

Annali del turismo

Anno XI, 2022



**EDIZIONI DI GEOPROGRESS
NOVARA**

Geoprogress, onlus

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EDIZIONI DI GEOPROGRESS (ONLUS)

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Gli *Annali del turismo* sono una serie di volumi, divisi talvolta in più fascicoli, nei quali si pubblicano annualmente i risultati di ricerche sul turismo - sui suoi caratteri, le sue tendenze, i suoi problemi e impatti - e contributi metodologici, nonché riflessioni e proposte sulle politiche per il turismo, a varia scala geografica.

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Prefazione

Nell'edizione 2022 delle Giornate del Turismo, i cui contributi verranno in parte pubblicati nel *GeoProgress Journal* (vol. 10, i.1, 2023) e in parte in questo volume degli Annali del turismo, si è proposto di discutere un tema volutamente ampio: il turismo in rapporto alla sostenibilità, nella convinzione che, al di là delle mode, il progresso del turismo, dei turisti, degli occupati nei servizi turistici e delle comunità delle destinazioni richieda un suo sviluppo sempre più sostenibile (nei suoi impatti ecologico, ecologico e socio-culturale). Il tema verrà riproposto ancora in futuro, declinato però secondo specifici argomenti e questioni.

Come è stato interpretato, questo tema, dai partecipanti al convegno e particolarmente da chi ha proposto un articolo per la pubblicazione in questo fascicolo?

Alcuni, trattano di strumenti e metodi essenziali o utili per analizzare il turismo e orientarlo, se lo si vuole, verso uno sviluppo più sostenibile, e sono certo i benvenuti pur non affrontando questioni strettamente relative alla sostenibilità del turismo, se non marginalmente o di supporto rispetto alle tesi che desideravano sostenere.

Il primo articolo di questo fascicolo affronta l'analisi dei temi dell'ospitalità e dell'accessibilità nell'ambito dei piani di marketing turistico territoriale – piani che sono una parte essenziale dei piani di sviluppo, strategico e operativo, dei territori turistici, una parte integrante, inscindibile dalla pianificazione dell'offerta turistica e del territorio in complesso della destinazione. Esso tratta un tema considerato tanto importante da Geoprogress d'aver assunto la promozione della pianificazione dello sviluppo territoriale tra i suoi obiettivi statutari. Benché consideri soprattutto il marketing, la sua analisi relativa a 4 città, “mostra come l'assenza di piani adeguati pianificazione, o inefficaci in termini di ospitalità e accessibilità, peggiori il posizionamento competitivo delle città nel turismo”.

Un efficace strumento per lo studio anche attuale del turismo, della visione che i turisti hanno di una certa destinazione, suoi servizi e attrazioni, e dei loro desideri e comportamenti, possono essere gli “amateur films, proposti da Pietro Agnoletto per cercare di comprendere alcuni aspetti della storia del turismo e nel caso specifico del turismo di massa quale visto dai vacanzieri dell'Italia del “boom economico”. Gli *amateur films* o, meglio, *gli home films* sono uno strumento simile ai *focus group* impiegati nelle moderne analisi di marketing. E' a questo scopo che da anni Geoprogress propone agli enti locali delle destinazioni, in cui si tengono di anno in anno le Giornate del Turismo, la realizzazione di un Festival del Turista, da affiancare al convegno scientifico. Purtroppo non si sono trovati sinora positivi riscontri, ma lo riproveremo.

Degli altri contributi taluni propongono anch'essi strumenti d'analisi innovativi, collegandoli esplicitamente ai problemi della destinazione studiata e alle soluzioni proposte per sviluppo sostenibile. Tutti hanno in comune la proposta, quale via per la crescita della sostenibilità, di promuovere qualche tipo di turismo che ritengono relativamente sostenibile e adatto alla destinazione; Si tratta, come vedremo, di turismi relativamente nuovi, di nicchia o comunque meno diffusi, all'aria aperta, in aree protette o meno, per la salute e il benessere, largamente basati sulla valorizzazione dei paesaggi rurali e urbani. Frequente è la preoccupazione per le aree periferiche o marginali, come questione di fondo che induce a proporre tali tipi di turismo.

Il digitale ha già cambiato il comportamento dei turisti, l'organizzazione delle imprese e dei territori turistici, come pure i nostri metodi d'analisi, e sempre più li cambierà in prospettiva: è comprensibile, quindi, che vari articoli vi facciano riferimento. Esso è penetrato talmente nelle nostre società e nel turismo da aver creato, almeno sembrerebbe, anche un nuovo tipo di turista: il "Digital Nomad", un lavoratore che certo si deve considerare anche turista quando si sposta in luoghi diversi dalla propria residenza familiare. Su questo fenomeno, crescente e di grande interesse, si focalizza l'attenzione di Livia Jessica Dell'Anna, delineandone i caratteri ed evidenziando le opportunità di sviluppo che i *digital nomads* possono offrire a certe destinazioni.

Elisa Consolandi e Alessandra Ghisalberti propongono il 3D come strumento per politiche di rigenerazione urbana e di miglioramento dei paesaggi, essenziali al fine di un turismo più sostenibile, considerando il caso della valle e del monastero di Astino (Bergamo)

Per un turismo basato sulla valorizzazione di paesaggi rurali, pur proposto in alcuni contributi presentati alle Giornate del turismo, particolarmente per aree marginali -dell'entroterra della penisola come delle maggiori isole italiane – Giampietro Mazza, Nicoletta Varani, Giacomo Zanolin, propongono l'Albergo diffuso non solo quale forma di organizzazione dell'ospitalità, ma al tempo stesso quale attrazione; In base alle loro analisi e riflessioni riguardanti alcune esperienze della Liguria e della Sardegna.

La preoccupazione per le aree marginali è propria anche di chi studia le potenzialità di importanti beni culturali per la crescita del turismo e lo sviluppo locale. È il caso di Casalvecchio Siculo, studiato da Sonia Gambino. Questo borgo medievale, nella città metropolitana di Messina, è uno dei tanti borghi di cui è ricca l'Italia non ancora adeguatamente valorizzato. Avendo ricevuto nel quadro del PNRR – Piano Nazionale di Resistenza e Resilienza – fondi per il turismo e la promozione della cultura dell'area ha un'opportunità senza precedenti per rivitalizzare la propria economia, non per ultimo attraverso nuove esperienze turistiche, al fine di arginare il fenomeno dello spopolamento e recuperare il patrimonio culturale.

Siria Moroso propone lo sviluppo del *Garden tourism*, quale via per il progresso del turismo al Lago d'Orta, permettendo la riduzione della forte stagionalità - il contrasto tra il grave sovraffollamento estivo e il deserto di altre stagioni. Si realizzerebbe così anche un turismo più sostenibile.

La cultura in senso ampio - non solo insieme di beni materiali , ma come sistema di valori che una destinazione turistica intende comunicare – la fa da padrona nel contributo di Federica Burini che sembrerebbe soprattutto tecnico, presentandoci i risultati di un progetto di ricerca e sviluppo finalizzato a rivisitare i segni della città storica di Bergamo – che con Brescia è nel 2023 capitale europea della cultura - secondo una metodologia che utilizza le Tecnologie dell'Informazione Geografica. Esso c'introduce non per ultimo all'intenso dibattito in atto sugli obiettivi che la città si propone e in primo luogo sull'immagine che di sé, dei suoi valori, vuol dare.

Infine, il caso più problematico che è quello di città di medio-grande dimensione, industriali e/o portuali in declino, che puntano ad accrescere e diversificare la loro economia incrementando il turismo, sistema di produzione che, comunque sia, è ecologicamente più sostenibile di grandi complessi dell'industria pesante, com'è il caso di Taranto affrontato nel contributo di Stefania Benetti e Simone Gamba. Si tratta di una sfida indubbiamente ardua, malgrado l'importanza della sua posizione e

del suo sito, perché è certo difficile creare una cultura locale del turismo e le forze economico-sociali per lo sviluppo dell'offerta. Essa è però certamente una sfida che Taranto deve accettare e vincere per un futuro migliore, dati i suoi guai ecologici ed economici, nella consapevolezza che il turismo non potrà essere di per sé solo il toccasana dei suoi malesseri e avrà bisogno per la sua stessa crescita la creazione di altre nuove attività a partire dal sapere e saper fare dei suoi abitanti.

In conclusione, mi corre l'obbligo di evidenziare riguardo ai contributi pubblicati qui e a tutti quelli presentati nell'edizione 2022 delle Giornate del turismo che, avendo posto il tema della sostenibilità del turismo aperto all'interpretazione dei ricercatori, da un lato non mi attendevo molto altro, data la prevalente formazione dei cultori di studi turistici che sono per lo più umanisti e "geografi del paesaggio". Occorrerà, indirizzare la ricerca in materia non solo su tutta una serie di contenuti specifici, come già si prevedeva per le future riunioni scientifiche, ma soprattutto verso analisi comparative tali da evidenziare che i turismi assunti, nei contributi 2022, come sostenibili o "più sostenibili" di altri, lo siano veramente. Questo comporta inevitabilmente un'analisi dei costi e benefici (ecologici, economici e socio-culturali) del tipo di turismo proposto. Assieme questa via - consistente nell'individuazione, tra i turismi possibili di una destinazione, quelli che sono valutati più sostenibili certo soggettivamente e quindi politicamente - un altro indirizzo fondamentale, per comprendere le prospettive del turismo e della sua sostenibilità, è lo studio dei processi di digitalizzazione del sistema di produzione turistica e del suo ambiente di sviluppo. A questi processi, che stanno determinando profondi mutamenti, fanno riferimento già vari articoli proposti alle Giornate del turismo, di questo e di anni precedenti. Nelle prossime edizioni, però, anche su di essi occorrerà focalizzare maggiormente il dibattito scientifico.

Francesco Adamo

ICTS FOR PROMOTING A SCATTERED AND INCLUSIVE TOURISM IN EUROPEAN HISTORICAL CITIES: THE CASE OF BERGAMO-BRESCIA ITALIAN CAPITAL OF CULTURE 2023

Federica Burini¹

Abstract

Rethinking the tourist signage system of the city of Bergamo that will be with Brescia the Italian capital of culture 2023, it means to carry out an important symbolic operation that can have a significant impact both in the use of the places and in the creation of routes, but also in the conveyance of particular values and meanings of the culture of the places that institutions, associations and the various realities involved intend to communicate. The paper will focus on these challenges and will present the results of a research and action project co-organised by the DMO VisitBergamo and the University of Bergamo with other local institutions to revisit the signs of the historical city of Bergamo, following a methodology that exploits the use of Geographic Information Technologies.

Keywords: Geographic Information Technologies, signage, scattered tourism, Italian Capital of Culture

1. Introduction

The most important guidelines for sustainable tourism planning are more and more concerned on the importance of following the 2030 agenda and promote a managerial ecology of sustainable tourism (Hall, 2019). One of the important assets of sustainable tourism management concerns tourist signs, as they are one of the variables that decisively influence the mobility of visitors to a city or a territory and that play a significant role in the promotion of natural and cultural heritage promoting or avoiding the concentration of people in the destination (Gomes Santos da Silva, de Sousa Melo, 2012; Meini, Spinelli, 2012; Meini, Di Felice, Nocera, 2017).

For this reason, it is strategic to design a signage system to facilitate the use of the destination and the resources present in it by approaching them efficiently and quickly. Visibility, legibility and accessibility are the main factors for the design of an inclusive tourist signage system that can enhance the visit to natural and cultural resources. This premise is strategic in view of the national and international event like the one that will happen between Bergamo and Brescia for the Italian Capital of Culture 2023. The title of “Italian Capital of Culture” has been an extraordinary measure conferred to Bergamo and Brescia, in order to be considered as a socio-economic and cultural driver

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for two of the most affected cities by the epidemiological emergency from Covid-19 (Burini, 2020).

This paper presents a methodology undertaken for the update of the signs present in the Municipality of Bergamo and show its role in rethinking the tourist signage of the city, including resources, services and accesses in an inclusive way and aimed at promoting forms of sustainable mobility through the creation of a research methodology that leads to knowledge of existing billboards, their updating and the creation of a new one through the use of georeferenced digital technologies². It underlines the role of digital innovation systems applied to geographical analysis and more in general of digital platforms in promoting a socio-spatial justice with our cities (Celata, Certomà, 2022).

Tourist signs represent one of the various forms of information and communication of the system of tourist resources and attractiveness of a given territory, in order to make them accessible to the various categories of visitors in a direct and immediate way during their stay in the place. It is strongly linked to the naming process (Turco, 1988) which defines the symbolic control of places by the inhabitants, recognizing in it not only the simple georeferencing of the place (referential and localization value), but above all the conveyance of values and knowledge social (symbolic, historical, productive, etc.) that can be transferred thanks to it.

Rethinking the tourist poster system of the city of Bergamo means carrying out an important symbolic operation which can have a significant impact both in the use of places and in the creation of routes, but also in the conveyance of particular values and meanings of the culture of the places that institutions, associations and the various realities involved intend to communicate.

The results presented in this paper show a process of co-planning which saw as protagonists different figures from the institutions promoting the initiative. Alongside the professors who are members of the scientific committee of the University of Bergamo and the representatives of VisitBergamo, ATB (Azienda trasporti Bergamo) and the Municipality of Bergamo, young researchers and students of the University of Bergamo alternated, as well as an IT professional and geomatician.

In order to ensure that information is shared with all the institutions in the area, some representatives of the city's museums and associations were consulted. Furthermore, experts were involved for specific questions. Lastly, meetings were held with some associations (Association for the Upper Town and the Hills of Bergamo) and tourist guides of the city (Elisabetta Campanini and Perlita Serra) to compare the results of the research with the experience of those guides who have been working for years to promote the visit of the territory.

² The project has been developed within the initiatives for Bergamo-Brescia Italian Capital of Culture 2023 and has been coordinated by Federica Burini at the ICSAI Transport and Sustainable Mobility Center and the Department of Foreign Languages, Literatures and cultures of the University of Bergamo. The members of the research team of the University include: Sara Belotti, Elisa Consolandi and Filippo Gagliano. Some trainee students and tutors of the master's course in Planning and Management of Tourism Systems have participated to the research: Fabiola Bettinazzi, Alessandra Messori, Martina Vincenti, Silvia Olivari, Vu Hai Nguyen, Marianna Bertocchi. The partners of the steering committee of the project include: Christophe Sanchez and Alessandra Pitocchi from *VisitBergamo*, Gianni Scarfone and Paolo Rapinesi from *ATB and* Claudio Cecchinelli from the Municipality of Bergamo, *Servizio Cultura e UNESCO*.

The methodology followed will be illustrated in the following paragraphs, which can be summarized in the desire to design a signage system in line with the cultural values produced by the inhabitants of the area and aimed at travelers to facilitate the use of the urban space and the resources present, in view of the important national event Bergamo-Brescia Italian Capital of Culture 2023. The aim was to rethink the tourist signs of Bergamo - the resources, the services, the gateways to the city - in an inclusive way by devising a research methodology that leads to knowledge of existing billboards and their updating through the use of geo-referenced digital technologies.

The analysis will be divided into four sections for illustrating: i) the methodology and tools used; ii) mapping for the collection of information relating to existing signage, highlighting problems or deficiencies; iii) the updating of pedestrian signs; iv) the updating of existing itineraries and the creation of new ones, consistent with the sustainable and inclusive perspective of the vision.

2. A collaborative methodology for a new signing for Bergamo and Brescia Italian Capital of Culture

The project of analyzing a new touristic signing for the city of Bergamo was born within the DMO (Destination management organization) Visit Bergamo asking the scientific coordination of the University of Bergamo and the partnership of public institutions like the Municipality of Bergamo and semi-private actors like ATB (Azienda Trasporti Bergamo). In this context, the Triple Helix model (Etzkowiz, Leydesdorff, 1995) was adopted, based on the interaction between university, public administration and the private sector, where the university plays a role of engine of economic development by facilitating territorial innovation (Lazzeroni, Piccaluga, 2015). In addition to these three propellers, it is good to take into consideration two other elements that influence a governance process structured as follows: the heritage of the city to be preserved and protected from impacts and transformations linked to planning; and the role that the inhabitants and civil society play as co-producers and users of the result of the project (Adamo, 2017). Therefore, following this model, the experimentation of a governance process is envisaged with the aim of favoring not only the role of the University as an engine of socio-cultural dynamism, but also that of the Public Administration as a territorial agent activator of good urban planning which acts as a driving force for all the institutions of the municipal territory and that of the private sector as a promoter of synergies and socio-economic development.

Rethinking the tourist signage system of the city of Bergamo that will be with Brescia the Italian capital of culture 2023 can be seized as an opportunity to make the city more welcoming and inclusive, in fact, if well designed and conceived in a reflexive way, the creation of signs can have direct repercussions on the ramified accessibility of the territory, with the aim of fighting phenomena of overtourism and spatio-temporal concentration of flows; it can also contribute to broadening the spectrum of categories of inhabitants who can access the cultural and naturalistic resources, as well as the services of the city, promoting inclusiveness and spatial justice in the tourism sector, through a form of facilitated accessibility and the possibility of using much wider resource; it can also highlight the cultural values and territorial knowledge by involving the numerous actors who promote the natural and cultural resources of the city area.

Therefore, the principles that must guide such a project should include:

a) *branching*: to show alternative routes to the more popular itineraries;

b) *multiculturalism*: to find multilingual ways of communication that reach more tourists;

c) *inclusion*: create systems of communication able to reach different categories of visitors.

In this context, it is strategic to resort to digital technologies, including geo-referenced ones, by designing a management system for tourist billboards on a digital platform, through the geo-referencing of resources, the combination with a virtual place on the web and the possibility of consulting and updating the database, also for the purposes of more efficient management.

As regards the methodology for updating tourist signage for a welcoming and inclusive Bergamo, it is necessary to underline that depending on the type of sign we refer to, we are acting communicatively towards a single building or element of the landscape, or itinerary, or again we are referring to a part of the territory to visit. So a geographical approach is very useful to better understand the role of different typologies of signs and ameliorating the visit of the city and its accessibility.

In fact, there are different categories of resources that are communicated through tourist signs: i) *punctual signage*: architectural or monumental resources: museums, palaces, monuments, churches, etc.; environmental resources: gardens, parks, botanical gardens, etc.; temporary events: exhibitions, demonstrations, annual events, etc.; iv) *linear signage*: itineraries; iii) *areal signage*: posters showing maps of parts of the city or area.

For each of these categories, a reflexive analysis was advanced through the assumption of a series of design criteria which led to the choice of the most appropriate method of inclusive communication. In fact, the following steps are understood to be the main ones: a) **Location**: to ensure real visibility upon arrival of the visitor both at the resource and in other strategic points of the city to ensure its accessibility;

b) The **content to convey**: which restores the culture of the place;

c) The **language and method of transcription**: that it is open to different cultural contexts;

d) **Graphic rendering**: to ensure effective communication;

e) **Implementation**: in compliance with communication and safety standards;

f) The **physical installation**: which actualizes the realization of the project;

g) The **virtual connectivity of the resource**: allowing connection to a website or other digital content.

Starting from this methodology, the team of geographers of the University of Bergamo proposed the articulation of the project into modular phases, which includes a preliminary *knowledge phase* (carried out between the months of February and April 2022), an *updating phase* (between April and May 2022) and the *implementation phase* (in the months of June-December 2022). During the knowledge phase, a mapping of the existing billboards was implemented through the creation of a geo-referenced mapping system capable of reporting the different categories of resources present within the urban perimeter of Bergamo. This work was accompanied by a comparative analysis of virtuous case studies in other Italian and foreign cities, carried out with the aim of understanding the good practices implemented in the field of tourist signage and adopted in other contexts in order to be able, subsequently, to develop an innovative, digital and accessible signage. During the updating phase, on the other hand, another mapping system was designed in order to be able to carry out a census of the signs present in Bergamo, by means of the identification of the types of resources

present or new (which therefore need to be shown through the installation of explanatory panels) and their networking and tourism promotion. This was possible both through the mapping system set up and through meetings and interviews with the city guides and the comparison with the sources made available by the partner institutions. This was followed by the identification, modification and creation of new visitor routes and itineraries, capable of enhancing the peculiarities and off-the-beaten-path streets of the city, in a sustainable and accessible perspective for all categories of inhabitants, including disabled people and foreign tourists. In fact, during the project, the places were identified in which to install new panels dedicated to pedestrian signs with the aim of promoting routes that favor the orientation of the tourist and his movement on foot through the less known streets of Bergamo. Lastly, the mapping creation phase was dedicated to the drafting and infographic creation of the billboards with particular attention to the communicative aspects (such as, for example, the use of foreign language) and inclusive aspects (i.e., dedicated to the visually impaired and blind) and its adaptation to the real and virtual integrated system through the creation of panels that provide for the use of QR codes and which refer to an updated website dedicated to the routes and resources present within the city.

3. Digital technologies and ICTs for a new scattered and inclusive Bergamo signing

The common element of the project was the use of ICTs in all the above described phases. In particular, the research started with the elaboration of the mapping system useful to track the different categories of signs and their cataloging within a georeferenced system. As part of the creation of the catalogue, a webGIS platform was built, which allowed the collection of information within a database. The georeferenced web platform with GIS technology has made it possible to collect data quickly, with predefined questions that provide easy-to-compile answers, implementing image embedding features (Figure 1). The webGIS platform is responsive and can run on smart devices, laptops, desktop computers, and even in the browser as a webapp. The data was then acquired in a geodatabase and made available and consultable, in real time, in the webGIS mapping platform. The mapping platform, therefore, allows the user to view the data collected on a map, in real time, as well as query and acquire data relating to the survey of resources. Among the main functions of the webapp for displaying the mapping related to signage, the following can be listed:

- navigation in geographical data (zoom in, zoom out, pan, zoom to maximum extension);
- queries and searches (info, searches, etc.);
- measurement of distance, areas and coordinates;
- reset selection;
- ability to print and download customizable;
- instructions for use;
- management of layers (information layers) and paper background;
- visualization of the overall map;
- map sharing management.

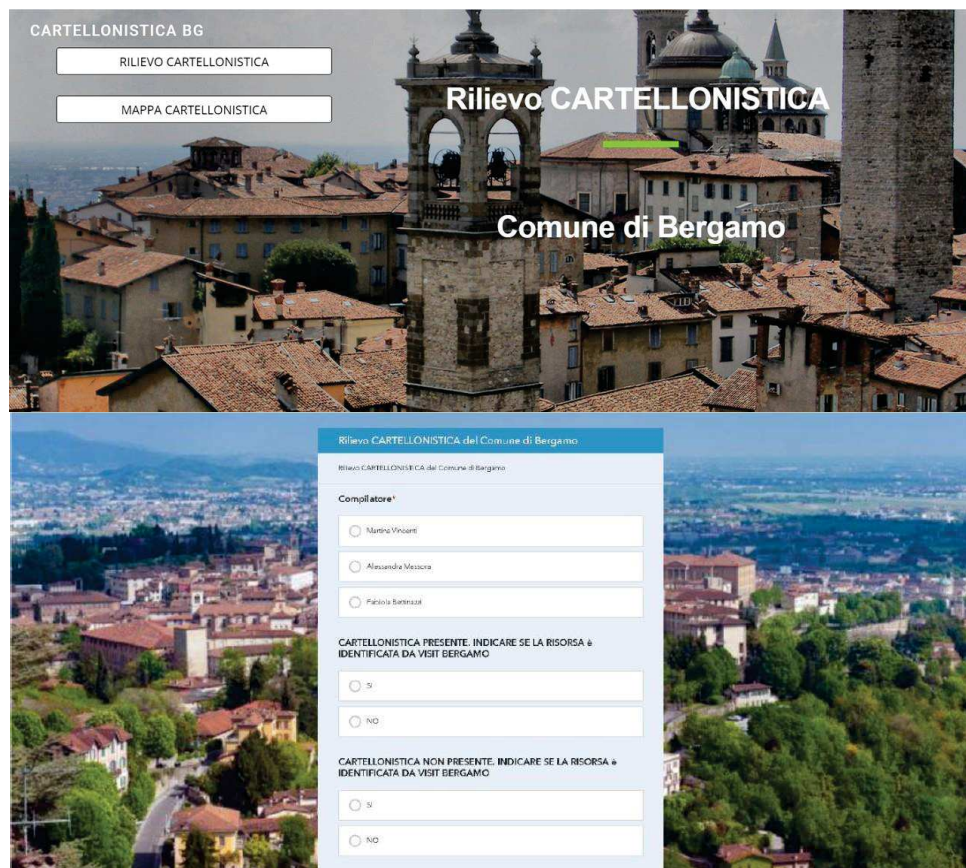


Figure 1: *The webGIS interface for data collection*
Source: <http://www.igisweb.it/cartellonisticabg/rilievo>

In each phase of the survey, the geographical position of the existing and newly inserted billboards was always verified. For this reason, an initial data collection grid has been created which is capable of reporting the necessary indications relating to the resources present in the Bergamo area; subsequently this insertion scheme was modified and adapted on the basis of the results deriving from the collection of land. This made it possible to produce a relevant and correct database for the cataloging of resources with and without signs present in Bergamo and part of the road and pedestrian signs of the city. This analysis has, in fact, taken into account the different types of signs present to show a single building or element of the landscape, a path or itinerary, or even a part of the territory to visit.

The database and the collection of data relating to city billboards were created starting from the mapping draft already carried out by VisitBergamo on the entire Bergamo area, which was verified (both from the point of view of the information entered and in terms of georeferencing) and updated with the indications relating to the signs present. At the end of the data collection phase, on the other hand, a check and integration work was carried out on the information present in the database and the possibility of identifying new resources was detected through meetings and interviews with some associations and tourist guides of Bergamo and the comparison with the sources made available by the partner institutions. This operation has allowed, through the results of the mapping, the identification of itineraries and visit routes that promote

a form of sustainable tourism and that lead to a discovery of the territory and its resources

In order to allow the creation of a unique database and to make the data recorded within the mapping system cohesive, some methods have been defined for entering the information. Such a tool made it possible to make an initial mapping and georeferencing work that was carried out by 4 trainee students from the Master's course in Planning and Management of Tourism Systems at the University of Bergamo, who followed a curricular internship at VisitBergamo, ATB and the Municipality of Bergamo, project partners³.

The methodology adopted for the creation of the database envisaged a correspondence between the name of the resource and the title of the sign to be geolocated; in the case of road and pedestrian signs - on the other hand - the main direction indicated has been reported. Subsequently, the address of the resource being mapped and its precise position are indicated, also by moving the pointer within the map in case it is difficult to identify a house number or the specific location of the resource and the related sign. In the form, the need was therefore identified to indicate whether the resource had a billboard and whether it was already present in the database provided by VisitBergamo; in the latter case the insertion of the corresponding ID was also requested for greater verification.

The researchers were therefore asked to specify the type of resource to map (i.e. sports equipment, congress center, churches, historic houses, itineraries, monuments, museums, parks and gardens, points of interest, services, UNESCO site, theatres) and to which the sign or panel refers. With reference, however, to the type of sign, within the form it was necessary to indicate - precisely - the specific type of sign about to be mapped. Given the varied presence of panels within the urban context of the Municipality of Bergamo, the need to propose a categorization of the different types of tourist signs was in fact detected as very important especially for VisitBergamo. A subdivision of the different types of sign was suggested in a table (in addition to the "not present" category), which was adopted by the compilers in the production of the database and the related mapping system. Finally, the notes (the insertion of which was optional) concern the additional information that is intended to be underlined and mainly refer to the need to clean the signs or their poles and the possible presence of a hybrid signage in the same pole. The photograph, which refers to the sign or the georeferenced resource, has the purpose of better showing the state of conservation or cleanliness and the context of insertion.

As previously anticipated, each sign was geolocated within a webGIS system, and in order to understand if it was necessary to improve and renew the signage, the categories "good", "smearred" and "bad" were assigned to both the signs and the support elements. The results of this work can be consulted in the mapping system available online (Figure 2).

³ These students contributed actively in the good results of the project: Fabiola Bettinazzi, Alessandra Messori, Martina Vincenti and Silvia Olivari from the Master's course of Planning and Management of Tourism Systems at the University of Bergamo. They all decided to write their final dissertation on the topic of the project.

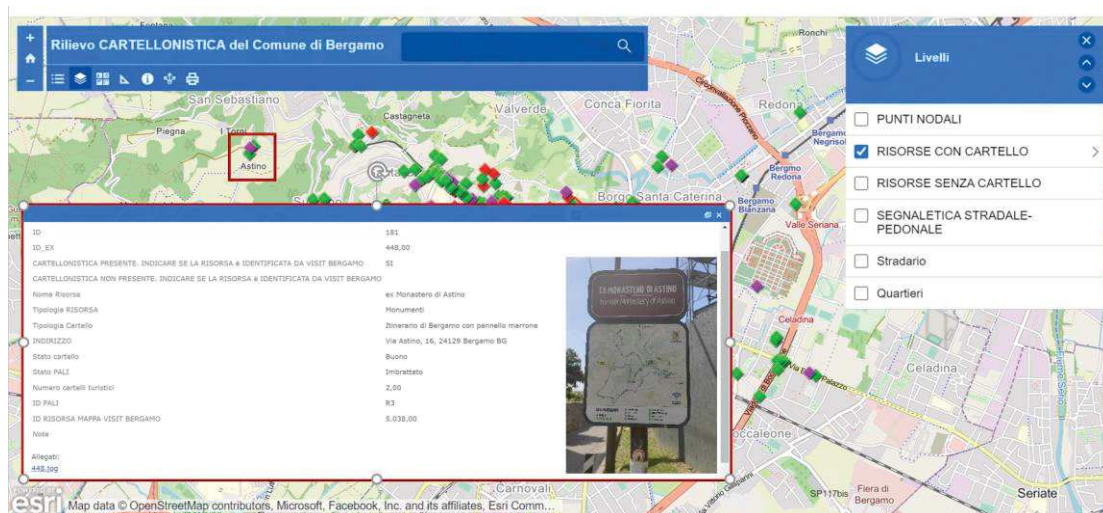


Figure 2: *The WebGIS mapping system*

Source:

<http://www.igisweb.it/cartellonisticabg/map/index.html?appid=4866b14c5fa640faac11ee44f9f1629a>

As a result of the knowledge phase of the project, a total of 549 resources were mapped, divided as follows (Table 1):

Total signs	352	Total Poles	257
Signs in good condition	253	Poles in good condition	164
Dirty signs	64	Dirty poles	68
Bad signs	34	Bad poles	25
Total resources without signs	107		

Table 1: *The results of the knowledge phase*

The research first phase allowed the involved institutions to have a clear understanding of the number of signs and poles, their effective conditions, in order to be able to propose some ideal points for the installation of new signs dedicated to pedestrian signage and itineraries. The WebGIS mapping systems was necessary for the cataloging of the resources present in Bergamo, in order to understand where it was possible to install - in a coherent and reasoned way - the directional panels for tourists.

4. Methods for a better planning of pedestrian signs and of a scattered accessibility in the city

After the first knowledge phase, the research focused on pedestrian signs, for a new planning and a better accessibility of tourists within the city.

To better delimit the perimeter within which to operate in the creation of new signs, some axes to be favored were suggested by the Municipality of Bergamo and VisitBergamo, which include - in addition to the Upper Town and the Valle di Astino⁴ - the city center downtown. In addition to this, particular attention was also paid to the areas belonging to the ancient settlements of the ancient city of Bergamo (the “borghi”) of Pignolo, San Tommaso and Santa Caterina. In this way, it is considered possible to envisage signs that favor walking towards the historic city with the UNESCO site of the fortified city of the Republic of Venice⁵ and - in the same way - to promote a better knowledge of the lower part of Bergamo, understood as the twentieth-century heart of the city, usually not included in the tourism itineraries.

The methodology adopted for the creation of a georeferenced database dedicated to pedestrian signs was articulated in a preliminary phase for the creation of the collecting mapping system, followed by three phases of data collection, field survey and co-design.

During the preliminary phase a GPS Tracker application was chosen for detecting the location through the use of tablets - which facilitated the recognition of the points for the installation of new signs, allowing researchers to carry out a search capable of retrieving the location proposed for the signs.

A field analysis and survey was then carried out to better understand the consistency between the position identified for the signs and the directions indicated in the database and, consequently, the creation of a prototype for the new pedestrian signs. In addition to this, photographs were taken of the area surrounding the identified point, in order to provide an updated image that shows the previous presence of dedicated supports. The geolocation of the places proposed for the insertion of signs was then put into a webGIS system (specifically, Google Earth Pro), in which explanatory pop-ups were prepared and created capable of showing - with the aid of infographics - the suggested directions to consider in the creation of the new signage. This mapping system created on a webGIS basis is configured as a tool that is easy to consult and update, which allows the georeferencing of information and their integration through explanatory cards containing text and images (pop-up). For each point surveyed within the system, in fact, an infographic was produced (in the form of an explanatory rendering) in order to better specify the resources and the directions to follow to reach them. In particular, about sixty points of interest have been included in the information system for the installation of pedestrian signs and, for each of them, directional indications have been provided that are able to guide the tourist in visiting the city. For the proposals relating to the creation of new signs dedicated to pedestrians, the multidirectional intersections and corners of the city near the main public transport stops (such as the railway and

⁴ Valle di Astino, located on the outskirts of the city of Bergamo, is an area known internationally as, after winning the Italian landscape award, it was awarded the Landscape award of the Council of Europe 2021 for its valuable features landscaped. The recovery project of this area, rich in history and biodiversity, envisaged - among other things - the creation of a section of the Bergamo Botanical Garden, called "The Valley of Biodiversity". As part of the review of the pedestrian signs, this body made valuable suggestions that were taken into consideration during the design process. The suggestions made aim to enhance sustainable routes between the sections of the Botanical Garden in the Upper Town and in the Astino Valley, through the promotion of hiking trails in the hills of Bergamo. For this reason, in the future we could think of an implementation of signs linked to the enhancement of the Regional Park of the Hills, which includes - in addition to the hiking trails - the complex of the former monastery in Valmarina.

⁵ See the dedicated website: <https://muraveneziane.bergamo.it/>.

tram station, urban buses and funiculars) were mainly taken into consideration. In addition, particular attention has been paid to the Upper Town and to the possibility of guiding tourists out of via Bartolomeo Colleoni (known as Corsarola), directing them towards less frequented but equally valuable streets. This in order to fight against overtourism and overcrowded streets. In addition to this, the system has been designed and organized in such a way as to have continuity between the different signs, offering the tourist constant routes - in which the resources are proposed a short distance away - which accompany him/her throughout the visit.

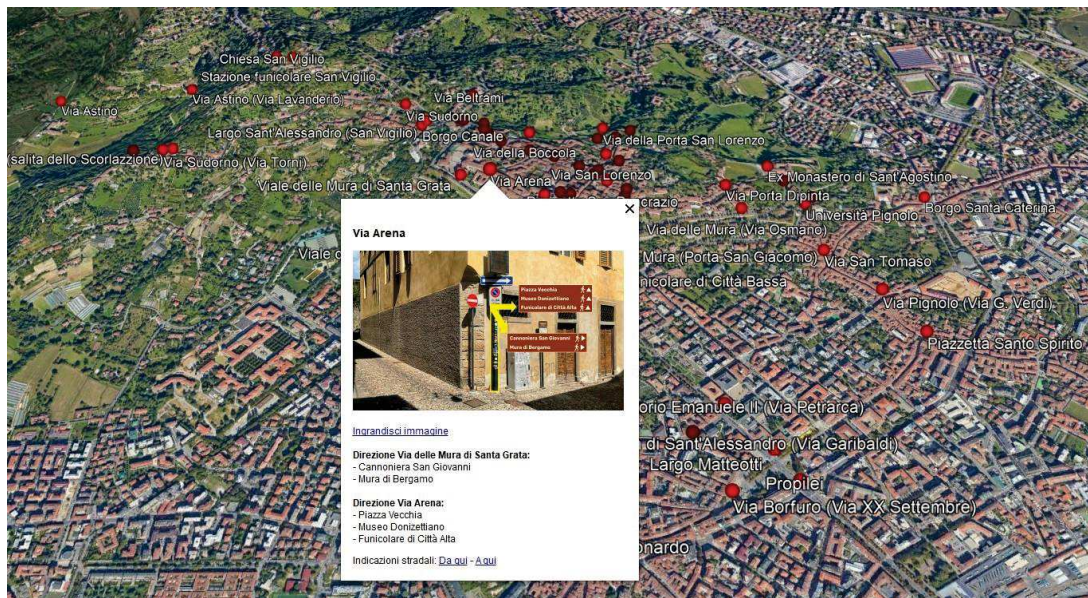


Figure 3: Mapping system for the geolocation of tourist pedestrian signs

The ability to interact with the map allows researchers to deliver a complete tool to VisitBergamo and the Municipality of Bergamo, which allows to understand the choices with respect to the new location proposed for pedestrian signs and which can be updated over time on the basis of the choices defined by the stakeholders involved.

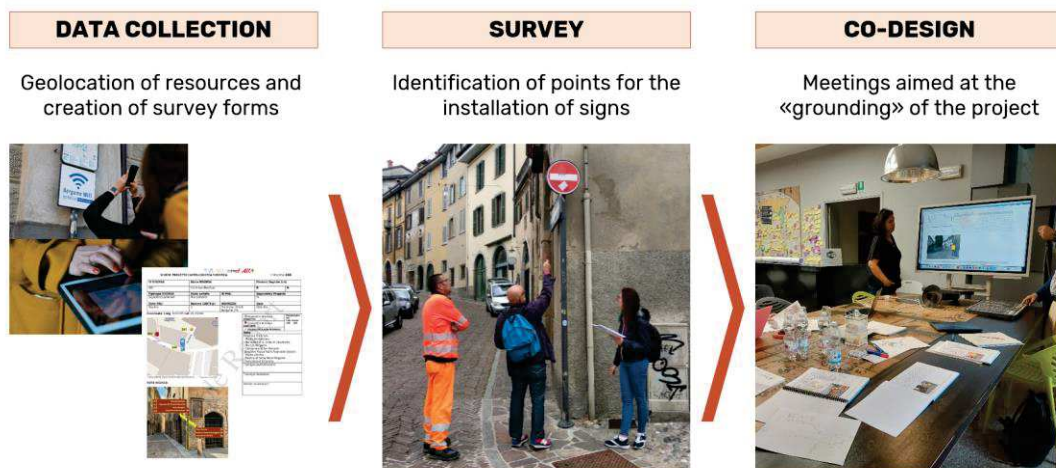


Figure 4: Phases of the methodology followed for the analysis of pedestrian signs

Once the phases of data collection and survey for the identification of points for the installation of signs are finished, the last phase concerned co-design between the University team, VisitBergamo and different stakeholders of the city, in order to better define the final number of pedestrian signs to change, to leave or to install.

5. Conclusion: new tourism signage as a «territorial agent» of scattered and slow tourism

The analysis of the tourist signs in Bergamo has made it possible to evaluate the possibility of designing routes aimed at facilitating the accessibility of the city by different users and revealing many resources, usually not indicated in touristic paths, approaching them efficiently and quickly. In particular, the work led to an analysis of the tourist itineraries present in the Municipality of Bergamo and to putting forward some proposals for thematic reformulation for greater consistency with the natural and cultural heritage of the city. In fact, it was possible to record the presence of five itineraries in the municipal area, most of which show – however – some inconsistencies. The planning in the creation of new tourist itineraries was strongly focused towards the networking of the resources located in the different neighborhoods of Bergamo through the creation of branched paths in order to promote a better accessibility and a scattered offer. The team suggested the arrangement of previous itineraries and the creation of new ones better organizing environmental resources in a specific path (regional park, gardens, botanical gardens, city parks, etc.), fortified historical architectural resources in the upper town, related to the Unesco site of Venetian Republic fortified resources, historical path in downtown city center, in order to re-organize the pedestrian accessibility and better distribution of tourists in the different neighborhoods of the city.

The objective was, in fact, to establish a thematic coherence capable of accompanying the tourist off the most well-known routes in order to be able to discover the hidden corners of the city and be able to come into contact with unrevealed cultural and naturalistic beauties. For this reason, some proposals have been made for new thematic itineraries for the Municipality of Bergamo which are the result of an exchange work with some professionals in the sector and local actors⁶.

It is important to underline that for each proposed itinerary a general description and information regarding the length was provided; no indications was provided regarding the travel time of the route for two reasons: i) the times indicated cannot take into account the physical and training conditions of those who use the itinerary, who travel it at their own pace; ii) the routes have been designed to be made on foot, by bicycle and with public transport (city buses, funiculars, electric scooters, etc.) present in Bergamo. In addition to this, the insertion of a QR Code on the signs dedicated to the itineraries has been foreseen, so that tourists can be directed to the illustration of the resources through texts written both in Italian and in English, images, videos and other tools related to digital (such as, for example, augmented reality), which make it possible to make the experience of the path immersive. The itineraries are conceived

⁶ In fact, in order to be able to propose reasoned paths for the creation of new itineraries, some meetings and exchanges were organized with some local experts, including Roberta Frigeni (Scientific Director at the Bergamo History Foundation), Elisabetta Campanini (Tourist Guide VisitBergamo) and Gabriella Baiguini, Beppe Cattaneo, Nino Gandini, Perlita Serra (Association for the Upper Town and the Hills of Bergamo).

in order to be able to enhance the tourist resources present within the Municipality of Bergamo, recovering the lesser-known places in the city and promoting their knowledge. In addition to this, these routes, leaving the streets best known to visitors, have the aim of promoting the discovery of Bergamo in a sustainable way, i.e. through pedestrian (or cycle) paths and the recovery of the ancient stairways. At the moment of the research layouts are being designed by a private agency working for the Bergamo DMO and the next steps will be to help making them being inclusive. The project, in fact, is still continuing, both for the richness of the resources to be analyzed and for the request of other institutions to know this methodology and to apply it to other parts of the city. Thus, the most important result of the project is the role that geographers can have in the analysis and conception of new methodologies – through the use of ICTs - for a better urban planning capable of offering scattered and green solutions, following the need of different categories of inhabitants. This is a matter of how geographical research can rely on digital innovation systems for a better analysis of the complexity of the city and also for the role of digital platforms in promoting a socio-spatial justice with our cities.

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