Article

A Creative Living Lab for the Adaptive Re-use of the Morticelli Church: the SSMOLL project

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Abstract: The international debate on the adaptive re-use of cultural heritage sites following the Sustainable Development Goals becomes more central than ever in the implementation of circular economy models for urban policies. The new values that characterise the cultural assets, considered as the result of a collaborative process, can enhance both the manufactured capital and the human capital, and to carry out the system of relationships that bind them. At the same time, the values of historical-artistic assets and produced by community-based regeneration processes are particularly relevant when they characterise abandoned commons and cult buildings, to which communities attribute an identity and symbolic value. Starting from the definition of the concept of Complex Social Value, we propose a methodological process that combines approaches and techniques typical of deliberative evaluations and collaborative decision-making processes. The aim is to identify the complex value chains generated by adaptive re-use, in which intrinsic values can play a driving role in the regeneration strategies of discarded cultural heritage. The experimentation, tested with the project "San Sebastiano del Monte dei Morti Living Lab" (SSMOLL), activates a creative and cultural Living Lab in the former church of "Morticelli", in the historic centre of Salerno, in southern Italy. The re-use project is part of a more comprehensive process of social innovation and culture-led urban regeneration triggered in Salerno starting from SSMOLL.

Keywords: Cultural Heritage; Adaptive Reuse; Urban Regeneration; Community-Based Approach; Decision-Making Process, Intrinsic Value

1. Introduction

Within the national and international debate on the future of cities, the community and the identity places of cultural heritage play a decisive role in their ability to interpret and transform them. The eleventh Sustainable Development Goal recalls how, on a global level, urban areas are expanding at a faster pace than their populations. Indeed, between 2000 and 2014, the areas occupied by cities grew 1.28 times faster than their population. That means that urban densities in cities have decreased, determining profound repercussions on environmental sustainability [7] and affecting the continuously declining cultural heritage (CH).

At the same time, the European Commission (EC) [8] defines cities as favourable environments for culture-driven innovation both because of the greater local autonomy that characterises them and because of the attention given to the needs and potential of their inhabitants. Therefore, the EC encourages the activation of participatory processes to safeguard abandoned CH, interpreted as a strategic resource for sustainable development [9,10]. In this perspective, the establishment of the "Heritage Community" [11] becomes central in new urban policies where cultural heritage becomes the main driver for urban development.

The CH proves to be a shared resource that can strengthen a common identity and positively influence people's quality of life [11,12]. 71% of Europeans agree that "living near heritage sites can improve quality of life", and up to 84% of Europeans think that CH is as essential on a personal level as it is for their local community [13].

2018, European Year of CH, has imposed a reflection on heritage and concrete opportunities for re-use of public cultural heritage. A particularly lively debate defines "adaptive" re-use of these places [2] [14–16] as a powerful strategy to manage the change of state of the building through a more comprehensive process of social regeneration and urban sustainability [17]. The time of the adaptive re-use process is when, between the decommissioning and re-use of assets, the designed strategy uses and develops methods to assess the compatibility of new functions with the architectural features of buildings [18,19].

The lack of public resources increasingly pushes local governments to support processes of adaptive re-use of historic assets and to experiment, with new cultural experiences and social cohesion, new forms of cultural enterprises and active citizenship, as well as models of governance shared with local profit/non-profit realities. The reactivation of these places is, therefore, often connected to the implementation of hybrid creative processes, capable of generating new forms of creative urban productivity, social and economic innovation, involving young professionals, artists, researchers, weaker segments of the community, migrants and the unemployed [20–22].

Within urban contexts, adaptive re-use of CH thus plays a decisive role in terms of environmental sustainability, while at the same time producing multi-dimensional benefits: cultural benefits (keeping "alive" a symbol of community identity), economic benefits (in terms of increased productivity), environmental benefits (such as reduced consumption of non-renewable resources) and social benefits (such as increased employment) [23–25]. In the processes of adaptive re-use, the transition from "waste places" to "catalytic places" of new opportunities is included in the new dynamics of urban circular economy [26–29], characterised not only by the recovery of the manufactured capital but mostly by the enhancement of the human capital involved in the process.

In the panorama of the abandoned cultural sites, churches represent a widespread network of assets at the international level and the religious CH, on the whole, constitutes the most frequent category that characterises the UNESCO sites. Since 2015, in Europe, data tell of an increasing number of buildings abandoned by the Catholic Church, in several cases re-used as shops, pubs, skateparks, houses [30]. According to a survey developed in 2015 [31], about twenty churches are closed every year in England; and about three hundred are the abandoned or semi-abandoned churches in Denmark. In the Netherlands, the tendency to give up holy places is rapidly increasing: the Dutch Catholic Church estimates that two-thirds of the 1,600 churches will be abandoned by 2025, and 700 Dutch Protestant churches will be closed by 2021. The growing interest in the issue of disused religious buildings also emerges from the rise of many non-governmental organisations such as the Churches Conservation Trust and the FRH "Future for Religious Heritage", a European network based in Belgium for the promotion and enhancement of religious heritage [31].

In Italy, churches constitute the most recurrent territorial infrastructure in the landscape: the census of dioceses counts about 66,930 buildings, owned by 219 Italian dioceses; religious orders and the more than 800 churches of the Ministry of Interior's Worship buildings (Fec) have been excluded [32] The total number of actual churches is to be understood as doubled or tripled concerning the census figure, which still excludes the large number of other religious buildings, such as convents, monasteries, libraries, museums and archives, which constitute a large part of the Italian building heritage [33]. While it is complex to define the size of the religious heritage, it is even more difficult to know its conditions. In addition to the abandoned churches, some are underused, consecrated, or deconsecrated, owned by the municipality, the curia, or entrusted to cultural actors in the area.

In 2014, FRH, in collaboration with Sociovision, carried out a survey aimed at investigating the relations of European citizens with former churches and other religious buildings, involving 6,000 citizens from 8 European countries [34]. A convincing majority agrees that religious heritage represents a unique and essential part of cultural heritage and is a crucial component of European identity. Four out of five Europeans believe that religious heritage buildings are critical in the life of the community and should involve a wider lay public. 79% of respondents believe that these places

have a crucial role in the survival of their communities in the future. In comparison, 72% think that they can open up to other non-religious uses (concerts, conferences, exhibitions, etc.) to ensure their sustainability and preservation (Table 1).

Questions	Total yes (absolutely or rather)	Absolutely yes
When asked about country's cultural heritage, do you think about Churches and other religious buildings?	84%	41%
Do you personally think that preserving and protecting churches and other religious buildings is crucial for your community's current and future life?	79%	34%
According to you, churches and other religious buildings…		
A Should be solely delicated to religious practice and events related to religion	56%	19%
B Should be open to tourism when they hide architectural or artistic treasures	87%	43%
C Can be open to other non-religious cultural activities (e.g. concerts, conferences, exibitions) if such activities can finance their maintenance and preservation	72%	28%

Table 1. Data extracted from the FRH & Sociovision survey, 2014.

The results of the survey show how religious goods still play a crucial role in the life of contemporary cities [31] and how they are considered "special" because of their cultural and social importance, with the high spiritual significance that binds them exceptionally to the territory and the local community [35].

The adaptive re-use of CH places represents a precious opportunity to generate new values and, in particular, Complex Social Values [5,6], characterised both by the economic component expressed by the Total Economic Value, and by the non-economic component, constituted by the intrinsic value. At the same time, it can guide the valuation processes in identifying new ways of re-use to preserve and hand down the tangible and intangible values of CH. It is possible to highlight how for the places of CH the immaterial component attributable to intrinsic value [6,36,37] is particularly relevant in an adaptive re-use perspective.

As an architectural artefact produced by human-beings for human-beings, in addition to an "anthropocentric instrumental value" recognised for its ability to satisfy human needs, CH also possesses an "anthropocentric intrinsic value" in that it is recognised as an interest or good for itself. In addition to economic benefits, it is therefore also recognised as a value independent of use and "dependent on its existence, its symbolic meaning, its architectural features, its role in history" [38] (p.181).

Recognising the intrinsic value of a CH, and determining it by feeding it over time, implies recognising in it an identity character in which the community can identify itself preserving it in the actions of re-use to pass it on to future generations. Therefore, the intrinsic value is strictly connected to the autopoietic capacity of the cultural heritage to regenerate its nature through the anthropic action of preservation and re-use, and specifically through the expression of "glue value", that is the set of those relational values able to build bonds and generate new values. The relationships triggered by a patrimonial community through a process of re-use of cultural goods become themselves rooted CH that, from the recognition of intrinsic values, can produce new social, cultural, and economic values. Precisely because of their ability to generate new economies, the intrinsic values, proper to the CH, become driving forces in the strategies of valorisation and determinants in the strategic choices that characterise the territories.

With special attention to bottom-up practices, at least two main issues, which ongoing research is trying to investigate, feed the problems related to the adaptive culture-led re-use of disused buildings: on the one hand, economic sustainability, rarely contemplated for this type of process not expressly connected to the preservation of the asset as a physical structure; on the other hand, the need for an analytical approach in re-use strategies, to scientifically identify concrete scenarios of re-functionalisation that justify the half time adopted [1]. The decision-making process becomes, therefore, crucial to deal holistically with the different components at stake: values and meanings of the abandoned heritage, physical characteristics and potential of the asset [39], context and "heritage community" [11] of reference.

In those cases where adaptive re-use projects are configured as collaborative processes, the internal evaluation that characterises the decision-making process, defined "co-evaluation" [40–42], has been conceived as a shared process, built with and for the community [43–45]. In multi-actor processes, co-evaluation is also a product of co-operation, a participatory and engagement activity that overturns the ordinary paradigm of one-way evaluation, integrating into the process the interactions among evaluators and stakeholders, experts and non-experts, communities and citizens.

Co-evaluation, which is more widespread in the areas of teaching [46] and marketing [47], in complex decision-making processes can be configured as a systemic application of the evaluation process [48], that concerns a common good, experimenting with the ability to evaluate together, each with their different skills, to reduce conflicts and bring out shared benefits [42]. Co-operation is a precondition for co-evaluation and enables accountability and mutual learning functions of evaluation in multi-actor settings.

The case study analysed in this paper is a research-action project applied in the south of Italy, in the city of Salerno, Italy, with the aim of structuring and testing a methodological path for the activation of a Living Lab dedicated to the adaptive re-use of CH. In particular, it is a Creative Living Lab that put in place to experiment a bottom-up re-use process, in a broader context of culture-led regeneration [49,50], of a former church of 1530, deconsecrated and abandoned since 1980, located in the historical centre of the city.

In detail, the rest of the paper is structured as follows: Section 2 includes materials and analysed methods related to the decision-making structure of a Living Lab process, the deliberative evaluation techniques used to elicit values, and the experimentation of co-evaluation approaches in collaborative processes. Section 3 presents the case study of the SSMOLL project, while Section 4 outlines the partial results of the first year of activity. Finally, Section 5 outlines the conclusions and perspectives of ongoing research.

2. Materials and Methods

The proposal of the methodological approach for adaptive re-use of disused and/or abandoned CH has articulated considering the following issues:

- the construction of a collaborative decision-making process, through the setting up and activation of a Creative Living Lab;
- the elicitation of values through deliberative evaluation techniques;
- the co-evaluation role within the collaborative decision-making process.

The following paragraphs describe the three main aspects that characterise the articulation of the methodological approach.

2.1. The structuring of a Living Lab for adaptive re-use processes

To respond to the need to identify a methodological approach for adaptive re-use strategies of disused CH, the framework of Living Lab (LL), typical of the world of open innovation, is identified as a user-centred ecosystem, based on a systemic co-creation approach that integrates research and innovation processes in communities and real-life contexts. Indeed, Penny Evans, from Bristol Living Lab, describes the LL as "a place where citizens, artists, technologists, companies and public sector organisations can come together to co-create ideas, tools and technologies that will address local

challenges; a place for innovation and exploration of new possibilities, where reflection and evaluation are integrated into the work process" [51] (p. 9). Adopted by the European Union under the impetus of the Finnish Presidency in 2006 with the birth of the European network ENoLL [52], the LL's approach is also encouraged by the European 2020 strategy, with the Horizon 2020 implementation tool, to overcome the model based exclusively on research and technological development, promoting a new one aimed at combining scientific research, technological development and the market at the same time. Preserving the concept of research and borrowing the idea of technological development in urban and social development, the market in the production of cultural services and economic and non-economic values, an experimental model of cultural LL is defined.

According to the above perspective, LLs can assume a significant role in the construction of community-driven re-use processes which very often manifest themselves starting from concrete experimentations on the territory [53], identifying in the places the spaces of disused CH and intercepting in the characterisation of LLs an architecture useful for the development of a structured regeneration process, able to last in time, no longer identifiable as a mere "hopeful monster" [54]. LLs operate as intermediaries between citizens, research organisations, companies, cities and regions for the co-creation of shared values.

Despite the many different implementations at various levels, themes and scales, the main features of an LL are outlined [51]:

- Definition of a quadruple helix model for governance and development, consisting of: universities, governments, companies, and citizens;
- Identification of the different levels of analysis [55]: macro (organisational), meso (project), micro (direct involvement actions);
- Adoption of the characteristic implementation elements: multi-methodological approach (a combination of methods and tools belonging to different knowledge and professional fields); user involvement (giving them the possibility to contribute directly to the innovation process); multi-stakeholder participation; process setting in a real-life context; co-creation (iteration of design cycles with different sets of stakeholders).

The development phases of an LL can be summarised in three main steps [51]:

1. Exploration of the "current state" of the decision-making context and users (through the tools of direct observation, participation, and awareness-raising) to design possible "future states" through brainstorming, ideation and co-creation techniques;
2. Experimentation, i.e. co-designing in a real-life context to understand the relationships between the context and the users, triggering new possible behaviours and habits;
3. Assessment of impacts by comparing the "current state" and the "future state".

An evolution of the LL model described is represented by the FormIT methodology, developed by researchers at Luleå University of Technology to support user involvement in LLs [56]. The FormIT approach [57] has been developed in the Botnia Living Lab as a human-centred approach mainly used in IoT innovation projects, following three cycles: 1. Concept Design; 2. Prototype Design; 3. Final System Design. Three phases are included in each cycle, repeated iteratively: Generate Needs; Design and Evaluate. In addition to the three main cycles of the LL, the initial planning phase, and the final commercialisation phase [58] identify the decision-making process.

In 2017 The Living Lab Network [43] proposed a variation of the LL model, representing as a propeller the FormIT model in the integration with the 4CO model [59] and testing it in the implementation of territorial and urban LLS. The LLs, understood as territorials models of innovation, become "ways of creating communities of active citizenship, promote co-creativity and represent micro-centralities capable of innovating and supporting existing territorial centralities or activating new ones" [60].

For this purpose, in this new methodological proposal, the LL is structured as a propeller built on the three main phases, thus redefined [45]:

4. Co-design cycles: appreciate opportunities, design concepts and co-evaluate concept;
5. Co-production cycles: appreciate opportunities, design tactical micro-actions and co-evaluate citizen experience;

6. Co-decision cycle: appreciate opportunities, design rules system and co-evaluate scaling-up experience.

The three cycles are preceded by a phase of co-exploring and conclude with the implementation of a co-governance model.

Therefore, translating the purpose of the LL from the generation and validation of a product to the co-creation of a collaborative decision-making process, from the production of a finished object to the co-production of a process, from the general "real-life context" to the specific "places of environmental and cultural heritage", a particular application of the LL can be identified as a methodological framework for the activation of a process of adaptive re-use and enhancement of CH, flexible according to the context variables that the specific case study requires.

In the present case, oriented to the adaptive re-use of an abandoned and disused CH, a variant of the LL approach has structured, strongly characterised by the need to make the research process coincide with that of active regeneration on the territory, at the same time engaged in the reopening of the asset. In particular, a collaborative decision-making process for the activation of a Creative Living Lab (CLL) has been outlined and tested, structured considering the following phases that have occurred over time (figure 1).
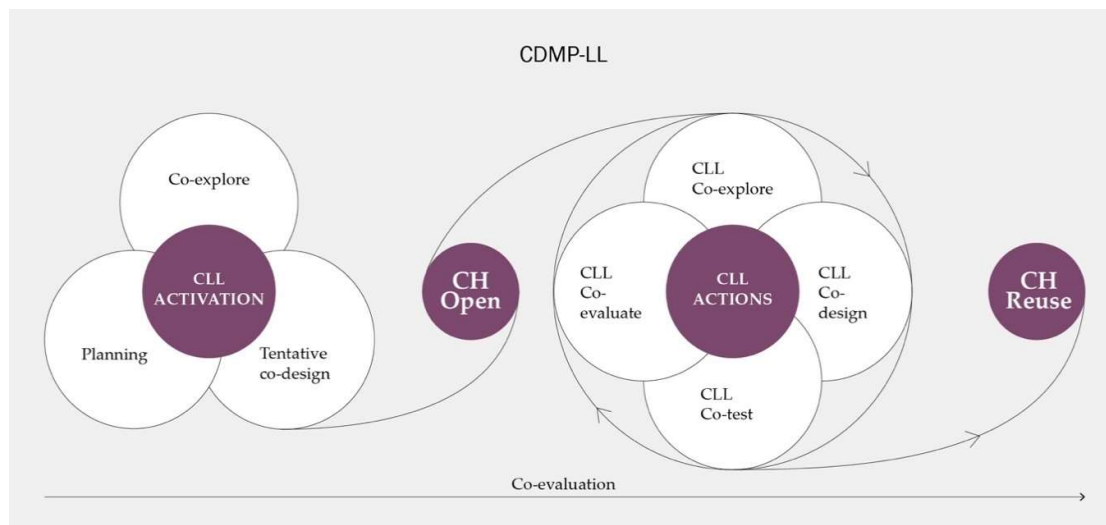
Figure 1. Collaborative Decision-Making Process Living Lab: A methodological proposal for the cultural heritage adaptive re-use

Planning: In this phase, different actions are developed to identify the characteristics of the CH under examination and to identify the enabling conditions [61], the aim to be pursued, the prospects to be taken into account, the necessary skills to be involved, the scales of analysis, the features of the context and the limits or constraints that may influence the decision-making process to be activated, as well as the configuration of the network of actors who coordinate and guide the process phases and the planning of the communication and dissemination campaign of the current operation.

Co-explore: A survey on the "current state" of the CH, the context, and the users directly or potentially interested, to take over objective data and subjective preferences through deliberative evaluation techniques. The aim is to detect the criticalities, the perceived potentials [43], and to identify shared perspectives.

Tentative Co-Design: Starting from the results obtained in the Co-exploration-phase, this is a step oriented to the identification of the main characteristics of the CLL through the first action planning, and the selection of actions able to build a shared collective awareness. In this period, the network expansion of actors directly involved in the process is activated.

Cultural Heritage re-Open: we arrive at the reopening of the church after the third phase of the methodological process, highlighting how only after a complex phase of identification of needs and construction of awareness of the values recognised to the CH has it been possible to trigger the

conditions for a real change. The reopening of a long-disused asset inevitably shifts the balance, making it necessary to integrate the Tentative Co-Design with the new opportunities generated.

Co-design: every single activity of the CLL becomes a decisional opportunity [62] to identify and test possible re-uses of the cultural good, revealing shared scenarios and producing, at the same time, new forms of social, cultural, and economic capital in the reference context.

Co-evaluation: in the experimented methodological process, expression of constant interaction between research activity and practice on the territory, Co-evaluation is a transversal action present in every phase of the process. In each phase it is possible to share the results with the other actors involved in the decision-making process, to verify their multi-dimensional components and to express quantitative and qualitative indicators generated by the active collaboration of the community through the decision-making process, useful to evaluate the impacts of the actions carried out.

2.2. The elicitation of values by deliberate valuation techniques

The identification and characterisation of valuation techniques to elicit the complex values emerging from the processes of adaptive re-use of the CH become particularly significant to assess both the values of use and non-use of the asset [6,63], and all the intrinsic values, understood as "glue values", capable of generating new social capital in the patrimonial community around the church.

The deliberative valuation techniques include both monetary and non-monetary tools [64–66] useful for eliciting the values that characterise the LLs' methodological approach to the adaptive re-use of a cultural good. The scientific literature tends to subdivide these techniques into deliberative, analytical-deliberative, potentially-interpretative, interpretative, psychometric-deliberative, and psychometric [67,68]. These techniques can be said to be included in the broader cataloguing of methods defined for the evaluation of ecosystem services: those based on revealed preferences and those related to declared preferences [69].

The methods based on detected preferences coincide to a large extent with the techniques defined by Kenter as "interpretative" [67], which include:

- direct observation: human action and behaviour reflect social value;
- documentation: the consultation of textual, photographic, historical material returns information on human preferences concerning the issues addressed;
- media/social media analysis: the analysis of shared material on the theme or place of interest allows us to obtain data related to the reference values.

If the methods based on the detected preferences observe behaviours and analyse documents to indirectly determine people's preferences, those techniques built on the declared preferences method are based directly on the statements made by the stakeholders questioned to express a value. These include the following potentially-interpretative deliberative techniques:

- Interviews: acquisition of a deep understanding of the stakeholder's judgement on a specific topic or place;
- Questionnaires: structured questions to collect information on the values expressed by the interviewees, generically traced back to a given set of values/actions and a Likert scale to assess their relevance;
- Storytelling: analysis of the experiences, relationships, stories of the participants to obtain information on the values expressed directly or indirectly by them;
- Participatory mapping: combines the tools of modern cartography with participatory methods to map the values and benefits found in a specific context by creating a physical or digital map to indicate the characteristics of value (and/or problems) and sometimes classifies them by importance [70,71];
- Participatory GIS (PGIS): combines the participatory mapping method with GIS spatial analysis techniques;
- Public Participation GIS (PPGIS): emphasises the local level of stakeholders involvement to promote knowledge production by local non-governmental groups;

- Focus group: activates group discussions allowing information to be obtained based on the interactions arising from the thematic discussion;
- Expert-based: this technique uses the professional knowledge of experts to assess the relevance of values, explaining the benefits and critical issues at stake. An example is the Delphi method [72];
- Q-method: a qualitative method that uses written statements to classify stakeholders in groups, corresponding to specific value orientations [73,74]. Analysing individual interests and attitudes, through Q and post-sort interviews, the values identified by the interviewees are revealed;
- Scenario simulation: provides alternative images of how the future might unfold. Frank Susanne et al. [75] used this method with GISCAME, a software to simulate and evaluate land-use change and the impact of land management scenarios on the production of ecosystem services [76].

Among the deliberative techniques, there are other practices useful for eliciting values in collaborative processes, including in-depth discussion groups and citizens' juries, where small cross-sections of the public, through a "verdict", express a considered judgment on a shared and regarded as a relevant issue.

Altogether, interviews and questionnaires are the most non-monetary deliberative techniques used to elicit values. Frequently, observation methods, expert-based methods, and documentation-based techniques are also used, followed by social media-based, participatory mapping and scenario simulation. Moreover, it has been found that as in the research dedicated to the evaluation of cultural ecosystem services [69] non-monetary techniques are applied to identify a broader range of values than those identified with the monetary techniques.

In general, all the listed methods are mainly used to evaluate recreational and tourism services, much less to investigate the field of social relations, knowledge systems and cultural diversity, which is strongly influenced by the variety of the ecosystems at stake [77].

2.3. Co-evaluation in collaborative decision-making processes

In the hybrid and collaborative dimension of approaches for the adaptive re-use of CH, the evaluation and articulation of the decision-making process play a strategic role, particularly for those goods whose value, in the absence of a market, is not reflected in traditional economic estimates. The value of these assets can be understood as the expression of complex values [78,79], deriving from structured social planning through the active involvement of informal and/or formal groups that cooperate intending to restore to the spaces a value of use, a value independent of use and intrinsic value [80].

In this context, co-evaluation is able to include stakeholders in the whole decision-making process, contributing both to the project and the evaluation phases. Starting from applications in the fields of education and marketing, co-evaluation allows the user to learn from the activities of others and, developing the ability to discern between positive and negative aspects, to identify ways to improve, increase, and explore individual and collective opportunities. Therefore, co-evaluation can be understood as a tool able to integrate users in the process, empowering him. The citizens, in this way, learn to refine observation and differentiate the perceptions, to select the relevant elements and to relativise judgements (own and others'), and to attribute meaning and value to the actions [81].

In particular, the experiences developed in the field of didactic activities [82] makes it possible to test a co-evaluation process to be included in the methodological structure of the CLL, according to the following main steps:

- development of lists of shared indicators and negotiations between experts and users;
- individual evaluation of the experience by both experts and users participating in the process, scoring each indicator according to a Likert scale;
- indicators ranking and comparison between the preferences and contents of the answers, analysing the respective attributions of a score;
- shared indicators verification and, in case of disagreement, comparison of positions through mutual dialectical observations.

The interaction that develops between the participants in the decision-making process (centred on the understanding of the reasons related to the choices) makes it possible to overcome the individual expression of judgement, rather encouraging co-operation and the origin of relational values and shared preferences, associated with relationships both interpersonal and guided by political and social norms [83]. In this sense, co-evaluation techniques are appropriate tools in complex, interactive and incremental decision-making processes, proving to be particularly significant in assessing the social and cultural impacts generated by actions of adaptive re-use and enhancement of existing heritage.

3. The case study: the SSMOLL experiment

The case study was tested in the historic centre of Salerno, in an area particularly dense with ecclesiastical goods that, over the centuries, have characterised the urban landscape. 53 religious buildings were found in the historical centre of Salerno. Out of 15 large monasteries, 9 have been re-used through the implementation of private functions, hotels, health services, barracks and school equipment. Of the 38 churches present, 17 are deconsecrated. Specifically, 11.8% of all the churches are now in a state of abandonment, 35.3% are underutilisation, while 52.9% have been converted into associations for cultural activities.

Among the deconsecrated churches in a state of disuse is the former church of San Sebastiano del Monte dei Morti, known as "i Morticelli", built-in 1530 in Largo Plebiscito and disused since the 1980s (figure 2). Located behind the Cathedral, the church, now owned by the municipality, is one of the four octagonal churches in the city. It is a former baptistery, located on an axis that acts as a hinge between the southern part of the old town, currently dedicated to commercial and tourist activities, and the northern area, with a purely residential character, with large buildings in disuse and far from the main city flows and services.
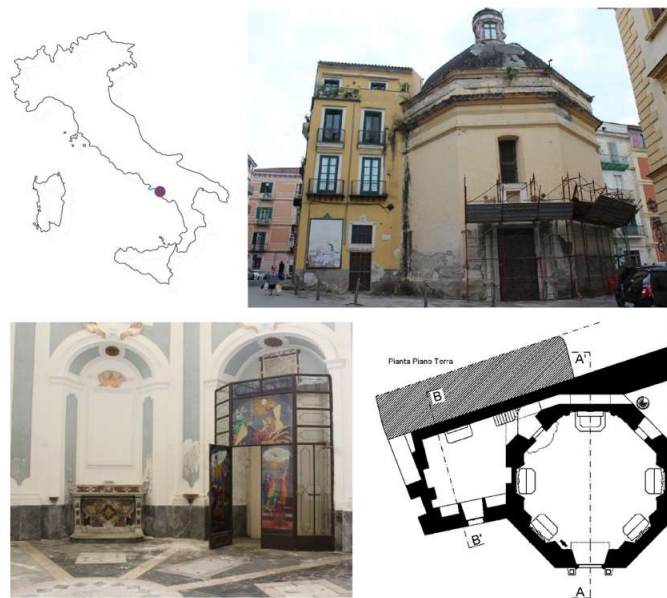
Figure 2. Church of "Morticelli", Salerno, Italy

In the process undertaken to reactivate this cultural asset, the activation of a CLL has been tested to verify the opportunity of adaptive re-use of space, within a broader community-driven and culture-led collaborative decision-making process [84–86] [43] [44]. The project is called SSMOLL, "San Sebastiano del Monte dei Morti Living Lab", and started in March 2018. The implementation of the SSMOLL CLL follows the procedure described in Section 2, declining the methodology phases according to the interaction with the practice.

3.1. Planning

The Planning phase of the process coincides with the setting up of the CLL and the activation of the partnership of the quadruple helix [45], in this case, composed by the Department of Architecture (DiARC) of the University Federico II of Naples, the Municipality of Salerno, and the Blam collective. The collaboration has been formally established by a scientific agreement temporarily entrusting the church to the Blam collective to reopen the space and trigger the process of co-operation between all the actors involved.

In this first phase, the objectives of the process have been defined:
- to identify new functions and related values for the use of the CH;
- to build and enhance social and professional networks able to connect people and their territory;
- to activate a more comprehensive process of regeneration of the historical centre of Salerno starting from the re-use of the former "Morticelli" church.

Subsequently, the project scales were defined:
- micro, concerning the re-use of the former church of the "Morticelli";
- meso, concerning the construction of a cultural district through the networking of the former churches in the historic centre of Salerno, which is being resigned or where a re-use process is already underway;
- macro, referring to the activation of a process of regeneration of the historic centre of Salerno through specific interventions developed and implemented through a bottom-up approach (figure 3).
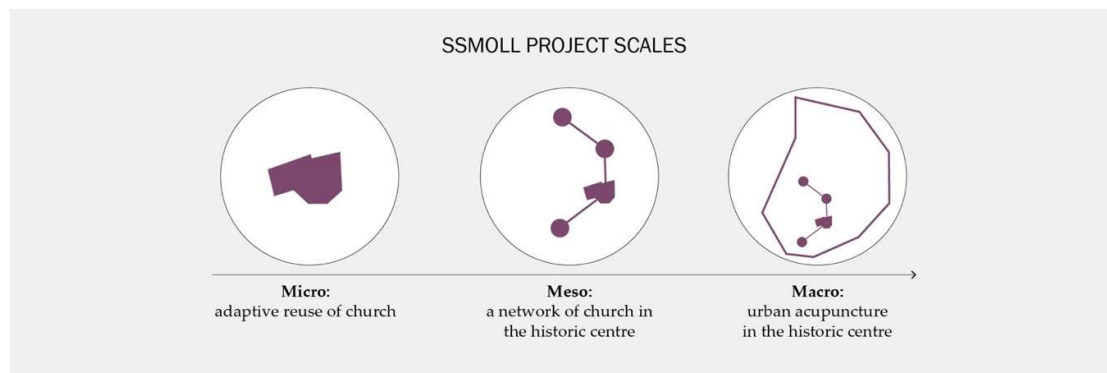
Figure 3. Fields of intervention

In this perspective, the construction of a flow chart made it possible to set the main objectives of the project, the sub-objectives and the related possible actions to be implemented to pursue them. Finally, the analysis of the context, its potential and its limits, allowed to structure the decision process and organise the actions useful for the co-exploration phase.

3.2. Co-explore

The months of activities, useful to open the church, coincided with the phase of co-exploration, aimed at investigating the "current state", i.e. the analysis of the characteristics of the cultural asset and the urban and social context, the mapping of stakeholders, the construction of territorial partnerships and the involvement of citizens in the process under construction through the implementation of deliberative evaluation techniques (table 2).

Co-exploration phase

Activity	Objective	Partner	Techniques	Tools	Fields	Image
Web platform opening	Communicate and involve citizens online	Blam	Media analysis	web site; facebook; instagram	Mi Me Ma	
Survey on a wide audience	Investigate the relationship between the citizens, the territory and the church	Blam; DiARC	On-line survey	Google forms	Mi Ma	
Investigation of a specific group	Investigate the relationship between the citizens, the territory and the church	Blam; DiARC; Ass. Teatri Sospesi	Video-interviews; Storytelling	Video	Mi Ma	
Off-line communication	Communicate and involve citizens off-line	Blam; shopkeepers	Gamification	Printing products	Mi Ma	
Territorial exploration	Co-explore the neighborhood	Blam; Ass. Arcan; Ass. Areté; Primary School	Gamification	Serious Urban Game	Mi Me Ma	

Mi: micro
Me: meso
Ma: macro

Table 2. SSMOLL co-exploration phase

The first operation was the realisation of technological support constituted by the web platform (www.blamteam.com), with the help of social networks (Facebook, Instagram), used both to spread the information about the project and to collect points of view and testimonies among citizens, involved in the planning and evaluation process. The web platform and social media have made it possible to accompany the implementation of the various interventions by constituting the many voluntary data collected repository (interviews, photographs, stories, memories, etc.). Moreover, the web instruments encourage the direct involvement of citizens who know, produce knowledge and participate in digital exploration, identification of shared preferences and implementation of choices. In this sense, social media support collaborative decision-making by facilitating public participation in an active, fast and horizontal way through digital storytelling [87], which can also be monitored through social media analysis to try to investigate the field of social relations, knowledge systems and cultural diversity of the community of reference.

Subsequently, through the use of deliberative evaluation techniques based on the preferences detected (direct observation and documentation) and declared preferences (structured online questionnaires, semi-structured video-interviews and storytelling), qualitative and quantitative data were collected to investigate the relationship between citizens, their territory and the church.

In detail, 55 citizens of the historic centre of Salerno, aged between 25 and 75 years, including students, employees, local artisan and retired people, were interviewed. The interviews with six total questions were semi-structured into three main sections:

- the first one concerns the relationship with the city of Salerno. To users were asked to define, through the five senses, the potential and criticality of their city;
- the second one concerns the relationship with the former "Morticelli" church, built to intercept stories and memories connected to it;
- in the third one, the visions about a possible reopening and re-use of the church were brought out, to identify needs and desires, latent or explicit.

Online, instead, 200 questionnaires were administered, structured with the same articulation of the interviews, but leaving more space for suggestions on possible re-use of the former church and alternative ways of collaboration. The questionnaire was articulated as follows:

- "Let's get to know each other", informal cognitive phase in order to collect personal data, related to the education and origin of citizens according to the city's districts;
- "The Salerno you live in", useful to identify habits and ways to frequent the city;
- "Your impressions about Salerno", a qualitative survey phase on the cultural offers present in the city, to know the degree of satisfaction of users expressed on a scale from 1 to 5;
- "How much do you know the Morticelli", to explore the degree of knowledge of the abandoned space;
- "The idea", a phase in which the user has been presented with a set of possible re-uses of the historical building to choose from on a scale from 1 to 5;
- "How can we collaborate", the last step of the questionnaire focused on the in-depth knowledge of the user, his habits, his willingness to collaborate by donating time, skills and money.

To actively involve citizens in the ongoing process and allow them to get to know the former church that is being reactivated, structured communication and knowledge actions on the dynamics of urban gaming have been promoted on the territory to stimulate the broadest possible inclusion and integration. Specifically, they were made:

- the communication campaign "SSMOLL Bombing", which saw the distribution, in the most significant points of the neighbourhood, flyers and posters with interactive, playful activities to be carried out to obtain useful information about the church and the process in progress. The Qr-code printed on flyers and posters, connected to the web platform, has allowed expanding the opportunities to get to know the church and to collaborate to make it known through more than 200 interactions with the dedicated website;
- the photographic treasure hunt "Have you seen me from this view?", a territorial exploration in the form of serious-urban-game [88,89] which has transformed the urban context into a playful space of discovery. Social sharing and related events have contributed to the rediscovery of lesser-known places in the neighbourhood, increasing the number of photo shoots of the area shared on social networks, as well as the knowledge of the same places by residents and citizens. More than 100 images of the historic centre have been produced, with more than 2,050 preferences expressed through a popular jury system activated on the web.

The time dedicated to the co-exploration phase was necessary to analyse not only the physical characteristics of the church, partially compromised by the years of neglect but also to identify the values associated with the historical and cultural heritage by the citizens. On the one hand, the former religious building is characterised by a high symbolic value, mostly noted by the people who had visited the church before its closure. On the other hand, the loss of all the sacred apparatuses, the small size and its unique octagonal shape, as well as its central position in the historical centre, allowed potential users to imagine new possible uses of the space.

The key words recurring among the users when they first entered the former church, after its reopening, and those mentioned in the answers to the questionnaire, "welcoming" emerged first, followed by "fascinating" and "unexpected" terms, used to express the feeling transmitted by the Morticelli church.

3.3. Co-design

Following the co-exploration phase, the reopening of the former church made it necessary to reformulate the methodological path already outlined. The activities carried out in proximity to the event organised for the reopening, required a less structured phase defined as "Tentative co-design". With this term, we mean a deliberately labile and open phase to co-evaluate the results of the Co-exploration and to include the changes in the scenario suggested by the community that progressively was created around the Morticelli church.

The reopening, after more than thirty years, of the former church, has transformed it into an opportunity space [90], a catalyst of occasions, meetings, visions and ties, a generator of new values and able to self-regenerate the church's glue values.

In particular, the activities have divided into:

- search for economic resources through fundraising operations and participation in tenders;
- co-design of actions in the micro, meso and macro areas previously identified;
- co-evaluation of preferences and clarification of shared re-use opportunities;
- expansion of networking opportunities with local actors.

From the indicators that emerged during the Co-exploration phase (identified through surveys, video-interviews, documentation and media analysis) the following thematic clusters were identified as significant to select the actions to be carried out, useful to test possible re-uses of the former church space (table 3): artistic installations related to contemporary art, ceramics, architecture and photography; concerts; theatre performances; reading; artistic performances; installations; public assemblies and meetings.

Co-design phase: production of activities through co-explore, co-design, co-test and co-evaluate phases

Activity	Objective	Partner	Techniques Tools	Fields	Image
Workshop and educational laboratories	Testing the church as a laboratory to co-design future scenarios in the neighborhood	Blam; DiARC; schools; associations; craftsmen; artists	Focus Group; brainstorming; scenario simulation; expert based; self-construction; co-evaluation	Mi Me Ma	
Concerts	Testing the church as a sounding board encouraging the performance of young artists	Blam; ass. Tabula Arsa	Intervews; surveys; direct observation; co-evaluation	Mi	
Theatral show	Testing the church as an experimental informal theater	Blam; ass. Erre Teatro	Storytelling; interviews; direct observation; co-evaluation	Mi	
Reading	Testing the church as a place for the production and reading of poems/writings	Blam; UniSa	Storytelling; interviews; direct observation; co-evaluation	Mi	
Artistic site-specific performance	Testing the church as a place for site-specific performance co-production	Blam; Ass. Arteria; Ass. Teatri Sospesi	Discussion groups; storytelling; interviews; direct observation; expert based; co/self-evaluation	Mi	
Artistic installations	Testing the former church as a gallery for young artists	Blam; DAMP; Ass. Fabrica	Storytelling; interviews; direct observation; co/self-evaluation	Mi Ma	
Assemblies and public meetings	Testing the church as a meeting place where to co-design with the community	Blam; DiARC; Licei	Partecipatory mapping; juries of citizens; brainstorming; direct observation; co/self-evaluation	Mi Me Ma	

Mi: micro
Me: meso
Ma: macro

Table 3. SSMOLL co-design phase

For the activities produced it has been taken over:

- the satisfaction index of the participants through a scale from 1 to 5;
- the average rate of participation in the individual activities;
- the adaptive capacity of the former church to accommodate the different activities tested, expressed on a scale from 1 to 5;
- the willingness to donate and the willingness to pay for each specific activity proposed.

After the "Tentative co-design", the Co-design phase of the possible actions of the historical-cultural good adaptive re-use has been transformed into the production of an autopoietic circular process [78,91–93]. Each action has been designed as an iterative and collaborative moment of the overall process, including in it the phases of:

- Co-exploration, in which the participants (students, artists, residents, etc.) co-produce material of knowledge about the "Morticelli church" and the surrounding urban fabric through interviews, video-interviews, urban explorations, brainstorming;
- Co-design, in which all the participants, guided by the Blam collective, in moments open to citizens, co-create and co-test possible re-use solutions;
- Co-evaluation, in which the participants give back to the whole community the work produced on the occasion of confrontation, through events and meetings, stimulating feedback and reactions, and activating modes of interaction through collaborative evaluation.

In this way, each action, as a result of the co-operation between the actors of the quadruple helix (universities, governments, companies and citizens), becomes an opportunity to explore new opportunities, involve new stakeholders, test in real-time possible new uses and obtain useful data to co-evaluate the experience.

Where it was not possible to implement the elaboration of an indicators ranking, shared and negotiated between experts and users, it was imposed a phase of individual experience evaluation by both experts and participants. This phase was followed by the comparison of the responses and feedback obtained, to carry out a self-evaluation of the experience, to explain its potential and criticality and to verify its replicability.

4. Results

The methodological process with which the activation of a CCL for the adaptive re-use of the former Morticelli church has experimented is still in progress. The relationship of constant interaction between research and action has allowed to redefine the initially structured methodological approach and to experiment an adaptive collaborative decision-making process to activate and generate new value chains [94].

The questionnaire distributed before the reopening of the "Morticelli church" involved more than 200 users, of which 47.7% in the 26-35 age group, 62% women and 62.5% of graduates. The historical centre is one of the most frequented places in Salerno by the participants in the survey, and 56.6% of them claim to participate in cultural initiatives in the historical centre rarely (once a month) cause the quality of the proposals offered and the scarce availability of public transport. More relevant, 47.7% of citizens are dissatisfied with the cultural offer. More than 80% of the participants in the activities organised within the CLL identify the cultural sector (in particular concerts and exhibitions) as the key to success in promoting a process of redevelopment of the urban and social context of Salerno.

Concerning the former Morticelli church, through the surveys, the values that users recognise in the historical building (before its reopening) were also investigated, based on the CES (Ecosystems and human well-being: current state and trends) classification [66]. The central values recognised are the historical and cultural values, followed by the aesthetic and social value. 96% of the interviewees and respondents to the questionnaire didn't know the name of the church and hadn't nevermore visited it. Nevertheless, 97.6% of people were curious to see and to know the space, wishing to use it for exhibitions and art shows (25%), workshops (21.2%), neighbourhood meetings (17.1%), concerts (14.5%), with activities to be held at least once a week for 65.9%.

The emerging needs in the first phase of co-exploration led to the choice to characterise the LL for adaptive re-use of the divested asset with a creative and cultural meaning.

After the first year of activity, the former Morticelli church hosted more than 3,000 visitors, carrying out cultural and creative activities for more than 1,000 hours. More than 32 cultural and social activities were carried out, dedicating over 150 hours to workshops and training activities, multiplying the opportunities for cultural encounters for residents involved in co-exploration and co-design.

In particular, the site-specific performances were the most attractive, as the high participation rate is also supported by a medium-high willingness to donate and pay. The theatrical performances designed and realised for the church of "Morticelli" were very successful with a high percentage of approval (Table 4).

Action clusters	Average participation of people/event (No.)	Average satisfaction index (1 to 5)	Adaptive space capacity (1 to 5)	Willingness to pay/donate (average in €/event)
Workshop and lab	32	4	3	15€
Concerts	42	3	2	10€
Theatre performance	38	4	4	8€
Reading	29	2	2	6€
Site-specific artistic performance	54	5	5	12€
Installations	46	4	5	8€
Public assemblies and meetings	28	5	4	/

Table 4. SSMOLL activities evaluation matrix

All the activities carried out involved participants aged between 6 and 78 years, with the highest participation rate being in the 28-48 age group. The SSMOLL CLL extended the collaboration network to:

- five educational institutions, including three high schools in the city of Salerno, the Department of Building Engineering Architecture of the University of Salerno and the Department of Architecture of the University of Naples Federico II;
- cultural institutions, like churches, museums, archives, theatres;
- more than 20 commercial realities, including traders in the historic centre and businesses in Salerno;
- 5 between foundations, banks and clubs between local and national;
- over 40 professionals, including local and national artists and artisans, architects, photographers, video-makers, 82% of whom under 35;
- the municipal administration of Salerno, with the different departments of town planning, culture, social policies, youth policies and social innovation;
- over 30 non-profit associations and committees in the area;
- volunteers in SSMOLL activities.

The relationships triggered by the formation of the LL were thus analysed by type, quantity and density of the bond developed over time. To this end, the collaborations were divided into single, sporadic and periodic, articulated in three main stages during the period of activity of the CLL (figure 4).
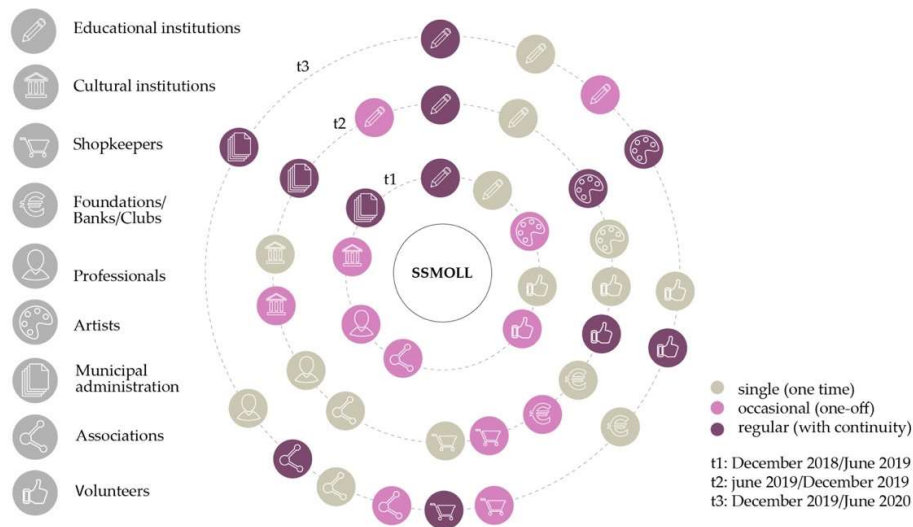
Figure 4. SSMOLL collaboration system activated over time

The first year of the SSMOLL project has also seen the formation of under-35 regenerators team that, within the CLL, has constituted a work experience still in progress, catalysing about 35.000€ between crowdfunding operations, donations for events, prizes for won tenders and donations from associations, banks and banking foundations. The contribution of volunteers, professionals, artists, and all those who have chosen to donate time and experience to the project has not been estimated.

5. Discussion

The tested methodological approach has been built around the idea that a process of adaptive re-use of a CH through the implementation of a Living Lab, can not only be aimed at identifying a new function by evaluating possible scenarios and outcome but can itself be generative of new values during the path of re-use undertaken, with repercussions on the entire urban context. The user-centric characteristic of the Living Lab allows a significant transformation of the urban stakeholders from users to actors in the process of re-appropriation and co-management of the asset, encouraging the production of social, cultural and economic values first of all.

Some components of the methodological approach identified become crucial. If the adaptive re-use of a CH is particularly significant when a "bottom-up" approach was implemented, at the same time, it becomes crucial that the quadruple helix is particularly virtuous to ensure full collaboration between the regenerators present on the territory, researcher, residents and associations, private individuals and the government. Institutional dialogue, as well as economic resources and scientific expertise, are the basis for effective implementation of an LL for the re-use of a CH.

The CH state is relevant to understand its usability during the activated process. In the case of an asset in decommissioning, the reopening, preparatory to a phase of activation of the LL, is able to shift the balance of the process in political, economic and social terms. If, on the one hand, the reopening of the decommissioned asset confers confidence in the process taken, on the other hand, it catalyses unforeseen opportunities favouring the emergence of human ties, as well as the investment of economic resources, as it assumes a significant role in the production of innovation and territorial impact [95].

The LL actions become a way to experiment in real-time new uses of space, following what emerged in the Planning phase, but also to investigate and produce new values capable of redefining the public common good, understood as the place where the production of value is activated by the involvement of citizens [96]. The development of actions through a collaborative process with the stakeholders-actors involved becomes crucial, and at the same time complex. Therefore, it is essential to try to define the individual test actions better, limiting the consumption of energy and favouring

the broadest possible collection of data for each of them. On the whole, the Co-planning phase, which includes for each action that carries it out those of co-exploration, co-design, co-test and co-evaluation, could be defined in advance in its timing, to plan a cycle of initiatives sufficient to bring out the preferable vocation of re-use of the asset.

Although this is evident, the risk, or rather the "unexpected" of action in the field, is that the activities of the LL will themselves, in their diversification, become identified as a possible modality of re-use of the CH. In the case of a CLL, very often this is possible, as well as desirable in some cases, but it is also true that it does not always correspond to the most sustainable choice.

Finally, in a decision-making process such as the structured one, co-evaluation becomes an experimental tool of relevant importance to include stakeholders in the decision-making process, and concretely make them both aware and promoters. What emerges from co-evaluation feeds the autopoietic process able to generate new values related to the cultural asset and the social capital linked to it. The research aims to develop techniques and modalities of co-evaluation to support adaptive community-based re-use processes.

6. Conclusions

The CLL allowed to structure and test an adaptive collaborative decision-making process for the adaptive re-use of the former Morticelli church, requiring a considerable commitment shared between the different promoters in the different phases of the SSMOLL project. At the same time, it allowed generating a heritage community [11], ensuring the support of structured governance to coordinate and manage the different activities. Moreover, the CLL allowed to make a historical-cultural heritage accessible and to put it at the centre of an autopoietic process of generating intrinsic values [6,36,37] capable of determining social, cultural and economic impacts.

The multiplicity of actions developed in the space of the former church over the year is one of the main sources of attraction of the asset, as it consistently represents the hybrid and dynamic vocation of a place in the transition to a new destination of use of which all, through the CLL, can become co-actors.

The strong territorial connotation has proved to be a fundamental characteristic, capable of attracting local funding, which precisely in the economic and cultural development of the territory to which it belongs sees concrete opportunities for achieving its investment objectives in a "global" perspective, in line with what is expressed by the SDGs 9, 11 and 15. For those goals, the new regeneration processes are considered capable of configuring transversal interconnections between urban and territorial heritage.

From this first analysis of the results achieved, it can be seen how cultural production in the adaptive re-use of a historical building becomes significantly relevant if planned according to a tailor-made logic [97]. The uniqueness of the production and realisation of cultural and creative activities contributes to binding the user to the place through an identity path, increasing the degree of involvement and the willingness to donate or pay of the users. In fact, in these collaborative processes, the importance of the "willingness" of communities not only to pay for cultural services, but also to donate their own economic and time resources and, above all, the willingness to cooperate in carrying out together actions of valorisation of the places of their territory useful for the whole community and future generations.

According to the above perspective, adaptive re-use is configured as an implementation tool of SDGs 7 and 11, favouring the passage from the vision of cultural heritage as an asset to be preserved to a capital to be valorised and re-used through the involvement of the community able to influence social interaction, change of attitude, lifestyle and behaviour (SDG 3, SDG 8).

The research process intends to restart from these considerations to investigate the capacity of the glue-value to generate different modalities of co-operation, and to support and expand inclusive productivity, in the logic of Zamagni's inclusive prosperity, [98] determined by an adaptive re-use process as a result of collaborative decision-making.

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