al. 2020; Gandarillas & McCall, 2021). In this study, which focuses on the cultural landscape, the authors will refer to them as ‘local heritage perceptions’.

In the literature, differentiation is also made between local heritage perceptions that constitute *facts*, such as observable spatial phenomena, objects and sites, and *values*, composed of preferences, principles, and priorities (McCall, 2021). Most of the public may not know the facts but feel the values (McCall, 2021: 109). Indeed, participatory mapping is also employed to identify and interpret local people’s spatial values and priorities. As both facts and values can contribute to the planning of cultural landscapes, this study aims to collect and use both in the next step of the research: the co-design workshops. Specifically, the questionnaire presented in this paper, focuses on collecting official heritage sites and emotional or symbolic heritage and landscape values for the members of the Brindisi Plain community. During the workshops, citizens, experts, and stakeholders of the local community will use these inputs and decide whether to include them in the plan.

## CASE STUDY

The Brindisi Plain, in the Italian region of Apulia, is well suited for a case study on participatory mapping of cultural landscapes. This is not only because of the well-developed Regional Territorial Landscape Plan, which actually facilitates community participation in heritage and landscape planning, but also because it is home to a series of other projects and initiatives that are actively aiming to valorise local heritage.<sup>2</sup> The study area spans across five municipalities: Brindisi, Mesagne, Latiano, Oria, and Francavilla Fontana (Figure 1), covering an area of 773 km<sup>2</sup>, which is approximately 45 km long and 17 km wide and has around 180,000 inhabitants.

Figure 1. Study area: The five municipalities along the Via Appia Antica in the Brindisi Province, Apulia (Italy)



These five municipalities have in common that they each feature a section of the Via Appia Antica, an ancient Roman road linking Brindisi to Rome, which crosses them all transversally. Although the original road was largely lost in the post-antique period, even the traces of the road, as known from excavations and written sources, are considered to be of such importance that the road was recently nominated for the UNESCO World Heritage list. The enhancement of this ancient road is an issue that has been addressed at the national level with a project promoted by the Italian Ministry of Culture, which envisages creating pedestrian and cycling routes for tourists. This recovery project, which focuses on the role of cultural heritage and slow tourism for sustainable development, was used as a starting point for the present study.

The Brindisi Plain is rich in tangible and intangible cultural heritage assets, such as historic city centres, monuments, architectural buildings, churches, archaeological sites, natural reserves, celebrations, and culinary traditions. However, the plain's main characteristic is its agricultural nature, with an age-old focus on olive culture, viticulture, and intensive horticulture. Tourism has not landed here yet, in contrast to adjacent areas such as the Murge Hills and the Lecce Province, which are marked by mass tourism trends. Yet, tourism is also a main goal of formal development strategies at the regional and local level in the Brindisi Plain, which seeks to foster slow tourism, assuming that it could positively impact the area and differentiate it from its surroundings. Accordingly, the questionnaire was designed to collect information to help develop such a strategy through local participation.

The questionnaire also closely follows the guidelines of the Territorial Landscape Plan (PPTR) of the Apulia Region (Regione Puglia, 2015), which pursues the protection and enhancement, as well as the recovery and redevelopment of the Apulian landscapes.<sup>3</sup> The PPTR is a so-called 'new-generation' plan (Porceddu, 2012) that applies European guidelines regarding new concepts of landscape and participation, such as the European Landscape Convention. The plan promotes a comprehensive design of integrated landscape systems, including heritage, ecological networks, and cycling systems; it also promotes participatory processes to engage citizens in landscape design. In

this regard, the Apulian Landscape Plan is an example of the shifting approach in the landscape and heritage sectors. From a decision-making process based only on heritage and planning experts and boards, this plan brought forward a more democratic and inclusive approach, in which the public and stakeholders are involved in recognising, planning, and managing their cultural landscape. Yet, the municipalities and provincial planning offices still have difficulties applying the PPTR guidelines in actual practice. In response to these difficulties, this study proposes a methodology to reveal local heritage perceptions and integrate them into the planning practice.

## METHODOLOGY

### The Tool

The questionnaire presented in this study was designed *ad hoc* for this case study to investigate citizens' perspectives on the local cultural landscape and to integrate these into local planning strategies. It was carried out using the Maptionnaire application,<sup>4</sup> an online PPGIS application that allows participants to map their answers and spatial ideas. This application has a simple and intuitive interface that allows even those unfamiliar with maps to participate, making the participation engaging and effective. In recent years, planners and researchers have often used this application to involve the public in participatory design processes, especially on a city or neighbourhood scale (Brown et al., 2020; Maptionnaire, 2021, 2022a). Fewer applications of this tool exist for the territorial or landscape scale. Other applications were also evaluated, but Maptionnaire was considered the most suitable because of its user-friendly interface and customisation options.<sup>5</sup> Another advantage was its high degree of flexibility and the large number of different types of questions and interactions it supported with maps and images (draw, evaluate, select, consult, upload audio and video, etc.).

Careful preparations were made for the survey. First, during the design phase, great attention was paid to striking an optimal balance between the number and type of questions, the difficulty and relevance of the questions, and the attractiveness and clarity of graphics and communication. Second, a website was created with relevant information about the study and the questionnaire.<sup>6</sup> Third, institutions and associations were contacted and invited to facilitate and participate in the project, including the regional heritage and landscape board, the five municipalities in the case study area, other local universities and local associations.<sup>7</sup>

### Dissemination

The questionnaire ran for 7 weeks (from March 27 to May 14, 2021) and was distributed through social media, emails, press releases, and word of mouth. The researchers consciously chose a voluntary-based recruitment method rather than seeking a representative statistical sample of the area's population. The latter would have required statistical techniques (Lavrakas, 2008; Clark et al., 2021), which imply different resources and time investment, as well as the involvement of different institutional levels.

Several posts were published to invite people to participate and share the questionnaire through the social media pages of local groups and the municipalities involved. Transparency on the objectives and commitment requested to complete the questionnaire (e.g. duration of 15 minutes) were prioritised during the dissemination. Simultaneously with the dissemination through social media, personalised emails were sent to institutions, groups, and associations in the area (approximately 35). They were asked both to participate in and help disseminate the questionnaire through their channels and mailing lists. An effort was made to cover a variety of sectors, such as the tourism, culture, education, social, architecture, archaeology, mobility, agriculture, and commercial sectors, which are linked to the local cultural landscape to different extents. Additionally, almost 3 weeks after the opening of the questionnaire, several local newspapers, both digital and printed, published a press release with the invitation to participate.



## Questionnaire Design

The questionnaire was 23 web pages long and featured different sections and types of questions: first, an informative section about the objectives, a consent form, and some instructions for the use of maps. This was followed by a section with questions alternating between traditional questions (e.g. multiple choice), image questions (Figure 2), and mapping questions (Figure 3). Finally, there was a section in which participants could leave their personal details and evaluate the questionnaire. On the final page of the questionnaire, respondents were given the chance to sign up for the subsequent phases of the study (the co-design workshops).

Figure 2. Example of a mapping question by points (sites)

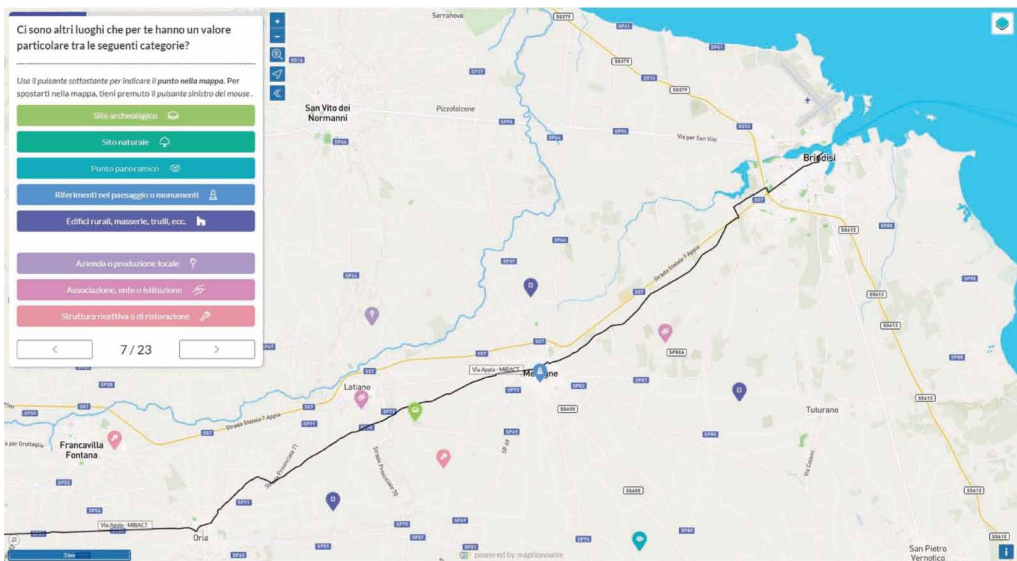


Figure 3. Example of a multiple-choice image question



A key consideration during the design of the questionnaire was that the average user would not know how to map or orientate on the app. For this reason, a brief tutorial page was included to help participants with the mapping questions. The questions section began with questions related to their knowledge of the area and then moved on to questions about the participants' conception of the landscape, its values, and transformations. To investigate the participants' heritage perceptions, they were asked first to map their 'places of the heart', leaving their input open to any place they value. Then, 'official heritage' categories were presented to them, such as 'archaeological sites, natural sites, panoramas, landmarks, monuments, rural buildings and farms'.

The participants were also asked to map sites associated with 'productive and social heritage', such as 'local companies or productions, associations or institutions and hospitality structures' that promote and enhance local traditions and culture with their work.

## Processing the Data

Once the questionnaire was closed, the data were downloaded from the online application as a comma-separated values (CSV) file,<sup>8</sup> which could be imported into a GIS application. From this file, the mapping results and all other answers were analysed, with the map inputs on one side and the textual descriptions and multiple-choice answers on the other. Each participant was given a unique identification number and was linked to the date and time on which they completed the questionnaire. This made it possible to link all answers to individual users. Once the data were exported in CVS format, two analyses were carried out: a statistical one using Microsoft Office 365 Excel software as available at the Vrije Universiteit; and a map-based one, importing the mapping data into a GIS application. For the mapping data, the names of places mentioned by the participants were checked and aggregated when the same place name was mentioned multiple times. The results of both these statistical and map analyses will be presented in the following section.

## RESULTS

### Engagement and Participation

A total of 391 valid participants took part in the questionnaire, with 85 (22%) completing the entire questionnaire. The completion percentage is quite limited, yet it corresponds to the percentage reported by other experiences (Maptionnaire, 2022b).

The social media pages of local associations, institutional channels, and the website were crucial in reaching out to the local population, with social media (30%) and the website (21%) being the most effective. Newspapers and emails (6%-7%) were less effective, and a consistent 36% of users could not be traced back to a particular channel.

The pool of participants (391 people) cannot be considered representative of the entire community, especially when compared to the overall population (circa 180,000 inhabitants). Furthermore, only 22% of the participants registered their personal information. Within this percentage, the questionnaire managed to reach a limited but rather diverse segment of the population: participants' ages ranged from 25 to 65 years old (with a peak around 35-45 y/o), and participants of both sexes completed the survey, albeit female participation was considerably lower (35% female, 63% males). Additionally, even though participants had different levels of education, the majority of participants were medium to highly educated (80% had a university degree, while only 20% had a lower level of education). Furthermore, very small percentages of participants who completed the survey were from different nationalities or with disabilities (respectively, only 1% and 2%). The participants represented various professional sectors, with engineering and architecture being the most common (22%); archaeology, education, health, and tourism sectors coming in second (around 10%). Agriculture, farming, and culture took third place (between 6% and 3%), followed by industry, marketing, and other sectors



with lower participation rates (1%). Additionally, 61% of the respondents specified having an active role in the community by being part of an association or for their job.

Groups may have been included or excluded due to socioeconomic factors, as well as difficulties in using the tool, professional or personal interests, or how the questionnaire was disseminated (the channels used), which may have influenced the pool of participants. Even though it cannot be determined whether certain participants were specifically included or excluded and which factors played a role, the authors explored if the technicalities of the tool or the nature of the questions (traditional, image, or mapping questions) affected the participation rate. This was determined by investigating the level of participation in relation to the type and number of questions (Figure 4).

The analysis (see the caption of Figure 4 for more details) shows that the participation rate was closely linked to the topics covered in the questionnaire and the specific scope of the study area (-46% between  $a$  and  $c_j$ ). The type of question (traditional, image, or mapping questions) partially affected the participation rate. Noticeable changes in the participation rate were found at the transition point from traditional questions to mapping questions (-35% between  $d_i$  and  $e$ ), and when a similar question was asked both with image and mapping options (-54% between  $g$  and  $g_j$ ).

It is also possible that the number of participants was partially affected by the length of the questionnaire and the time needed to complete it (15–20 minutes). Participants who completed the questionnaire (85) spent 23 minutes on average, and some people finished it after taking a long break (multiple hours) or even a week after starting it. Despite that, in the final section, most participants rated the questionnaire as medium length (77%); with an easy or medium level of difficulty (respectively, 57% and 29%); high or neutral level of enjoyment (51%, 38%); and as interesting or very interesting (50%, 31%).

## Map Entries

Participants submitted a total of 680 map entries, including 513 places (grouping ‘places of the heart’ and other categories of sites), 99 routes, and 68 areas (Table 1). The category ‘places of the heart’ appeared to be one of the most interesting categories for participants, accounting for 275 entries. The ‘archaeological sites’ category also saw a large number of entries compared to the other categories (78).

When entering a site, participants were also asked to provide the reasons for their preference either by selecting a multiple-choice option or by providing a written explanation. These explanations made it possible to gain more insights into locals’ heritage perceptions and preferences. For ‘sites’ associated with ‘emotional’ and ‘heritage’ values (see Table 1), the majority of people mentioned cultural-historical value (36%); the landscape and the view (26%); and the experiences or memories related to those places (20%) as their main reasons for preferring these sites; while the remaining 14% and 3% did so because of peace/tranquillity or other reasons, respectively (cf. Conrad et al., 2011). For ‘sites’ associated with ‘traditions and representations of culture’, participants mentioned the impact they have on the land (38%); a direct bond with the site (21%); the services they offer (17%) and how they promote the local culture (17%) as their main reasons for selecting the site; while 6% gave other reasons.

## Interpretation

In this section, the relevance of the information collected through the questionnaire will be investigated, specifically by focusing on the initial subquestions: Do respondents identify other heritage elements than the official heritage categories? What is behind these differences? To do so, the focus will be on the mapping data for the sites and places favoured by the respondents (questionnaire pages 6 and 7), which will be compared to the official heritage data collected from the regional authorities.<sup>9</sup> For the sake of brevity, the former will be indicated as ‘local heritage perceptions’, while the latter will be called ‘official heritage’.

Figure 4. Graph of the participation trend per page per question and type of question

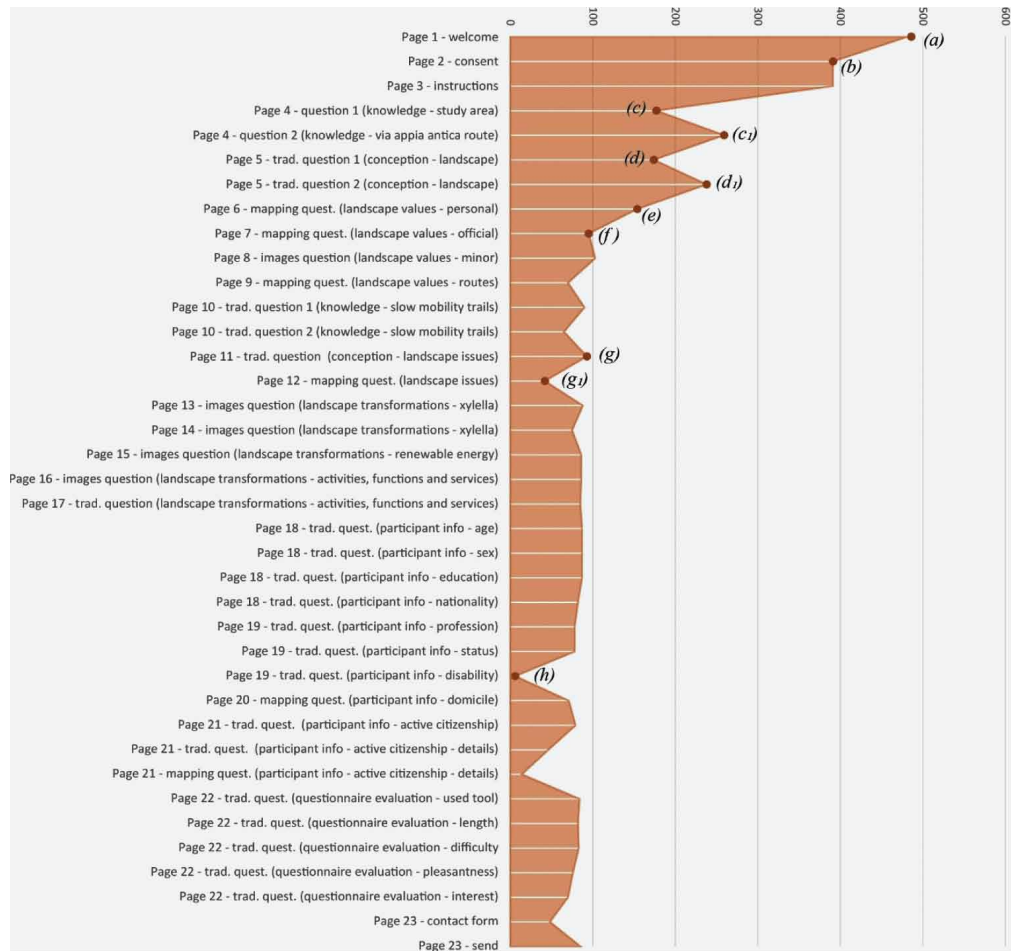


Figure 5 compares the sites identified as local heritage perceptions with the official heritage sites. There are 192 entries in the study area in the former category, composed of 113 ‘places of the heart’ (questionnaire page 6) and 121 sites belonging to other categories (questionnaire page 7), with 42 overlaps. There are 439 official heritage sites in the study area. Figure 6 shows all official and perceived heritage sites, distinguishing between sites that occur in both categories (corresponding) and sites that occur in only one category (noncorresponding). This distinction between corresponding and not corresponding sites was made manually by checking the locations of the sites and the contents (names and descriptions) associated by the respondents to each point on the map.<sup>10</sup>

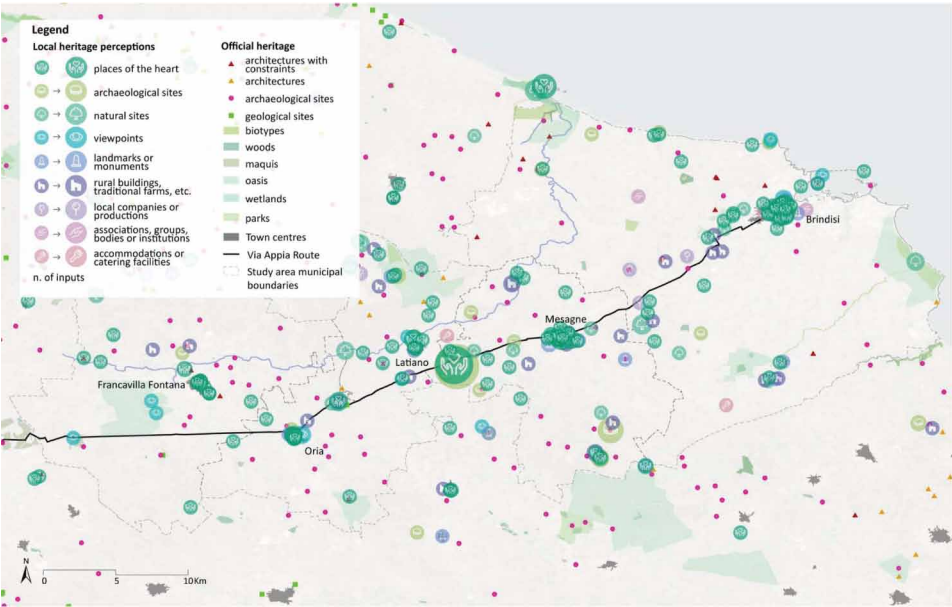
In total, 90 ‘corresponding’ sites were found, that is sites that were both official heritage sites and perceived heritage sites, while participants entered 102 sites that did not feature on the list of official heritage sites, and the official heritage site list featured 349 sites that were not mentioned by participants.

In addition to the points entered on the map, participants were also asked to add a brief description of the sites in question, providing a background for the ‘places of the heart’ and additional information on the other sites’ categories. After checking these descriptions, it became clear that the questionnaire’s categories (archaeological sites, natural sites, viewpoints, landmarks or monuments,

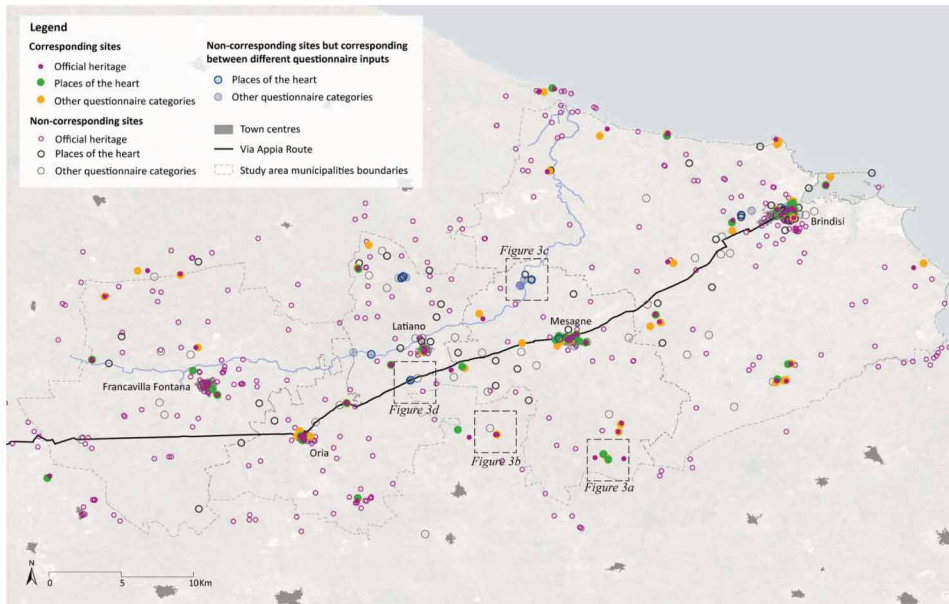
Table 1. Type and number of map entries for category

Type of map entry	Page	Associated values	Categories	Number of entries
Sites (points)	6	Emotional	Places of the heart	275
	7	Heritage	Archaeological sites	78
			Natural sites	40
			Viewpoints	27
			Landmarks or monuments	39
			Rural buildings, trad. farms, etc.	30
	7	Traditions and representations of culture	Local companies or productions	7
			Associations, groups, bodies, or institutions	11
			Accommodations or catering facilities	6
Routes (lines)	9	Emotional	Favourite paths	99
Areas (polygons)	12	Issues	Critical areas	35
			Areas to be enhanced	33
—	23	—	<b>Total</b>	<b>680</b>

Figure 5. Locals' heritage sites mapped through the questionnaire compared with the official heritage sites mapped by the regional authorities



**Figure 6. Correspondences and noncorrespondences map between participants' heritage perceptions and the official heritage mapped by the regional authorities**



and rural buildings, traditional farms, etc.) were not always representative of the sites mentioned by participants. For instance, several entries labelled as natural sites actually referred to large sections of landscape, such as the *contrade* (a local, territorial district division) or landscape roads. For instance, one participant mentioned: ‘Oaks Boulevard, in the *contrada* of Caposchiavo. A beautiful street lined with old dry-stone walls and planted with different species of oak trees and Mediterranean scrub’. After checking all the comments, it appeared that participants’ perception of heritage often went beyond specific sites.

For this reason, and in order to effectively compare the nature of the local heritage perceptions with the official heritage sites, the participants’ entries were recategorised. The categories were retained wherever possible, but ‘places of the heart’ was expanded with new object categories in order to investigate the overall scope of the entries submitted by locals. Seven official heritage ‘object categories’ were used as starting points, namely: architecture and archaeological sites, natural sites, viewpoints, geological sites, city districts, panoramic and landscape roads, and landscape portions.<sup>11</sup> It proved possible to fit all participants’ entries into those seven object categories.

Several practical examples will now be discussed to showcase how entries were recategorised. Labelling an entry as a ‘place of the heart’, one participant wrote: ‘the Porta Reale (the Royal Gate), at the end of the Via Appia. This is the true end of the Via Appia where the remains of the Porta Reale were found’. In this case, the site identified is an official heritage site (the medieval gate of the city) and the place of the heart was therefore recategorised as ‘architecture’ ‘coinciding’ with the official maps. Another participant labelled ‘the vineyard landscape of the Brindisi coast’ as a ‘natural site’. In this case, the official maps do not recognise any landscape value on the Brindisi coast, and the participant’s description did not match the category used. This place was therefore recategorised as ‘landscape portion’ ‘not coinciding’ with the official maps. Proceeding in this way and checking all the participants’ entries, the recategorised results are shown and compared with the official heritage data in Tables 2a and 2b (while in the Appendix - Table 4 the recategorised entries are shown by keeping the ‘places of the heart’ separate from the other ‘site’ categories).

**Table 2a. Official heritage sites identified and not identified by participants**

Object categories	Official heritage sites identified by participants		Official heritage sites NOT identified by participants
	Number of sites	Number of mentions <sup>d</sup>	Number of sites
1. Architecture and archaeological sites	75	179	247
2. Natural sites	13	34	69
3. Viewpoints	1	4	0
4. Geological sites /cave-farm	2	2	8
5. City districts	13	41	0
6. Panoramic and landscape roads <sup>a</sup>	0	0	25
7. Landscape portions	0	0	0
8. NA <sup>b</sup>	12	12	0
<b>Total</b>	<b>116</b>	<b>272</b>	<b>349</b>
Number of sites mentioned in more than one category <sup>c</sup>	-26	161	<b>0</b>
Total excluding overlaying places	<b>90</b>	<b>272</b>	<b>349</b>

Note: See notes below Table 2b.

The maps and the tables presented here demonstrate that of all local heritage perceptions mapped by participants, only 90/192 (47%) correspond to the official heritage sites mapped by the regional authorities. Conversely, the remaining 102/192 (53%) local heritage perceptions do not figure on the official heritage maps, and a large number of official heritage sites (349) were not mapped by the local population. A further observation is that, in contrast with the official mapping, where every site is associated with a single heritage value, several points in the maps drawn up by participants have more than one reported value (42 sites associated with 193 mentions). Among these, a distinction can be made between those that correspond (26) and those that do not correspond (16) to the official heritage sites.

At first sight, the much higher number of official heritage sites may be taken to indicate that the expert maps were much more precise than the maps drawn up by participants. This is probably true, as expert mapping takes place under conditions that facilitate ‘completeness’, for example, factors such as time and resources. While it takes years of work and research to create official maps, this questionnaire only ran for a few weeks. However, another factor must also be considered: experts and administrators only mapped what the authorities of the field define as heritage, following a formal heritage canon. The questionnaire, on the other hand, yielded information outside this canon, which participants nevertheless consider part of their local legacy.

Specifically, Table 2a illustrates that identified official heritage sites are higher for ‘architecture and archaeological sites’ (75/90) than any other object category, which is also emphasised by a high number of mentions (179). More generally, a significant number of reports is associated with the identified official heritage sites (272/90). However, the table also shows a relevant number of unidentified official ‘architecture and archaeological sites’ (247), ‘natural sites’ (69), and ‘panoramic and landscape roads’ (25). Among the recognised ‘architecture and archaeological sites’, there were several castles, museums, city gates, *masserie* farms, remains, excavations, churches, towers, and other monuments; while several woods, natural reserves, parks, and Sites of Community Importance (SCIs) and Special Protection Areas (SPAs) were included in the ‘natural sites’ category. The ‘viewpoints’

**Table 2b. Heritage sites identified by participants that are not official heritage sites**

Object categories	Heritage sites identified by participants that are NOT official heritage sites	
	Number of sites	Number of mentions <sup>d</sup>
1. Architecture and archaeological sites	12	32
2. Natural sites	11	22
3. Viewpoints	10	13
4. Geological sites / cave-farm	1	1
5. City districts	8	31
6. Panoramic and landscape roads <sup>a</sup>	4	4
7. Landscape portions	11	11
8. NA <sup>b</sup>	24	24
9. Local associations <sup>c</sup>	9	9
10. Local productions <sup>c</sup>	6	6
11. Hospitality structures <sup>c</sup>	5	5
<b>Total</b>	<b>118</b>	<b>158</b>
Number of sites indicated in more than one category <sup>c</sup>	-16	32
<b>Total excluding overlaying places</b>	<b>102</b>	<b>158</b>

<sup>a</sup>For a more accurate analysis of corresponding and noncorresponding routes, the data from the participants' 'favourites routes' category should be included in the analysis and the planned or existing routes from the local authorities. In this article, the authors chose to present and consider only the heritage site data for lack of additional space to elaborate on the additional data mentioned.

<sup>b</sup>In NA, there are some sites that coincided (or did not coincide) with geo-locations on the map but with no information or descriptions added by the participants. So, because the researchers do not know what they intended to indicate exactly, they have been classified as NA.

<sup>c</sup>As noted before in the text, several points mentioned by the participants have more than one value (total 42). Among these, 26 are among the official heritage sites identified by the participants, and 16 are among the heritage sites identified by the participants that are not official heritage sites.

<sup>d</sup>The number of mentions refers to the number of times a place was mentioned by participants.

<sup>e</sup>In Table 2b, additional object categories have been added (nos. 8–11) due to the supplementary information collected through the questionnaire.

category included the hill of the town of Oria, and several participants mentioned historic city centres in the 'city districts' category. Thanks to this recategorisation, it was therefore possible to analyse the composition of participants' entries and accurately compare them with the listed official heritage objects. From the higher number of mentions of official heritage sites, one may conclude that the majority of respondents seem to be affected by what is defined as heritage by experts and authorities in the field.

Through the questionnaire, it was also possible to identify a significant number of entries belonging to different object categories. Table 2b breaks down the categories of the local heritage perceptions entered by participants that did not correspond with official heritage sites, with a fairly equal distribution emerging among the different categories. Approximately 12 unofficial places were added in the 'architecture and archaeological sites', 'natural sites', 'viewpoints', 'city districts', 'landscape portions', and 'local associations' categories. The number of mentions shows that 'architecture and archaeological sites' (32), 'natural sites' (22), 'viewpoints' (13), 'city districts' (31), and 'landscape portions' (11) that were not part of the official heritage were particularly relevant. The noncorresponding sites in the 'architecture and archaeological sites' category consisted of a tower, some *masserie*, *neviere*,<sup>12</sup> a building complex, some other rural buildings, and several *specchie*.<sup>13</sup> In the 'natural sites' category, participants mentioned different woods, parks, beaches, and several points along the Canale Reale River. In the 'viewpoints' category, they mentioned several views from the

top of monuments and architectural features of different towns and several views from different points in the landscape. In the ‘city districts’ category, participants entered several areas, including squares and different city districts, the Brindisi quay, and cities as a whole, and finally, in the ‘landscape portions’ category, they mentioned several *contrade* and general parts of the rural or agricultural landscape. Through the questionnaire, it was therefore also possible to identify a significant number of entries belonging to different object categories, which indicated sites that were relevant to the local population but had not officially been recognised in the area and identify the differences among these objects in more detail.

## Examples

A few examples of the information that can be retrieved through the questionnaire are shown in Figures 7a, 7b, 7c, and 7d, which will consequently be related to possible planning interpretations and uses. Figure 7a illustrates a case where the location of the official heritage site does not correspond with the local heritage perceptions. However, thanks to the information associated with these points, it was possible to establish a correspondence in their contents; in fact, all entries mention the farm and the remains of the Roman baths of Malvindi. While the regional authorities mapped this entire complex (left) as a single archaeological site, the public mapped several heritage values, namely, the naturalistic and archaeological values related to the remains of the ancient Roman baths (bottom right) and the traditional farmhouse values related to *masseria* Malvindi (top centre). Moreover, it is also recurrently considered a ‘place of the heart’. Thus, the public’s map indicates a much richer set of heritage values than one may deduce from the official mapping.

Another example is the case of the Church of San Pietro di Crepacore and the nearby Galesano Valley, named after the watercourse that runs through it (Figure 7b). The church is a medieval construction recognised for its archaeological and monumental value, both by the authorities and the public. However, further north, a view of the surrounding landscape was also mapped by the inhabitants with the following description: ‘A small country road ends on an embankment along the bank of the stream, with a panoramic view of the valley’. Again, it appears that the public recognised multiple values in the area (a panoramic viewpoint) and gave the overall landscape of the valley heritage value.

A third example is shown in Figure 7c. Here, the public identified three sites that are not represented on the official heritage charts. The sites are located near the town of Mesagne and involve two rural farmhouses, *Masseria Canali* and *Casa Rurale Simoni*. Two associations currently use these farmhouses as a social hub and to produce wine, oil, and other traditional products. In Figure 7c, more than one value is associated with one of the sites (bottom left): a rural farmhouse, a social cooperative, and a local production place; while the other two sites at the top right and at the top centre have been indicated as a ‘place of the heart’, denoting, respectively, the other farmhouse and the river that flows between the two. This example also highlights how social, productive, rural, and natural aspects associated with local traditions and history are valued by the locals. In fact, *Masseria Canali* is a plot of land that was confiscated from the Apulian Mafia, which now hosts a social cooperative that addresses the issue of legality, fights crime, and organises recreational and cultural activities for adults and children. *Casa Rurale Simoni*, on the other hand, organises rural experiences, combining traditional agriculture and culture in social activities. Furthermore, the *Canale Reale* entry also shows that the locals have a deep emotional connection with this river, which goes beyond the official maps’ identification as a natural feature.

The last example (Figure 7d) shows an area where participants recall the traditional rural districts (*contrade*), the overall landscape, and the old Mesagne-Oria Road. None of these landscape portions or roads are mapped as heritage by the authorities. Among the comments associated with these points, there are historical and cultural references to the area’s agricultural tradition, such as: ‘*Contrada Viscigli* or *Contrada Squartati*’ where it is assumed, from the name, that a battle took place between the Romans and the Messapians’ or ‘Vast flat area with beautiful blooming trees in the spring’ and also ‘Old Road Mesagne-Oria for its ancient farmhouses and monumental olive trees’.



Figure 7. (a) Example of correspondence with the official mapping: Masseria and Roman baths of Malvindi, South of Mesagne. (b) Example of coincident and noncoincident heritage perceptions, Crepacore church, and Galesano Valley, south between the municipalities of Mesagne and Latiano. (c) Example of mismatch with official mapping: Masseria Canali, Casa Rurale Simoni, and Canale Reale, north of Mesagne. (d) Example of heritage perceptions that do not coincide with the official ones, Old Road Mesagne-Oria, south of Latiano.



These annotations underline the landscape portions' and route's historical and cultural value, and the relevance of their visual experience for the population.

## Disaggregation

This section analyses the disaggregated map entries broken down by social group. To this end, the map entries were linked to the participants' age, sex, education level, profession, and role in the community. Special attention was paid to the distinction between 'emotional', 'heritage', and 'traditions and representations of cultural values' (as the map entry categories were grouped in Table 1). As personal information was asked at the very end of the survey, and only 22% of the participants provided their personal details, the results of this analysis may differ from the overall breakdown of participants.

Content-wise (Table 3), participants of all ages (18–over 65s) inserted a similar number of 'emotional' and 'heritage' map entries. However, younger participants provided almost no input belonging to the 'traditions and representations of culture' category. In all three categories, the overall participation of and the total number of entries made by women was very limited compared to the male population. With regard to the level of education, a higher number of respondents had a university degree, as reflected in the number of entries made by this subgroup in the 'emotional', 'heritage', and 'traditions and representations of culture' categories.

In the disaggregation, special attention was also paid to the entries made by representatives of associations, institutions, and other local stakeholders. Although the questionnaire was disseminated mainly through social media and emails involving local stakeholders, only ten registered as participants. A higher number of participants mentioned playing an active role in the community. Table 3 shows the distribution linked to respondents and their role in the community. The analysis shows that the number of map entries made by active citizens belonging to the ‘places of the heart’ category was similar to the number of entries made by nonactive community members (respectively, 21% and 28%). For all other categories, however, active community members suggested many more map entries than their nonactive counterparts (48% and 93%) (Table 3).

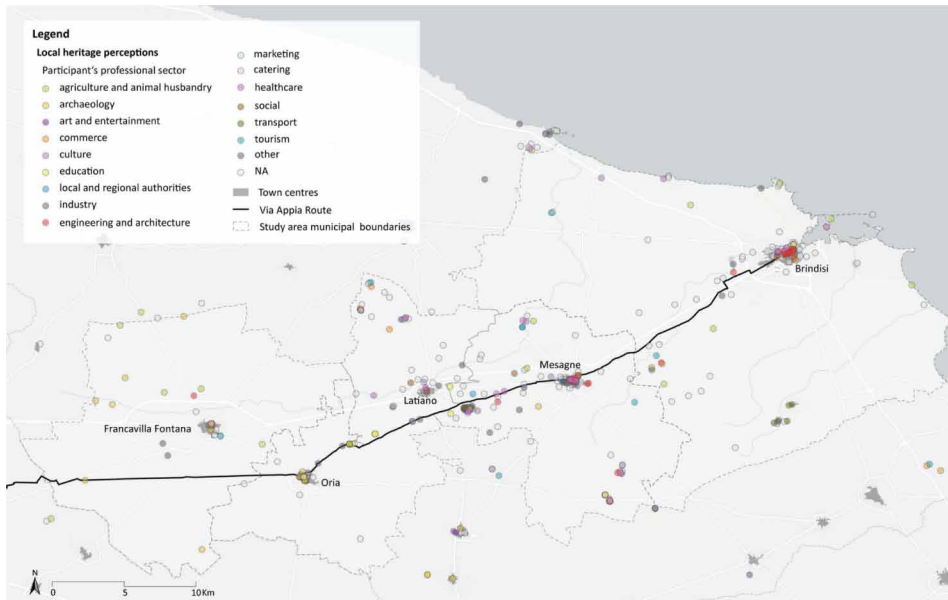
Figure 8 shows the spatial distribution of map entries according to the professional backgrounds of participants. Looking at the map entries grouped by the professional sector of the respondents who added them (Figure 8), it can be seen that there is a correlation between the professional sector and the location of the entries. What stands out is how entries made by engineers and architects—who

**Table 3. Number of map entries in the study area broken down by participant groups, values, and categories**

Participant's information				Number and (%) of map entries divided by associated values and categories	
Group	Subgroup	Number and (%) of respondents (total 391 participants)	Emotional (total 275 map entries) • Places of the heart	Heritage (total 214 map entries) • Archaeological sites • Natural sites • Viewpoints • Landmarks or monuments • Rural buildings, trad. farms, etc.	Traditions and representations of culture (total 24 map entries) • Local companies or productions • Associations, groups, bodies, or institutions • Accommodations or catering facilities
Age	18–34	22 (6)	49 (18)	58 (27)	1 (4)
	35–54	40 (10)	68 (25)	46 (31)	8 (33)
	55–over 65	25 (6)	41 (15)	56(26)	9 (38)
	NA	304 (78)	117 (43)	54 (25)	6 (25)
Sex	Woman	30 (8)	32 (12)	50 (23)	4 (17)
	Man	55 (14)	121 (44)	108 (50)	14 (58)
	Prefer not to specify	2 (1)	5 (2)	2 (1)	0
	NA	304 (78)	117 (43)	54 (25)	6 (25)
Education level	Secondary school	1 (0)	1 (0)	5 (2)	0
	High school or professional school	21 (5)	23 (8)	42 (20)	2 (8)
	University	49 (13)	96 (35)	96 (45)	11 (46)
	Doctorate	15 (4)	37 (13)	16 (7)	4 (17)
	Other	1 (0)	1 (0)	1 (0)	1 (4)
	NA	304 (78)	117 (43)	54 (25)	6 (25)
Active citizenship	Active citizen	48 (12)	57 (21)	102 (48)	16 (67)
	Nonactive citizen	31 (8)	78 (28)	43 (20)	2 (8)
	NA	312 (80)	140 (51)	68 (32)	6 (25)

Note: The data presented in this table may differ from the data presented in the section ‘Engagement and Participation’. In the latter section, the breakdown of participants is analysed based on the respondents who completed the questionnaire in full and filled in their personal information (85). In Table 3, the breakdown of respondents is based on all participants who made map entries (381), including those who did not fill in their personal information (NA).

Figure 8. Local heritage perceptions represented by the professional sector of respondents



participated in greater numbers (4%) — were situated mainly around urban centres, while the inputs of archaeologists and farmers, for instance, who made up 3% of the respondents, are much more spread across the landscape. For other professional sectors, such as the social, education, art, and cultural sectors, the entries are frequently related to professional relationships with the places indicated.

Similar maps were made linking age, sex, and education to the spatial pattern of the map entries. However, no clear patterns could be found.

## Use for Planning

The results of the Maptionnaire survey can offer planners and local administrators a tool for spatial development strategies. For instance, this data can help identify the best-known or most perceived heritage sites by different groups of the population and, on the other hand, the least known or perceived ones. In this sense, the data can help decide which sites to enhance or better connect because people prefer them; or which sites to enhance and promote more because they are not known or experienced by locals, despite their historical-cultural or natural value. Consequently, planners and local administrators can determine the most appropriate strategies, communication, or territorial connections, and additionally, which target groups should be addressed or stakeholder groups could be more interested in being engaged.

Current planning strategies in the study area aim to develop slow tourism. From the examples presented above, several scenarios can be drawn, taking local heritage perceptions into consideration. In the first example (Figure 7a), the questionnaire entries could be used to stimulate slow tourism by connecting the two sites of the farm and the remains of the Roman baths of Malvindi with an experiential cycling/walking route immersed in the traditional rural landscape. Along this route, tourists and residents could taste traditional products of the traditional farmhouse, such as oil and wine, and then explore the historical and natural aspects of the spring and the remains. Similarly, in the second example (Figure 7b), the questionnaire entries could help to create a slow mobility route to the Church of Crepacore's archaeological site and, at the suggested viewpoint, a resting area or a watching point that offers a view over the Galesano Valley. In the third example (Figure 7c), the information collected through the questionnaire could be used to create an informative cycling/

walking route related to the area's recent history, connecting the two rural houses of Masseria Canali and Casa Rurale Simoni with Mesagne City Centre. This slow mobility route could, for instance, feature informative signs about the city's fight against local organised crime and offer tourists and citizens the chance to experience the cultural activities and productions of the two farmhouses. Analogously, in the case of the Old Road Mesagne-Oria (Figure 7d), it appears almost evident that creating a walking or cycling route in this context would be much more appreciated than a route—as it is planned currently—along the coplanar of the busy road Strada Statale 7 (SS7).

Even though the questionnaire results have not been used in actual planning yet, six interviews have been conducted with planners and administrators at the national, regional, and local levels<sup>14</sup> in order to evaluate the questionnaire results and their possible uses for planning. The interviewees evaluated the data collected as very relevant and even essential to integrate locals' knowledge into the planning practice. Especially, the interviewees highlighted the relevance of the following:

- The collection and representation as mapping information that is not available from other sources;
- The awareness of the values embedded and spread throughout the region that the resulting map representation creates for the community.

According to them, these results could be used as starting information for planning decisions. Especially for:

- Identifying valorisation strategies based on what is most or least known and appreciated, and accordingly deciding where to invest funding;
- Integrating new heritage and landscape values in the protection system;
- Involving the community in the management of these common goods.

However, the interviewees also recognised that further elaboration of the data would be required to use them for planning, as well as a larger sample or the reiteration of the process allowing for a comprehensive representation of the community values.

## CONCLUSION

Answering the initial question of this paper, the authors believe that this study showed how a map-based questionnaire is an effective tool to map local heritage perceptions and use them to plan cultural landscapes. The tool made it possible to engage with a wide range of participants of different ages, sexes, educational levels, and backgrounds, and collect a high and diverse number of map entries. Of these entries, the reasons behind participants' preferences were established, and relevant information about what local communities perceive as their cultural heritage was brought to the fore, with additional sites and values added to the official heritage lists.

From the higher number of reports related to official heritage sites, one may conclude that the majority of respondents seem to be affected by what is defined as heritage by experts and authorities in the field. This also coincides with Smith's (2006) observation that the official, expert definitions of heritage tend to dominate peoples' heritage perceptions. However, through the questionnaire, it was also possible to identify a significant number of entries in different object categories, which indicated relevant sites for the local population not officially recognised in the area. Examples are viewpoints, city districts, rural roads, and landscape portions. Comments added to the map entries made it possible to identify the differences among these objects in more detail. Using practical examples, it was shown how the survey results can be used to support planning. As the results can help to identify the best and least known or perceived heritage sites to the public, they can help to decide which ones to enhance or better connect, or to enhance and promote more, because

they are not known or experienced by citizens, despite their historical-cultural or natural value. Consequently, planners and local administrators can determine the most appropriate valorisation strategies, communication, or territorial connections. This was supported by interviews with heritage and planning experts who assessed the questionnaire results' relevance and weakness of their possible use for planning.

Therefore, both from the point of view of heritage and planning, the use of Maptionnaire and, more in general, of PPGIS tools is confirmed as promising, as has been experienced in previous studies. However, some key concerns have also been identified, such as the effective arrangements of public participation, the ability to reach a broad spectrum of people, and the production of high-quality and versatile knowledge (Kahila-Tani et al., 2019). From this case specifically, a few lessons can be learned. First, in future applications, more attention could be dedicated to involve a more complete group of participants. Although the pool of participants was quite diverse, the number was not representative of the entire population at large. Reducing the length of the questionnaire, giving an economic incentive, deploying more resources to distribute it in a more targeted and widespread manner, or running it for a longer period may help to reach a broader public. Second, although local authorities were involved from the very beginning of the process, sharing results proved to be difficult. For this reason, in studies that are independent of local boards and offices, it is recommended to constantly interact with local authorities and include a data 'handover' phase in order to make them available for local spatial planners and policymakers. A final observation is that to have truly meaningful and representative data over time, the questionnaire data should be kept accessible and updated. The methods to do this could be different: for instance, the mapping results could be kept open to integrations through a website, or the questionnaire could be repeated several times over the years. Anyhow, it appears essential to constantly integrate and periodically update local heritage perceptions since locals can change or shift their perspectives. Additionally, in any participatory mapping process, special attention should be paid to involving the local stakeholders. This proves to be decisive in spreading the questionnaire and integrating their inputs, which is crucial in any participatory planning activity.

In this article, only part of the data collected through the questionnaire have been analysed in depth, notably on heritage sites. Less attention was paid to other information collected through the survey—such as favourite paths, landscape transformations, and landscape issues which relate to current challenges and planning perspective for the landscape of the area. The latter were also analysed during the participatory workshops organised in a later phase of this research. During the workshops, citizens, experts, and other stakeholders were asked to start from the questionnaire results to identify strategic sites and paths to develop slow tourism and sustainable development plans relating to the area's current challenges and opportunities. Another map-based tool was used for the workshops, allowing participants to draw and submit their entries.

To conclude, with space for improvements, this tool can contribute to local knowledge and multivocal representation and put into practice the principles of the European Landscape Convention (2000) by facilitating participation and the involvement of the local population in the definition and planning of cultural landscapes. In fact, answers such as those collected in the Apulian region show the potential of including local heritage perceptions to define the cultural landscape. Also, they confirm the value of everyday landscapes and the importance of seeing heritage not only as a set of assets to be safeguarded but also as places to be lived and experienced. In this, planning must not find only the best way to preserve but precisely the best way to develop and enhance these places and encourage their use for present needs without neglecting their protection and transmission to future generations. For instance, in the case of the Via Appia Route, this is not only relevant from a historical and monumental point of view, but it is important also because of the deep, meaningful relationship it has with its inhabitants.

## **ACKNOWLEDGMENT**

This research is part of a Ph.D. research funded by the European Innovative Training Networks project Heriland (<https://www.heriland.eu/>). Heriland is a pan-European research and training network on cultural heritage in relation to spatial planning and design. It is funded by the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement no. 813883.

## REFERENCES

- Albrechts, L., Barbanente, A., & Monno, V. (2020). Practicing transformative planning: The territory-landscape plan as a catalyst for change. *City. Territory and Architecture*, 7(1), 1. Advance online publication. doi:10.1186/s40410-019-0111-2
- Álvarez Larrain, A., & McCall, M. K. (2019). Participatory mapping and participatory gis for historical and archaeological landscape studies: A critical review. *Journal of Archaeological Method and Theory*, 26(2), 643–678. doi:10.1007/s10816-018-9385-z
- Auclair, E., & Fairclough, G. J. (Eds.). (2015). *Theory and practice in heritage and sustainability: Between past and future*. Routledge, Taylor & Francis Group.
- Bandarin, F., & van Oers, R. (2012). *The historic urban landscape: Managing heritage in an urban century*. Wiley-Blackwell. doi:10.1002/9781119968115
- Bloemers, T., Kars, H., & van, D. V. A. (Eds.). (2010). *Cultural landscape & heritage paradox: Protection and development of the Dutch archaeological-historical landscape and its European dimension*. Amsterdam University Press.
- Brown, G., & Kyttä, M. (2014). Key issues and research priorities for public participation GIS (PPGIS): A synthesis based on empirical research. *Applied Geography (Sevenoaks, England)*, 46, 122–136. doi:10.1016/j.apgeog.2013.11.004
- Brown, G., Reed, P., & Raymond, C. M. (2020). Mapping place values: 10 lessons from two decades of public participation GIS empirical research. *Applied Geography (Sevenoaks, England)*, 116, 102156. Advance online publication. doi:10.1016/j.apgeog.2020.102156
- Clark, T., Foster, L., Sloan, L., Bryman, A., & Bryman, A. (2021). *Bryman's social research methods* (6th ed.). Oxford University Press.
- Conrad, E., Cassar, L. F., Christie, M., & Fazey, I. (2011). Hearing but not listening? A participatory assessment of public participation in planning. *Environment and Planning. C, Government & Policy*, 29(5), 761–782. doi:10.1068/c10137
- Cooke, B., & Kothari, U. (Eds.). (2001). *Participation the new tyranny?* Zed Books.
- Corten, J.-P., Geurts, E., Meurs, P., & Vermeulen, R. (Eds.). (2014). *Heritage as an asset for inner-city development: An urban manager's guidebook* (W. van Os-Thompson, Trans.). Nai010.
- Cosgrove, D., & Cosgrove, D. (1984). *Social formation and symbolic landscape*. Croom Helm.
- Council of Europe. (2000). *European Landscape Convention*. Council of Europe Publishing. <https://rm.coe.int/16807b6bc7>
- Council of Europe. (2005). *Framework convention on the value of cultural heritage for society*. Council of Europe Publishing.
- Ducci, M., Janssen, R., Burgers, G. J., & Rotondo, F. (submitted). Co-design workshops for cultural landscape planning. *Landscape Research*.
- Fairclough, G. J., & Møller, P. G. (2008). *Landscape as heritage: The management and protection of landscape in Europe, a summary by the cost a27 project "landmarks"*. University of Berne, Institute of Geography.
- Gandarillas, M. A., & McCall, M. K. (2021). Ecocultural networks as grounds for spatial planning. A psychosocial approach applied to coastal development. *Journal of Cultural Heritage Management and Sustainable Development*, 12. <https://www-emerald-com.vu-nl.idm.oclc.org/insight/content/doi/10.1108/JCHMSD-01-2021-0008/full/html>
- Garcia-Martin, M., Fagerholm, N., Bieling, C., Gounaridis, D., Kizos, T., Printsmann, A., Müller, M., Lieskovský, J., & Plieninger, T. (2017). Participatory mapping of landscape values in a pan-European perspective. *Landscape Ecology*, 32(11), 2133–2150. doi:10.1007/s10980-017-0531-x
- Gottwald, S., Brenner, J., Albert, C., & Janssen, R. (2021). Integrating sense of place into participatory landscape planning: Merging mapping surveys and geodesign workshops. *Landscape Research*, 46(8), 1041–1056. doi:10.1080/01426397.2021.1939288



- Grasseni, C. (2012). Community mapping as auto-ethno-cartography. In S. Pink (Ed.), *Advances in visual methodology* (pp. 97–112). SAGE Publications Ltd. doi:10.4135/9781446250921.n6
- Janssen, J., Luiten, E., Renes, H., & Stegmeijer, E. (2017). Heritage as sector, factor and vector: Conceptualising the shifting relationship between heritage management and spatial planning. *European Planning Studies*, 25(9), 1654–1672. doi:10.1080/09654313.2017.1329410
- Kahila, M., & Broberg, A. (2017, May 29–June 2). *Making cities wiser - Crowdsourcing for better decisions* [Paper presentation]. Fédération Internationale des Géomètres (FIG) Working Week 2017 Surveying the World of Tomorrow - From Digitalisation to Augmented Reality, Helsinki, Finland. [https://www.fig.net/resources/proceedings/fig\\_proceedings/fig2017/papers/ts05h/TS05H\\_kahila\\_broberg\\_8847.pdf](https://www.fig.net/resources/proceedings/fig_proceedings/fig2017/papers/ts05h/TS05H_kahila_broberg_8847.pdf)
- Kahila-Tani, M., Kytta, M., & Geertman, S. (2019). Does mapping improve public participation? Exploring the pros and cons of using public participation GIS in urban planning practices. *Landscape and Urban Planning*, 186, 45–55. doi:10.1016/j.landurbplan.2019.02.019
- Lavrakas, P. J. (Ed.). (2008). *Encyclopedia of survey research methods*. SAGE Publications.
- Magnaghi, A. (2005). *The urban village: A charter for democracy and local self-sustainable development*. Zed Books.
- Magnaghi, A. (2003). *Le projet local*. P. Mardaga.
- Maptionnaire. (2021). *Maptionnaire 2.0 Demos*. <https://new.maptionnaire.com/g/92ixx8wyp2bl>
- Maptionnaire. (2022a). *Customer stories*. <https://maptionnaire.com/customer-stories>
- Maptionnaire. (2022b). *7 Best practices of survey design to boost your public participation*. <https://maptionnaire.com/blog-list/7-best-practices-of-survey-design-for-public-participation>
- McCall, M. K. (2021). Participatory mapping and PGIS: Secerning facts and values, representation and representativity. *International Journal of E-Planning Research*, 10(3), 105–123. doi:10.4018/IJEPR.20210701.0a7
- Muñoz Viñas, S. (2005). *Contemporary theory of conservation*. Elsevier.
- Nanz, P., & Fritzsche, M. (2014). *La partecipazione dei cittadini: Un manuale. Metodi partecipativi: Protagonisti, opportunità e limiti* [Citizen participation: A handbook. Participatory methods: Protagonists, opportunities and limits]. Assemblée legislativa della Regione Emilia-Romagna.
- Nikula, A., Turunen, M., Bogadóttir, R., Markkula, I., Kantola, S., & McDonagh, J. (2020). PPGIS for a better understanding of peoples values: Experiences from Finland and the Faroe Islands. In *Sharing knowledge for land use management: Decision-making and expertise in Europe's northern periphery* (pp. 70–85). Edward Elgar Publishing. doi:10.4337/9781789901894.00013
- Porceddu, M. (2012). *Valutazione dello stato della pianificazione paesaggistica in Italia: Criticità e prospettive* [Doctoral dissertation]. Università degli Studi di Cagliari. Italia. <https://core.ac.uk/download/pdf/35315583.pdf>
- Regione Puglia. (2015). *Relazione Generale* [General Report]. Piano Paesaggistico Territoriale Regionale. [http://paesaggio.regione.puglia.it/PPTR\\_2015/1\\_Relazione%20Generale/01\\_Relazione%20Generale.pdf](http://paesaggio.regione.puglia.it/PPTR_2015/1_Relazione%20Generale/01_Relazione%20Generale.pdf)
- Regione Puglia. (2022). *Regione Puglia*. Piano Paesaggistico Territoriale – PPTR. Principi e finalità. [http://www.sit.puglia.it/portal/portale\\_pianificazione\\_regionale/Piano%20Paesaggistico%20Territoriale](http://www.sit.puglia.it/portal/portale_pianificazione_regionale/Piano%20Paesaggistico%20Territoriale)
- Rotondo, F., & Selicato, F. (2011). E-democracy in collaborative planning: A critical review. In B. Murgante, O. Gervasi, A. Iglesias, D. Taniar, & B. O. Apduhan (Eds.), *Lecture notes in computer science: Vol. 6783. Computational science and its applications - ICCSA 2011. ICCSA 2011* (pp. 199–209). Springer. doi:10.1007/978-3-642-21887-3\_16
- Rotondo, F., Selicato, F., Marin, V., & Galdeano, J. L. (Eds.). (2016). *Cultural territorial systems: Landscape and cultural heritage as a key to sustainable and local development in eastern Europe*. Springer. doi:10.1007/978-3-319-20753-7
- Ryan, R. L. (2011). The social landscape of planning: Integrating social and perceptual research with spatial planning information. *Landscape and Urban Planning*, 100(4), 361–363. doi:10.1016/j.landurbplan.2011.01.015

- Rzeszewski, M., & Kotus, J. (2019). Usability and usefulness of internet mapping platforms in participatory spatial planning. *Applied Geography (Sevenoaks, England)*, 103, 56–69. doi:10.1016/j.apgeog.2019.01.001
- Settis, S. (2013). *Il Paesaggio come bene comune* [Landscape as a common good]. La scuola di Pitagora editrice.
- Sieber, R. (2006). Public participation geographic information systems: A literature review and framework. *Annals of the Association of American Geographers*, 96(3), 491–507. doi:10.1111/j.1467-8306.2006.00702.x
- Smith, L. (2006). *Uses of heritage*. Routledge, Taylor & Francis Group.
- Spanu, V., Lorrai, E., Muscas, L., & Demontis, R. (2017). Nurnet-geoportal. *Archeomatica International*, 8(3), 26–29.
- Steinitz, C. (2012). A framework for geodesign: Changing geography by design. Esri.
- Torquati, B., Vizzari, M., & Sportolaro, C. (2011). Participatory GIS for integrating local and expert knowledge in landscape planning. In *Agricultural and environmental informatics, governance and management* (pp. 378–396). IGI Global. doi:10.4018/978-1-60960-621-3.ch020
- Turner, M. (2011, December 8–9). *The heritage of the city. Europe's future: New opportunities through integrated urban development* [Conference presentation]. Federal Ministry of Transport, Building and Urban Development International Congress 2011, Berlin, Germany.
- UNESCO. (1972). *Convention concerning the protection of the world cultural and natural heritage*. UNESCO. <https://whc.unesco.org/archive/convention-en.pdf>
- UNESCO. (2003). *Convention for the safeguarding of the intangible cultural heritage*. UNESCO. <https://ich.unesco.org/doc/src/01852-EN.pdf>
- UNESCO. (2008). *Operational guidelines for the implementation of the world heritage convention*. Intergovernmental Committee for the Protection of the World Cultural and Natural Heritage. World Heritage Centre. <https://whc.unesco.org/archive/opguide08-en.pdf>
- UNESCO. (2011). *Recommendation on the historic urban landscape*. UNESCO. <https://whc.unesco.org/uploads/activities/documents/activity-638-98.pdf>
- Van Oers, R., & Pereira Roders, A. (2014). Aligning agendas for sustainable development in the post 2015 world. *Journal of Cultural Heritage Management and Sustainable Development*, 4(2), 122–132. doi:10.1108/JCHMSD-09-2014-0035
- Veldpaus, L., Pereira Roders, A. R., & Colenbrander, B. J. F. (2013). Urban heritage: Putting the past into the future. *The Historic Environment: Policy & Practice*, 4(1), 3–18. 10.1179/1756750513Z.00000000022
- Waterton, E., & Watson, S. (Eds.). (2015). *The Palgrave handbook of contemporary heritage research*. Palgrave Macmillan. doi:10.1057/9781137293565

## ENDNOTES

- <sup>1</sup> <https://new.maptionnaire.com/>
- <sup>2</sup> One of these projects is that focusing on the last stretch of the ancient Via Appia Route in the province of Brindisi, coordinated by a citizen association called Ecomuseo della Via Appia, which is sustained by a series of municipalities, the Regional Heritage Board and the Universities of Salento and Vrije Universiteit of Amsterdam.
- <sup>3</sup> The Apulia Regional Territorial Landscape Plan (PPTR) pursues the aims of protection and enhancement, as well as recovery and redevelopment of the landscapes of Apulia. The PPTR pursues, in particular, the promotion and realisation of self-sustainable and durable socioeconomic development and conscious use of the regional territory, including through the preservation and recovery of the aspects and peculiar characters of social, cultural, and environmental identity, the protection of biodiversity, and the realisation of new integrated landscape values, consistent with and responding to criteria of quality and sustainability (Regione Puglia, 2022).
- <sup>4</sup> <https://new.maptionnaire.com/>

- 5 Other applications available at the time (November 2020) have been evaluated, such as ArcGIS Survey and Qualtrics. Maptionnaire was considered the most appropriate for our case study for the user-friendly interface and in the possibilities of development and customisation (e.g. number and type of possible questions). A point in favour was certainly the great flexibility in the type of questions and interactions possible with maps and images (draw, evaluate, select, consult, upload audio and video, etc.). It should be noted that none of the applications available on the market (at the time of the creation of the questionnaire, January 2021) were open source. All existing applications at the time required a license. To date (October 2021), there are other similar applications being developed, such as Maplix, KoBoCollect, or QuestionPro. Of these, KoBoCollect is the only one found that is open source.
- 6 <https://heriland4appia.wordpress.com/>
- 7 Have been involved in the project: the regional heritage and landscape baord (*Soprintendenza per i Beni Culturali ed il Paesaggio*), other local universities (*Università di Lecce* and *Politecnico di Bari*), and local associations (e.g. *Impact Archaeologic Cooperative*, *Cicloamici*, *Libera Terra*, etc.)
- 8 A comma-separated values (CSVs) file typically stores tabular data (numbers and text) in plain text and is compatible with GIS applications. Each line of the file is a data record, and each record consists of one or more fields separated by commas.
- 9 The 'official heritage' data set was created by merging together several layers available on the Regional Informative Territorial System (SIT), an open database created by Apulia Region. The data set appointed together layers of the protection system of the Thematic Territorial Urban Plan (PUTT)—which identifies sites of geological, archaeological, architectural, and natural value subject to landscape protection—with those of the Regional Technical Map (CTR)—which classifies the territory in objective elements, such as in land use, type of building, etc. From the latter data set, the researchers extracted sites identifiable as heritage assets, such as churches, monuments, tabernacles, towers, and castles, but whose historical and cultural value the researchers do not actually know. A minimum level of overlap was identified between these two layers (12 elements in the study area coincide between PUTT and CTR), and their whole was considered as a complete mapping of the heritage of this territory.
- 10 The division between corresponding and not corresponding sites between people's inputs and official heritage sites was made—considering the limited number of inputs—by checking manually the location, name, and descriptions inserted by participants and comparing them with the name and location of the official heritage sites. This process was not based on buffers because the location and distance of most of the inputs did not allow a precise and correct association. Thus, since automatic elaborations would have brought too much error, it was necessary to manually control the qualitative data associated with each site by participants.
- 11 These seven categories have been identified by checking the inputs inserted by participants and reassigning them to objective elements (such as gates, beaches, roads, city districts, etc.). Then the elements identified were assigned to the heritage object categories used by the Landscape Plan of Apulia Region (PPTR) and the Regional Technical Map (CTR). For example, if the input was 'the beach of my childhood', the element considered was the 'beach', which was assigned to 'natural sites'. If the element was 'the city gate of Mesagne', the element considered was the 'gate', and it was assigned to 'architecture and archaeological sites'. If there were categories that would not fit within the official heritage categories, new categories would have been created (e.g. in the case of categories 9, 10, 11). In this way, it was possible to compare the 'places of the heart' with the official heritage. The 'architecture and archaeological sites' is quite a broad category, and it includes: gates, buildings, castles, towers, ruins, churches, etc. In this case, the necessity of keeping it broad was due to many overlaps and the fuzziness of these categories also in the official heritage maps (see Note 9). In order to avoid error, these categories were therefore merged.
- 12 *Neviere* are underground rooms, dug into the ground and covered with stone vaults to store snow and water for dry periods.
- 13 *Specchie* are a typical Messapian construction (4th–3rd century B.C.) made of dry stone; it is uncertain whether they were used as a burial monument or as watchtowers.
- 14 To evaluate the questionnaire results, planners and administrators have been interviewed: two public officers of the Via Appia Antica Archeologic Park of the Ministry of Culture and Tourism, who are involved in the Regina Viarum project, which promotes the valorisation of the whole Via Appia Route at the national level; two planners that work at the regional level in the Apulia Region as professionals and university researchers; two contracted officers that work for the Project Appia 2030 promoted by the Brindisi Municipality and which involves the other four municipalities of our case study area (Mesagne, Latiano, Oria, and Francavilla Fontana) for a territorial valorisation.

## APPENDIX

**Table 4. Composition of the 'places of the heart' and the Other Sites Categories, Divided into Corresponding and Not-corresponding in Relation to the Official Heritage Sites**

Questionnaire sites categories	Types of objects	Participants' entries corresponding with official heritage sites		Participants' entries not corresponding with official heritage sites		Total	
		Number of sites	Number of mentions	Number of sites	Number of mentions	Number of sites	Number of mentions
Places of the heart (page 6)	architecture and archaeological sites	40	109	9	10	49	119
	natural sites	4	13	5	14	9	27
	viewpoints	0	0	0	0	0	0
	geological sites /cave-farm	0	0	0	0	0	0
	city districts	9	22	6	25	15	47
	panoramic and landscape roads	0	0	3	3	3	3
	landscape portions	0	0	5	5	5	5
	NA (not classified data)	9	9	20	20	29	29
	local associations	0	0	2	2	2	2
	local productions	0	0	1	1	1	1
	hospitality structures	0	0	0	0	0	0
	<b>Subtotal</b>	<b>62</b>	<b>153</b>	<b>51</b>	<b>80</b>	<b>113</b>	<b>233</b>
<ul style="list-style-type: none"> <li>• Archaeological sites</li> <li>• Natural sites</li> <li>• Panoramas</li> <li>• Landmarks and monuments</li> <li>• Rural buildings and farms</li> <li>• Local companies or productions</li> <li>• Associations or institutions</li> <li>• Hospitality structures</li> </ul> (page 7)	architecture and archaeological sites	35	70	20	22	55	92
	natural sites	10	22	6	8	16	30
	viewpoints	1	4	10	13	11	17
	geological sites /cave-farm	1	1	1	1	2	2
	city districts	4	19	2	6	6	25
	panoramic and landscape roads	0	0	1	1	1	1
	landscape portions	0	0	6	6	6	6
	NA (not classified data)	3	3	4	4	7	7
	local associations	0	0	7	7	7	7
	local productions	0	0	5	5	5	5
	hospitality structures	0	0	5	5	5	5
	<b>Subtotal</b>	<b>54</b>	<b>119</b>	<b>67</b>	<b>78</b>	<b>121</b>	<b>197</b>
<b>Total</b>		<b>116</b>	<b>272</b>	<b>118</b>	<b>158</b>	<b>234</b>	<b>430</b>
Number of sites indicated in more than one category		26	161	16	32	42	193
<b>Total excluding overlaying places</b>		<b>90</b>	<b>272</b>	<b>102</b>	<b>158</b>	<b>192</b>	<b>430</b>

*Marta Ducci is a PhD student at the Vrije Universiteit in Amsterdam within the European project HERILAND. She graduated in 2016 in Architecture at the University of Ferrara. She has been working on issues of urban regeneration, green infrastructure, slow mobility, risk protection, local and sustainable development, and enhancement of cultural and natural heritage.*

*Ron Janssen is an associate professor at the Department of Spatial Economics at the Vrije Universiteit Amsterdam and a member of the Spatial Information Laboratory (SPINlab). He specialises in decision support for environmental and spatial management. His main research topics are decision analysis, spatial analysis/assessment and space planning and design.*

*Gert-Jan Burgers is a full professor in Heritage and History of Cultural Landscapes and Urban Environments at the Faculty of Humanities of the Vrije Universiteit Amsterdam. He is the director of the inter-faculty research institute CLUE+ and coordinator of the European Project HERILAND. Prior to this, he was director of the Royal Netherlands Institute in Rome (2012-2013) and Head of the Heritage and Ancient Studies departments of the same institute (2006-2013).*

*Francesco Rotondo is an urban planning engineer and associate professor of Urban Planning at the Marche Polytechnic University and president of the National Institute of Urban Planning (INU) Puglia section. He has been the planning officer of several Apulia municipalities, consultant for the Apulia Regional Territorial Landscape Plan, and designer of several municipal urban planning instruments and Strategic Environmental Assessments.*