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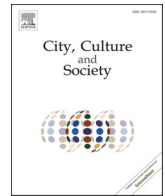
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# Cultural heritage adaptive reuse in Salerno: Challenges and solutions

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## ABSTRACT

The adaptive reuse of cultural heritage contributes to heritage conservation, leveraging on the heritage potential to enable sustainable development and enhance urban livability. Yet, it is seldom applied as intervention. This research furthers the knowledge on the challenges to the adaptive reuse of cultural heritage. Through the case study of Salerno (Italy) and a participatory methodology, this research organized a stakeholder engagement workshop, facilitating the interaction of stakeholders—representing the public, private, civic, and knowledge sectors, while using a theoretical framework based on the six steps of the UNESCO Historic Urban Landscape approach to adopt a multi-scale perspective. The content analysis of the data reveals 55 themes encompassing challenges and solutions. These themes are presented in a general overview, followed by an in-depth reporting of the five most discussed themes, i.e. knowledge production and management, participation, valorization, approaches, and cooperation. Besides the contribution to science, this research also offers an overview of challenges and possible solutions for prospective stakeholders in the adaptive reuse of cultural heritage, informing future decision- and policy-making activities towards greater sustainable development within the built environment.

## 1. Introduction

Cultural heritage is recognized as an enabler and driver for sustainable development (United Nations General Assembly, 2015; United Nations (Habitat III), 2017) and urban regeneration (Plevoets & van Cleempoel, 2019; Throsby & Petetskaya, 2021), contributing to enhancing urban livability while maintaining urban identity (CHCfE Consortium, 2015; Chen et al., 2018; Guzmán et al., 2017). However, cultural heritage can only contribute to sustainable development when conserved. Adaptive reuse is a category of intervention on the existing built environment that has proven to not only conserve cultural heritage, but also generate cultural, economic, environmental, and social benefits (Architects' Council of Europe, 2018; Conejos et al., 2014; Fuentes et al., 2015; Galdini, 2019; Gravagnuolo, Fusco Girard, et al., 2021; Heath, 2001; Heller, 2016; Kee, 2019; Plevoets & Sowińska-Heim, 2018; Szopińska-Mularz, 2021; United Nations (Habitat III), 2017). Adaptive reuse also entails challenges hampering its adoption and implementation “especially when it pertains to heritage” (Conejos et al., 2016, p. 508). Examples of these challenges are the lack of skilled tradesmen for the preservation works and dealing with the social values attributed (Conejos et al., 2016).

Even if challenges to the adaptive reuse of cultural heritage have been identified in previous studies (Table 2), further research is needed. Firstly, to consider the “views of other stakeholders (other than architects)” (Conejos et al., 2016, p. 517). Secondly, to focus on properties and urban areas formally or informally recognized as heritage, hence accounting for heritage specificity, i.e. its values and significance (Australia ICOMOS, 2013; Bullen & Love, 2011a; Conejos et al., 2016). Thirdly, to scrutinize adaptive reuse practices in varied geographical contexts, possibly suggesting solutions (Conejos et al., 2016, p. 514 and 517).

The present research—part of the CLIC<sup>1</sup> project—aims at contributing to identifying the challenges to the Adaptive Reuse of Cultural Heritage (ARCH) and possibly solution to address the challenges, using the city of Salerno in Italy as case study. Hence, the research questions addressed are: What are the challenges affecting cultural heritage adaptive reuse? How to overcome these challenges? To identify these challenges and solutions, a wide variety of stakeholders participated in a stakeholder engagement workshop and assessed ARCH in the City from a multi-scale perspective. As a result, not only the findings provide evidence of these ARCH challenges and solutions, but also, they expand the related knowledge. Furthermore, this overview of challenges can

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<sup>1</sup> CLIC stands for Circular Models for Cultural Heritage Adaptive Reuse.

promote the development of evidence-based solutions and inform future policy-making realizing the potential for sustainability embedded in ARCH through its facilitation in this local context and similar ones. This study is part of a series of studies to advance the knowledge on challenges to the ARCH examining some European cities to provide evidence of such challenges and identify commonalities among them (Pintossi, 2022).

## 2. Background

This research relies on six key concepts: namely, cultural heritage, adaptive reuse, challenge, solution, factor, and stakeholders. These concepts are defined in Table 1. Notably, cultural heritage encompasses the category of “built heritage”. The present research refers to the “built cultural heritage” as “cultural heritage” instead of “built heritage” because, at times, this latter category is defined based on a narrow spectrum of values (Tweed & Sutherland, 2007), whereas the heritage under scrutiny encompasses a spectrum of phenomena beyond “buildings”, such as its intangible dimension and the landscape.

### 2.1. Identification of challenges to the adaptive reuse of cultural heritage

Previous studies have already reported challenges encountered in adaptive reuse of buildings (Bullen & Love, 2011a; Conejos et al., 2016; Douglas, 2006; Remøy & Van Der Voordt, 2014; Yung & Chan, 2012) and urban areas (Fernandes et al., 2020; Steinberg, 1996). From these studies, the two categories of “major challenges experienced by experts” in practices of adaptive reuse have been defined as the “compliance with codes and regulations” and the “current design requirements” (Conejos et al., 2016, pp. 516–517). Both these two categories encompass a wider variety of issues (Table 2). Furthermore, the studies conducted within the CLIC project also identified obstacles in developing a local action plan for ARCH. These obstacles are the “lack of funding, regulatory gaps, the scarce interest of administrations, bureaucratic procedures too long and complex, lack of interest and participation of the local community, high level of decay of the cultural heritage, uncertainty of politics, lack of communication” (Garzillo et al., 2018, p. 21).

Despite the recommendations in policy and examples from practice, the existing research on challenges in ARCH so far focused on specific groups of stakeholders (Conejos et al., 2016), scope, and geographical settings (Pintossi et al., 2021c). While the stakeholders participating in adaptive reuse projects are users, producers, investors, and regulators (Ferretti et al., 2014; Mısırlısoy & Günce, 2016; Wang & Liu, 2021), literature mostly addresses producers such as architects and project managers (Bullen & Love, 2011c; Conejos et al., 2016; Dyson et al., 2016), and neglects users and investors (Council of Europe, 2005;

**Table 1**  
Key concept definitions.

Concept	Definition
Cultural heritage	“... resources inherited from the past which people identify, independently of ownership, as a reflection and expression of their constantly evolving values, beliefs, knowledge and traditions. It includes all aspects of the environment resulting from the interaction between people and places through time.” (Council of Europe, 2005, article 2).
Adaptive reuse	Process that “extends the building’s [or properties] physical and social functions by giving the building a new purpose while conserving its historic and cultural significance” (Conejos et al., 2016, p. 508, p. 508)
Challenge	Negative factors that are challenges, barriers, obstacles, hurdles and constraints that hamper the process, i.e. adaptive reuse of cultural heritage (Eisenack et al., 2014)
Solution	Positive factors that allow to overcome challenges
Factor	Identified element that can be either a challenge or a solution
Stakeholders	Actors that are involved in the process of adaptive reuse of cultural heritage

**Table 2**

List of challenges for adaptive reuse reported in the literature. Douglas address adaptive reuse in general instead of focusing on heritage (2006). Remøy & Van Der Voordt incidentally address formally recognized heritage (2014).

Challenge	References
Availability of reliable information	(Conejos et al., 2016)
Availability of skilled craftsmanship and materials compatible with the original ones	(Aigwi et al., 2018; Bullen & Love, 2011a; Conejos et al., 2016)
Compliance with safety requirements	(Aigwi et al., 2018; Conejos et al., 2016; Douglas, 2006)
Conflict with the local community about the new uses of the heritage	(Elrod and Fortenberry, 2017)
“Continuity of local community life”	(Yung & Chan, 2012, p. 358)
Economic viability and costs	(Douglas, 2006; Fernandes et al., 2020; Shipley et al., 2006; Tan et al., 2018; Yung & Chan, 2012)
Handling of contaminations and hazardous materials	(Clark, 2013; Douglas, 2006; Hettema & Egberts, 2020; Remøy & Van Der Voordt, 2014; Tan et al., 2018; Vrusho & Pashako, 2018)
Minimization of change	(Mehr et al., 2017; Shipley et al., 2006; Yung & Chan, 2012)
Obtainment of the approval of the change of use	(Conejos et al., 2016; Douglas, 2006; Elrod & Fortenberry, 2017; Langston & Shen, 2007; Wilkinson et al., 2014)
“Physical restrictions” (e.g. the structural grid)	(Conejos et al., 2016, p. 509; Giuliani et al., 2018; Mehr et al., 2017)
Political circumstances	(Bourne, 1996; Steinberg, 1996)
Prevention of values loss	(Mehr et al., 2017; Shipley et al., 2006; Yung & Chan, 2012)
Status of physical decay	(Douglas, 2006; Dyson et al., 2016; Remøy & Van Der Voordt, 2014)

Landorf, 2019; Li et al., 2020). Moreover, there is little emphasis on the need for integrated and holistic approaches which are advised in managing cultural heritage (UNESCO, 2011b), nor is cultural heritage the main focus of some research on adaptive reuse. Yet, cultural heritage poses specific challenges to adaptive reuse (Bullen & Love, 2011a; Conejos et al., 2016), as determining compatible new uses while adverting the undermining of heritage significance. Most challenges have been identified focusing on the site scale, i.e. buildings and urban areas, without considering the urban scale. Most research either used case studies in Oceania, North America, and Asia (Bullen & Love, 2011b; Conejos et al., 2016; Elrod & Fortenberry, 2017) or specific typologies of heritage within Europe, e.g. industrial and engineering heritage (Laconte, 2014). Further research can broaden the state-of-the-art and the understanding of challenges in ARCH concerning the variety of stakeholders, its scope and the geographical settings considered.

## 3. Material and methods

The methodology aims at i) harvesting knowledge from a broader range of stakeholders; ii) using a landscape-based approach; iii) focusing on the adaptive reuse of cultural heritage; iv) adopting a multi-scale perspective; and v) analyzing a European case study.

### 3.1. Participants

The identification of challenges and solutions (collectively referred to as “factors”) involved a broader group of stakeholders: hoping to gather a wider variety of factors, eventually contradicting or complementary (Eisenack et al., 2014). Participants were sampled purposively and opportunistically (Baker & Moncaster, 2018; Conejos et al., 2016; Patton, 2015; Sarabi et al., 2020). This sampling process was led by the local partner of the CLIC research project framing this research. Therefore, the participants’ selection reflects their idea of stakeholders of the adaptive reuse of cultural heritage in their local context. To ensure a multi-disciplinary discussion for this identification, stakeholders attending the workshop represented a variety of backgrounds in terms of

expertise, profession, and experience with the ARCH. About 41 participants contributed to the roundtable discussion, supported by six facilitators. They represented 23 separate local, national, and European organizations and institutions. Most participants were representatives of the public sector, e.g. Municipality of Salerno and the peripheral office of the Ministry of Cultural Heritage and Activities and Tourism charged of heritage; national and international researchers; and NGOs, such as local associations managing Salernitan heritage buildings (see Pintossi & Ikiz Kaya, 2020). Fig. 1 details the characteristics of the workshop participants per sector, actor (Misirlisoy & Günce, 2016), and discipline. For the non-researcher participants, the chart indicates in which phases of the adaptive reuse process they were/are mainly involved (Geraedts & Wamelink, 2009; Martani, 2015). As the figure suggests, most participants are involved in the initiation phase of the ARCH, whereas there is a lack of representation of stakeholders engaged in the construction phase.

### 3.2. Case study

The city of Salerno, about 140,000 inhabitants, is the capital of the province of Salerno in southwestern Italy, on the Gulf of Salerno. It is composed of the layering of different time periods, as the mediaeval, the 19th-century, and the post-war areas (Comune di Salerno, n. d.-c). Along with the new constructions by renowned architects, the city counts several historic palaces, gardens, religious buildings, archaeological sites, and museums; some of which are listed as local or national heritage (Comune di Salerno, n. d.-a). Although few heritage-designated areas and buildings are vacant (Lupacchini, 2020), since the 90s, the historic center has been requalified with interventions of restoration and adaptive reuse, such as the one of Giardino della Minerva.

Giardino della Minerva (Minerva’s Garden) is a former 13th century physic garden reused as a botanical garden with an herbal tearoom and a nursery. The garden is owned by the Municipality of Salerno and managed by the foundation “Salernitan medical school” (Fondazione

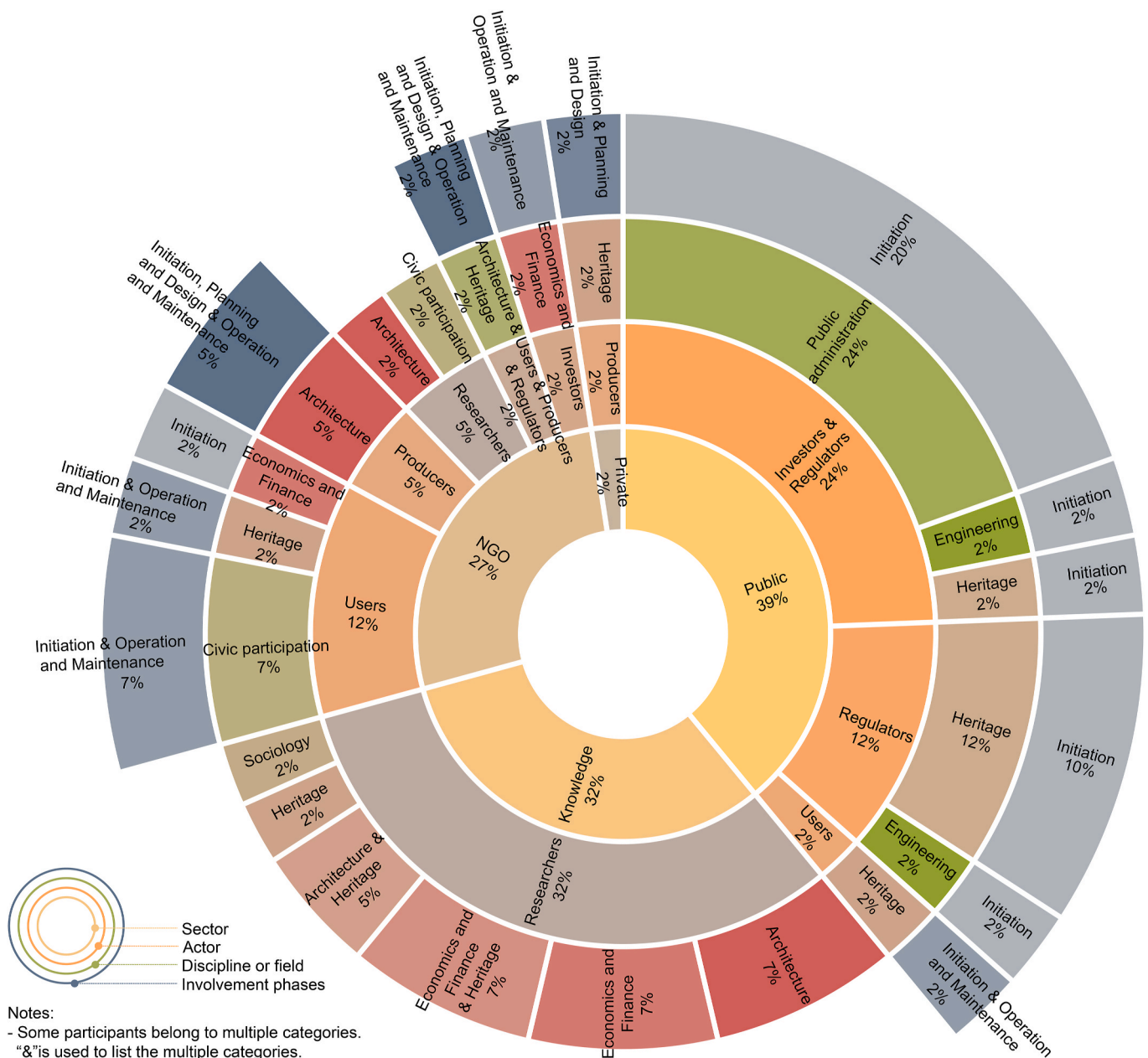


Fig. 1. Characteristics of the workshop participants.



“Scuola medica salernitana”)(Consiglio Comunale di Salerno, 2007). The physic garden, the first of Europe, was created by an exponent of the Salernitan medical school—among the most long-standing medical universities of the world—for educational activities (Capone, 2010; Comune di Salerno, n.d.-b; MP Mirabilia Srl, n.d.). Also, Giardino della Minerva presents architectural elements added in the 17th century, such as the monumental stairs (MP Mirabilia Srl, n.d.). Being a significant “place of memory” and “uncommon beauty” and counting around 50,000 visitors per year, Giardino della Minerva is an exemplar case of adaptive reuse in Salerno (Benvenuto al Giardino della Minerva, n.d.; Bohigas & Puigdomenech, 2005; Capone, n.d.; Mauro, n.d.), reason of its selection as site case for the present research.

### 3.3. Data collection

The workshop was structured adapting the World Café method (Brown et al., 2005), a participatory method to directly investigate ARCH engaging the people in identifying challenges, based on their experiences and knowledge (Bergold & Stefan, 2012). The World Café “builds on the notion of group intelligence. By organizing several discussion rounds (...) enables bringing together individual ideas into one comprehensive message”, harvesting “information from a broader perspective” (Brouwer & Brouwers, 2017, p. 37), while motivating participation by facilitating mutual learning and relationship building among participants (Löhr et al., 2020). This method has proven useful in identifying barriers, opportunities, design requirements, and potential research areas in various domains such as health, organization development and ecosystem management (Broom et al., 2013; Kavanagh et al., 2020; Palacios-Agundez et al., 2013; Silva & Guenther, 2018). Notes taken by the facilitators were analyzed. These notes reported the participants’ contributions, validated by the participant multi-disciplinary teams in roundtable discussions. To ensure a holistic and integrated perspective (Ginzarly et al., 2019), this investigation used the six steps of the HUL approach (HUL step-s) (UNESCO, 2011a; Veldpaus, 2015) as the assessment framework (see Table 3). An approach that “integrates distinct theoretical perspectives, which are usually discussed separately, to address the complex layering of various aspects of the landscape” (Ginzarly et al., 2019, p. 2).

The adoption of this holistic and integrated perspective allows to assumingly identify a wider variety of factors. On the one hand, being holistic, this perspective considers the various dimensions of cultural heritage, e.g. tangible and intangible (Ginzarly et al., 2019). On the other hand, being integrative, it acknowledges the interdisciplinary nature of heritage and adaptive reuse, the latter entailing conservation, architecture, engineering, and urban planning (Ginzarly et al., 2019; Plevoets & van Cleempoel, 2019; UNESCO, 2005). Furthermore, the HUL steps guide the implementation of the HUL approach for instance in defining action plans for conservation and management of historic urban landscapes, e.g. HUL workshop in Zanzibar (Tanzania) to identify the “the activities needed for better integration of planning and

**Table 3**

Six steps of the HUL approach used as theoretical framework. The description of the HUL steps is adapted from (UNESCO, 2011a; Veldpaus et al., 2013; WHI-TRAP; City of Ballarat, 2016) as in (Pintossi et al., 2021c).

HUL step	Full description <sup>1</sup>	Keyword
1	Map cultural, natural, and human resources	Mapping
2	Reach consensus on values and related attributes to protect	Consensus
3	Assess the vulnerability to change and development of the values and attributes to protect	Vulnerability
4	Integrate the values, the related attributes, and their vulnerabilities in the urban development framework	Integrate
5	Prioritize actions for conservation and development	Prioritize
6	Establish (local) partnerships and management frameworks per each of the actions	Partnership

conservation” (Van Oers, 2013, p. 68). This research is novel to implement the HUL steps, successfully used in developing conservation and management processes at the local level, to reveal challenges and potential solutions of interventions such as adaptive reuse. Each roundtable focused on one HUL step, while discussing with a multi-scale focus on i) Giardino della Minerva at the site scale, ii) the city of Salerno at the urban scale (hereinafter Salerno), and iii) other scales or contexts indicated as “elsewhere”, to reflect “how measures taken at the building level impact up to a global level” and vice versa (The 100 Resilient Cities in Wilkinson, 2018, p. 6). The “elsewhere” scale was intended to offer the participants the possibility to refer to specific scales or other contexts deemed relevant for the discussion.

The workshop participants voluntarily accepted the invitation to participate in the workshops. These workshops were part of the research activities of the CLIC research project for which participants signed informed consent forms. The data collected are anonymous and the result of the teams’ discussions.

### 3.4. Data analysis

All notes were transcribed and prepared to be analyzed (Zenodo: 3925602), translating Italian contributions to English and excluding notes that were neither challenges nor solutions. After this first step, the corpus undergoing content analysis included 609 contributions. This corpus was inductively and deductively coded performing a manifest analysis (Fig. 2) (Krippendorff, 1980). Particularly, the coding scheme applied during the HUL workshop was corrected to better reflect the content of the collected data. Furthermore, the inductive coding of the factors adapted the codes used in (Pintossi et al., 2021a). Afterwards, the results of this coding were reported by a frequency and thematic synthesis (Bengtsson, 2016; Krippendorff, 1980; Thomas & Harden, 2008). When reporting the results, the contributions without a “scale”, i.e. those named “not stated” (Fig. 2) were also classified as “general”.

## 4. Results

From the 609 contributions, representing 326 challenges (54%) and 283 solutions, it can be observed that a fourth of these contributions was produced while discussing HUL step “prioritize” (Fig. 3). Concerning “scale”, the contributions referring to “vulnerability” and “integrate” tend to be evenly distributed. Conversely, the contributions about “prioritize” refer mostly to Salerno and “general”, while the ones about “partnership” to Giardino della Minerva and Salerno, whereas the subsets concerning “mapping” and “consensus” omitted the related scale (Fig. 3). Hence, at the level of Giardino della Minerva and Salerno, addressing challenges in “prioritization” and “partnership” would significantly impact the facilitation of the ARCH.

In reporting the results, it was preferred to use the participants’ wording to acknowledge the terminology variety and ambiguity encountered in analyzing some contributions. For example, participants used both “community” and “local people”. This issue stems from the participants’ multidisciplinary, potentially understanding technical words in different ways, and speaking a non-native language.

### 4.1. Overview of the 55 themes

Fifty-five themes were identified, entailing 633 code labels applied, and excluding 8 contributions due to being incomplete or undecipherable, such as the potential solution: “roots museum” (Fig. 4). When relating the themes to the HUL steps and the “solution-challenge” it can be concluded that awareness-related and system change-related solutions address challenges associated with “continuity”, which are encountered in activities related to “prioritize” and “vulnerability” (Fig. 4). While visualizing the wide variety of themes encompassing challenges and/or solutions, such a broad overview evidences the complexity underlying the system of factors identified assessing the

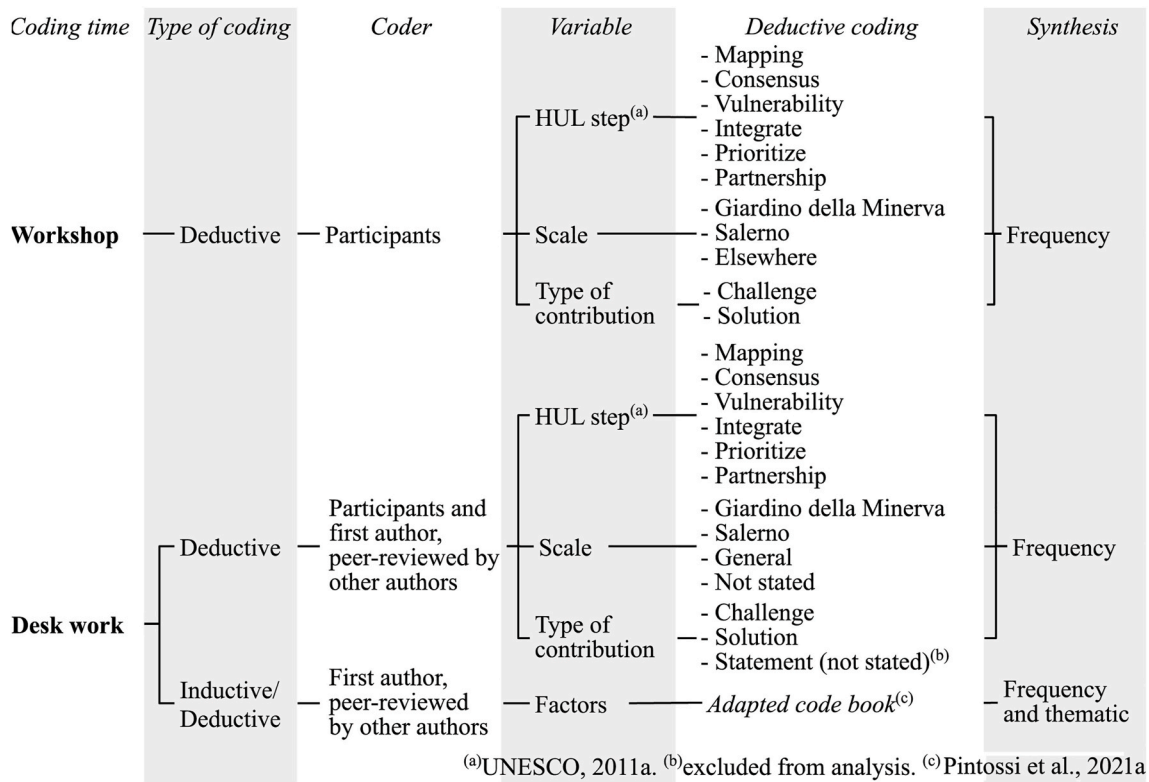


Fig. 2. Content analysis (adapted from Krippendorff, 1980): coding process and analysis techniques. The deductive coding during the roundtables reflects the workshop structure: participants unconsciously coded by indicating the type of contribution and its scale while discussing a specific HUL step in each roundtable discussion.

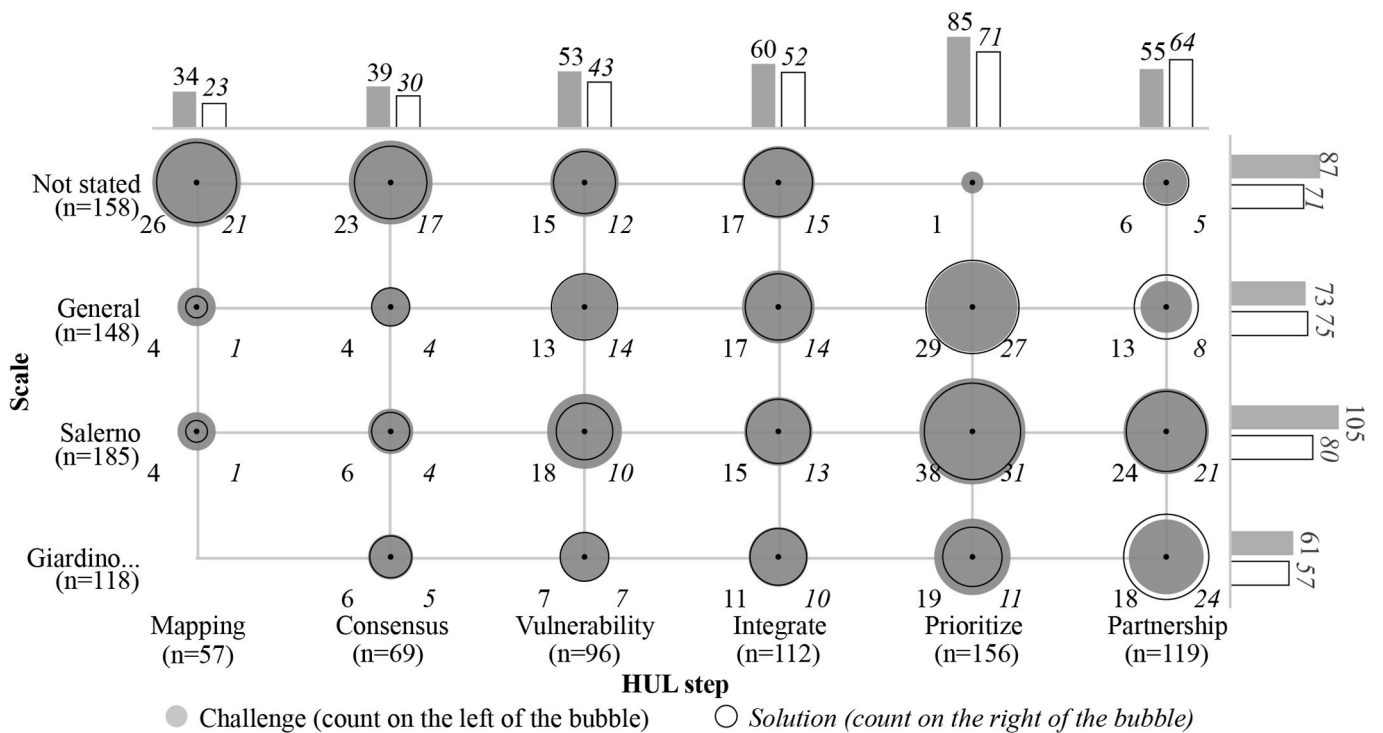


Fig. 3. Overview of the dataset analyzed per HUL step, scale, and type of contribution. (Initial draft of the figure created using rawgraph.io).

ARCH. The 5 mostly mentioned themes are knowledge (n = 62), participation (n = 43), valorization (n = 37), approach (n = 36), and cooperation (n = 33).

This research revealed a system of interconnected factors underlying the ARCH. The graph in Fig. 4 shows that, within the relations challenge-solution, some themes are connected to several others. For example,

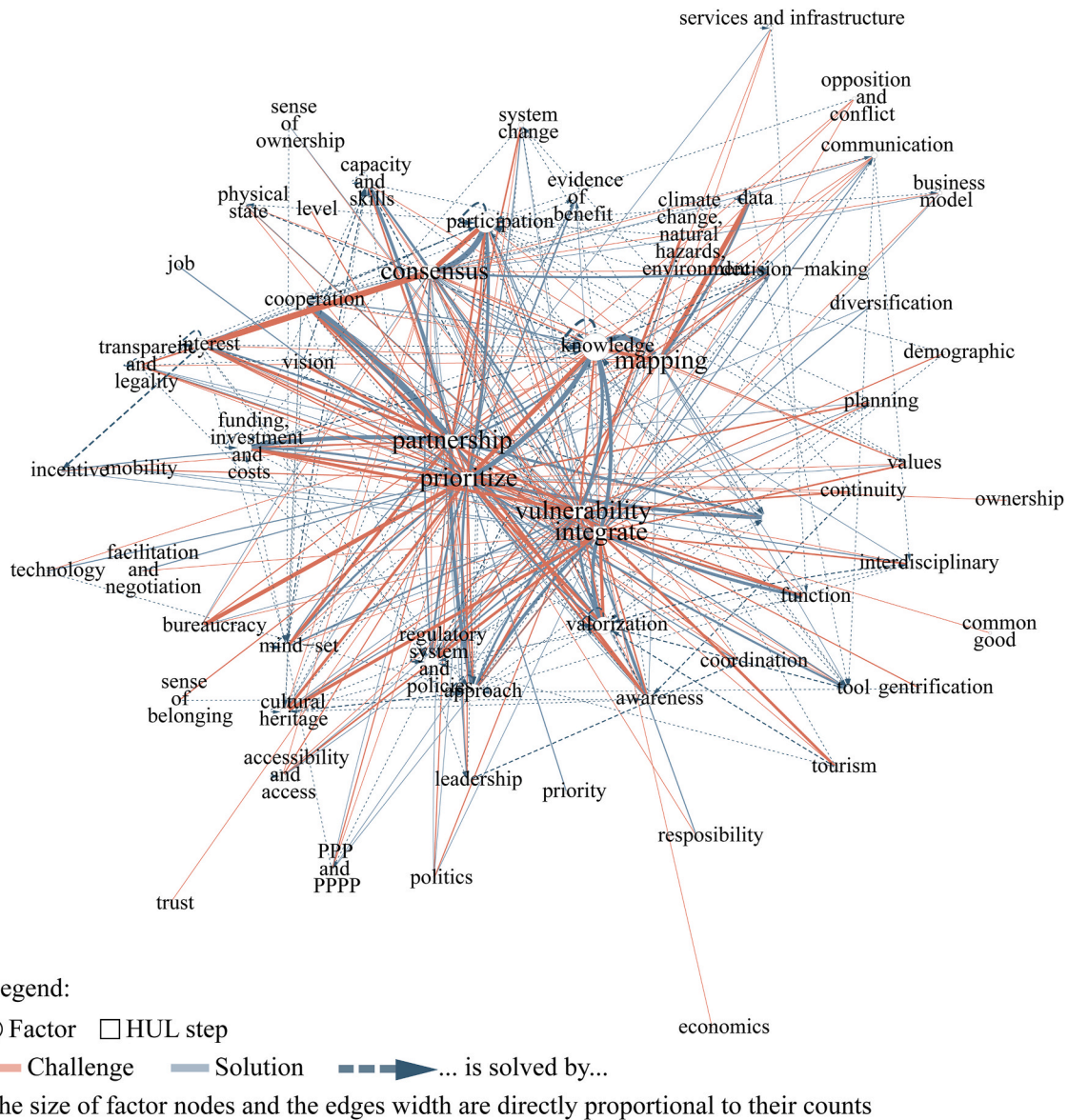


Fig. 4. Graph mapping the relation among the theme of factors and HUL steps (61 nodes, 255 edges) and the relation challenge-solution among themes (116 arcs). The graph is two-mode, nonsimple, and multiedge with loops represented using a Prefuse Force Directed layout using the number of contributions for each theme as the force. Graph created using Cytoscape 3.8.0 (Shannon et al., 2003).

“knowledge” is connected with 12 other themes. In addition, challenges referring to themes such as “capacity and skills” can count on solutions from multiple themes, i.e. “decision-making”, “mind-set”, and “knowledge”. Moreover, solutions such as the ones related to “provide evidence of the benefits” are linked to challenges referring to various themes, e.g. “awareness” and “cultural heritage”. Hence, it is found a widely diversified spectrum of thematic relationships among factors. Only the factors relating to issues about “accessibility and access” lack challenge-solution relations outside the theme itself. Moreover, the identified system of challenges includes some factors—pertaining to the same theme—that relate to multiple HUL steps. These factors are, therefore, transversal to different activities of the reuse process. For example, “transparency and legality”, as the lack of transparency, is encountered in “mapping”, “consensus”, and “partnership”.

4.2. In-depth account of the five most mentioned themes

The five mainly addressed themes are knowledge, participation, valorization, approach, and cooperation. Fig. 4 shows that factors

relating to knowledge, participation, and approach were identified discussing all six HUL steps, whereas valorization factors are absent from the discussion of “mapping” and cooperation from the one of “consensus”. Challenges and solutions per each of these five themes are summarized in Table 4 and they are defined and detailed in the subsequent subsections.

4.2.1. Knowledge

Factors referring to knowledge concern the understanding of information directly and indirectly related to the ARCH and its setting. Knowledge-related challenges (n = 23) are mostly mentioned as lack of knowledge (n = 6), difficulties in its dissemination (n = 5) and production (n = 3), and the problem of its loss (n = 3). Concerning solutions, they mostly relate to knowledge production (n = 23) and, to a lesser extent, to knowledge dissemination (n = 11).

Firstly, the multifold challenges relating to knowledge entail its lack as the absence of understanding of the potential of Giardino della Minerva and Salerno. In general, this difficulty also relates to ignoring the “potential of spaces” to be reused, the “value of cultural heritage” for

**Table 4**  
Summary of challenges and solutions for the five most mentioned themes of factors.

Theme	Description	Challenges	Solutions
Knowledge	Factors concerning the understanding of information directly and indirectly related to ARCH and its setting	Lack of knowledge Difficulties in knowledge dissemination Difficulties in knowledge production Loss of knowledge	Knowledge production Knowledge dissemination Knowledge sharing Acquiring “know-how”
Participation	Factors relating to stakeholders engaging with ARCH	Implementation of participatory practices Lack of participation	Civic engagement Co-planning Inclusion, e.g. young people
Valorization	Factors referring to actions aiming at either increasing or communicating some value	Lack of valorization Creation of networks Creation of networking activities	Creation of networks for valorization Valorization activities and events Diversification of the valorization activities
Approach	Factors mentioning how ARCH and related processes are or could be implemented	Need for a change of approach Implementation of existing and new approaches	Shift in the approach New approaches Cross-sectoral exchange
Cooperation	Factors mentioning stakeholders working together in a shared effort, mostly implying the common benefit of such collaborations	Initiation of collaborations Implementation of cooperation Lack of cooperation among certain stakeholders Fragmentation of collaborations	Cross-sectoral cooperation New forms of cooperation Broaden the range of stakeholders

young people, and the needs of various stakeholders, e.g. “locals”. Secondly, challenges concern the dissemination of information. For example, knowledge exchange is lacking concerning “best practice” both in Salerno and in general. Salerno also encounters difficulties in disseminating and recovering “memory”, especially about the intangible asset of the Salernitan medical school. This could be overcome by including pre-agreements on recovery and dissemination for interventions on cultural heritage, a regulatory-related solution. Thirdly, despite relating mostly to solutions, knowledge production also poses challenges such as the demand for information about the ownership of heritage assets. Finally, a challenge common to all scales mentions the potential “loss of memory” due to the change in the “community” composition. To advert its loss, the memory relating to Giardino della Minerva shall be transmitted through education activities in schools.

Knowledge is also mentioned in solutions. For Salerno, knowledge production includes mapping cultural heritage assets; collecting memories of local people in an “archive of local stories” to address the “lack of common interest/vision”; and gathering “good practices in the cultural scope” in a platform to contrast the lack of sharing of information among the organizations in the city. In general, knowledge production provides overviews of the current status of the cultural heritage sector, investment opportunities, funding, stakeholders’ needs, and “experiences”. An example of such a solution is inventorying “potential investment opportunities and (...) investors” at the European level. Other solutions either advocate for information dissemination or propose

strategies to transmit “memory” and knowledge. For Giardino della Minerva, this entails disseminating its multiple, layered narratives. Similarly, within Salerno, this dissemination concerns the achieved results to ensure the long-term implementation of current strategies on heritage and tourism, addressing potential problems of continuity derivable from changes induced by political cycles. Acquiring knowledge about “know-how” and from national and international experts overcomes the challenges associated with involving “the local community in the maintenance (...) of the garden”. Similarly, it is suggested sharing knowledge about NGOs and internationalization. Finally, other solutions to disseminate knowledge are gamification for the cultural heritage assets of Salerno and, in general, the provision of “a space for the exchange of ideas and knowledge” and an “open public dissemination”.

#### 4.2.2. Participation

The category “participation” entails factors relating to stakeholders engaging with ARCH, such as future citizens. These factors (n = 16) mostly refer to the implementation of participatory practices. Besides, challenges also mention the lack of participation (n = 6) either in general or referring to specific stakeholder groups, whereas “civic engagement” is a shared (n = 5) solution.

Challenges relating to participation are encountered at all scales. For Giardino della Minerva, the lack of participation entails the exclusion of citizens from “the process” and the absence of “co-planning”. Both challenges might be solvable by implementing participatory practices through co-planning. Furthermore, the citizen exclusion is addressable by organizing events aiming at their involvement. An additional challenge for the garden concerns how to engage “locals” in “prioritization” and “partnership”. This challenge is also identified at the level of Salerno. Also, the absence of dialogue with politicians, who “need citizens’ opinion”, revealed it as extremely difficult. According to the general contributions, the lack of participation entails both the absence of representation, e.g. of future citizens such as children, and of a public sector that does “not allow engagement” without further detailing it. General challenges to the implementation of participatory practices span from the absence of references on approaches for citizens’ participation to the lack of influence of the outcomes of the participatory processes on the final outputs of the decision-making. The “lack of bottom-up initiatives”, the difficulty encountered in understanding “when to involve people”, and the absence of participatory tools and governance are a few of the many eminent challenges.

Besides the solutions already mentioned, a few more embed participation. For Salerno, the “local community” shall contribute through participatory planning to develop a local action plan also considering sustainable tourism. Additional solutions for Salerno include improving public consultations, which form the basis to prioritize actions according to participants, and making “the citizens part of the heritage conservation”. At the general level, solutions mostly relate to the implementation for “consensus” such as carrying participatory practices out involving stakeholders from sectors other than the cultural heritage.

For the implementation of these practices, it is suggested to mix innovative and traditional approaches, designate a coordinator, and build platforms that support dialogue—including citizens and young people—while providing a channel of communication between the local authorities and the civic society. It is also suggested to start with “stakeholder involvement” from the beginning of the ARCH process and recommended engaging “local stakeholders and local government” particularly for private initiatives.

#### 4.2.3. Valorization

Valorization refers to actions aiming at either increasing or communicating some value. These factors, generally more associated with solutions rather than challenges, often include activities such as promotion (n = 10) and networking (n = 9). Valorization is also mentioned as a challenge when lacking (n = 3), and as a solution when it



entails diversification (n = 3).

Among the challenges, promotion issues are common to both Giardino della Minerva and Salerno. For example, the site lacks the valorization of its cultural value, which could be promoted by a devoted network to communicate this value. In terms of the City, valorization is needed to attract tourism and foster economic development. For Giardino della Minerva, the valorization through networking embeds a twofold challenge: creating an international network to exchange knowledge and increase its leverage, and opening the garden up to the city through networking activities. Particularly, this second activity is perceived as a potential threat to the preservation of the garden identity despite addressing the complaints about its “closure”. Also, at the level of Salerno, a challenge entails the development of a network to communicate the existing offer of events about culture and heritage. Other challenges associated with the valorization of Giardino della Minerva relate to convey its value to tourists without a guide, promote the interventions carried on within the garden to a broader audience, and decide between the current single-narrative valorization and its diversification through multiple ones.

Solutions refer to valorization from the local scale up to the international one. For example, solutions promote Giardino della Minerva, its values, and its activities among residents and tourists by organizing events, including the garden in itineraries, partnering with associations with similar interests such as the one of independent farmers (*Coldiretti*). Also, the interaction of Salernitans with the garden could be encouraged by introducing incentives such as discounted tickets. Solutions concerning Salerno mention “lobbying at international level” to address the perceived absence of international investors in the city, and networking to valorize the heritage of the city. Moreover, the valorization of “minor sites” helps to solve a general threat such as over-tourism which could be faced by Giardino della Minerva due to the increasing number of visitors. Finally, the diversification of the valorization associated with Giardino della Minerva is suggested by offering a program that addresses the various dimensions of this heritage overcoming the challenge of identifying what is considered heritage in the garden and by whom.

#### 4.2.4. Approaches

Approach factors mention how the ARCH and related processes are or could be implemented. These factors, featuring 22 solutions and 14 challenges, predominantly mention a need for a change as a challenge (n = 7), and shifts in approach or introducing a new approach as solutions (n = 7).

Challenges mainly report difficulties in current approaches or in implementing new ones. For example, in Salerno, the current prevalence of traditional financing models is regarded as a challenge of the current ARCH practices, which could be overcome by improving the governance of this reuse. In addition, general challenges demand a change of approach as considering “cultural heritage maintenance and sustainable development” as conflicting as well as performing restoration works without a preliminary analysis but overlooking to provide details on this analysis. These challenges are respectively solvable by adopting “innovative (technological) solutions for energy efficiency, etc.” and by changing approaches and setting “priorities”. Other challenges mention the lack of application of the existing principle of horizontal subsidiarity for Giardino della Minerva and the current management approach to adaptive reuse intervention within Salerno lacking a “strategy for management and uses” that often results in vacancy shortly after the finalization of these interventions. This challenge could be addressed by looking at other sectors solutions and consulting “with different actors/stakeholders”. Additional examples of challenges are the difficulty of integrating cultural heritage in smart specialization plans and the lack of planned maintenance. This second issue is solvable by developing plans for this purpose at the level of the historic urban landscape as well as specific ones for monuments.

Besides the solutions already mentioned, others entail the introduction of new innovative models for Giardino della Minerva, to address

issues related to its financial viability, and the opening of “the management programme of the heritage to new propositions” overcoming its extreme specialization. Furthermore, to advert the disneyfication (*Kennedy & Kingcome, 1998*) of Salerno, it is suggested to adopt an integrated approach not only focusing on tourism but also considering other uses when reusing heritage also interlinking the city with its wider territory and specialities such as the Mediterranean diet. Similarly, in general, an integrated approach is proposed for “territorial development” with cities leading and receiving benefit from it. An additional general solution tackles the absence of tools for participation and governance for the ARCH by cross-sectoral learning and exchange.

#### 4.2.5. Cooperation

Contributions about cooperation mention stakeholders working together in a shared effort, mostly implying the common benefit of such collaborations. These factors are more associated with solutions (n = 21) than with challenges (n = 12). Particularly, solutions often report examples of existing cooperation and prospected one (n = 6), also within other sectors, such as the association of independent farmers (*Coldiretti*) which partnered with the city hospital and other stakeholders to produce locally-sourced olive oil.

Challenges relating to cooperation often refer to the difficulty of initiating and implementing collaborations, as involving high profile NGOs in partnerships for Giardino della Minerva. Furthermore, this difficulty is also generally present in cooperation between local authorities and the Ministry of Culture represented by its peripheral office. Improving the “dialogue” between these different government levels would solve this last challenge. Furthermore, in Salerno, a barrier stems from this peripheral office mainly collaborating with public authorities rather than with the other stakeholders involved in the ARCH. For Salerno, an additional challenge reports the lack, fragmentation, and limitation of cooperation among its cultural organizations. This challenge could be addressed by gathering “good practices in the cultural scope” through a platform and with initiatives from the community under a “community brand”.

Solutions concerning cooperation suggest teaming up with knowledge institutions such as universities to address issues related to Giardino della Minerva, e.g. recovering an intangible asset of the garden like the “memory” associated with it. Other solutions for Giardino della Minerva include collaborating with “many actors” as working with artists to “emphasize the historic story of the garden” through “modern stories”. A similar general solution entails “to dialogue with other stakeholders” and find “new ways” for implementing it, addressing the challenge posed by a cultural heritage sector tending towards isolation.

## 5. Discussion and conclusions

This research confirms and expands the range of challenges discussed in the literature (*Fig. 5*) and offers solutions, investigating the ARCH within a European setting as Salerno in Italy through stakeholder engagement. New challenges are.

- the lack of knowledge about the needs of stakeholders,
- the limited dissemination of best practices and approaches for citizens’ participation in the ARCH,
- the recovery and dissemination of “memory” and the prevention of its loss,
- the lack of co-planning in relation to participation,
- the lack of engagement or representation of certain groups in the process of ARCH,
- the absence of bottom-up initiatives,
- the valorization,
- the development of networks for valorization and dissemination,
- the limitation of current approaches to the ARCH and the difficulty of implementing new ones,
- the initiation and implementation of collaborations, and

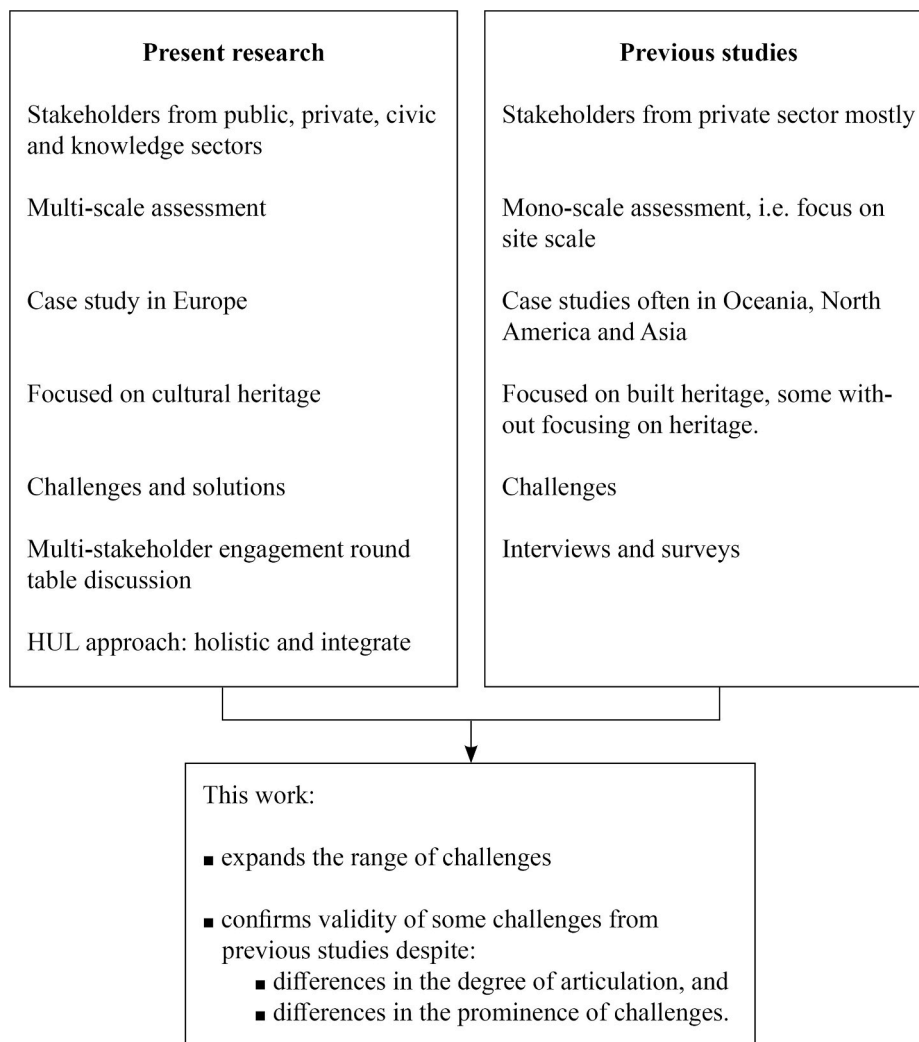


Fig. 5. Summary of the contribution to existing knowledge.

- the lack of cooperation among certain stakeholders.

Moreover, this research presents three additional contributions to understanding of the challenges of the ARCH (Fig. 5). Firstly, these findings further detail the challenges reported in the literature. For example, lack of community participation (Garzillo et al., 2018) is specified as the lack of representation of specific groups, such as young people. Secondly, the participants to the HUL workshop seldom mentioned challenges as the state of decay or design and technical aspects of the ARCH (Bullen & Love, 2011c; Conejos et al., 2016; Douglas, 2006). Finally, the five themes detailed were seldom mentioned in the literature about the ARCH challenges. These three contributions suggest that differences exist between what reported in the literature and the present findings.

These differences are likely to be related to the context of the research, i.e. the participatory approach and the geographical setting. After all, the analyzed contributions were made adopting an HUL-based, multi-scale approach considering a botanical garden as a site case. Moreover, a broader variety of stakeholders was involved in this identification with respect to previous studies. Possibly, a further explanation of these differences lays in the constant evolution in the conservation and management of cultural heritage (Akagawa, 2018; Pereira Roders, 2019; Smith, 2012; Vecco, 2010). For example, discussions on the role of community in heritage management are gaining attention and being further researched (Li et al., 2020; Rosetti et al.,

2020). This evolution might have shifted discourses that are echoed in the participants' contributions. Future research could investigate if these thematic differences go beyond the case study of Salerno entailing a more general shift in the themes associated with the current challenges encountered in the ARCH, and the interrelation of these themes with cultural democracy. Furthermore, these findings suggests that the challenges to the ARCH not only has a technical dimension but also a cultural one.

Yet, some of the findings are reported in the literature about challenges, although nuanced differences may apply. For example, lack of knowledge, as the absence of reliable information, is a challenge according to architects and project managers interviewed considering New South West, Australia as a case study (Conejos et al., 2016). This challenge is also reported for North America (Bourne, 1996). Therefore, findings from previous studies—characterized by different methods, stakeholders' groups, and/or geographical contexts—confirm some of the findings of this research and vice versa. This confirmation is an argument of reliability and validity; thus, it seems to suggest the generalizability of some challenges. Further research is needed to investigate this generalizability. Furthermore, it is recommended to perform large-N comparative studies that can contribute to synthesize the case-base findings to a higher-level (Eisenack et al., 2014).

In addition, studies conducted with a similar methodology also identified factors referring to knowledge, participation, approach, and cooperation in the European cities of Amsterdam and Rijeka. Whereas,

valorizations was mentioned only in Rijeka and is rarely mentioned (Pintossi et al., 2021a; 2021b). For example, the lack of engagement or representation of certain groups in the process of ARCH is mentioned as a general challenge in these three cities. Nuances apply. In Salerno, while remarking the limited or absent participation in general, addressing representation in participation, a group mentioned was children. To be noted that “Taking ownership of their history makes the children active participants in telling the story of their place” (Grimshaw & Mates, 2022, p. 1334), which future research could scrutinize as a possible solution to address the loss of memory. In Amsterdam, some citizens are found not to be represented: this challenge stems from the participations of “only well-educated” ones (Pintossi et al., 2021c, p. 10). In Rijeka, the groups of stakeholder limitedly or not represented are named as either “citizens” or “community” (Pintossi et al., 2021b, p. 9). In sum, representation in participation is among the participation-related challenges to the ARCH in the three cities. Future research could further scrutinize this issue and answer whether the differences among groups mentioned per each city are coincidental, perhaps participants just provided different examples. The comparative study mentioned suggests that some challenges are common to the three diverse cities (Veldpaus et al., 2019), yet additional research is needed to improve the generalizability of these findings.

Cooperation is key to the ARCH. In the city of Salerno, cooperation has been discussed in relation to challenges and solutions. On the one hand, the cooperation between and with public authorities was pointed to be an issue, while some collaborations among various stakeholder groups was recognized or suggested as solutions. Similarly, the investigation of the case study of Miss Miyagi—positive impact real estate developer active within the ARCH— has provided evidence of how crucial collaboration is for circular-human centered adaptive reuse in Leuven, Belgium. This studies illustrates “how network of individuals and institutions co-operate, co-govern commons [i.e. the reused heritage] and co-create shared values or collective goods”(Saleh, 2022, p. 14).

Overall, this research points out the need for a systematic, cross-sectoral approach in the ARCH which also consider the ARCH not as an isolated process but integrated into the wider urban (or rural) system. Firstly, themes are intertwined (Fig. 3), suggesting that a solution while overcoming a specific challenge can also address other challenges. For example, solutions fostering the dissemination of knowledge, such as “open public dissemination” also address the lack of transparency of processes, being “transparency” one of the 55 themes. Secondly, challenges and solutions are non-exclusive of the ARCH. They also relate to other processes, e.g. participatory practice in general or heritage climate adaptation, and intersect with sectors other than culture and heritage, e.g. tourism and economic development. For example, knowledge transfer is a challenge encountered in the ARCH as well as in heritage climate change adaptation (Sesana et al., 2019). This non-exclusive nature of some challenges and solutions suggests that the present findings can have implications besides the ARCH such as informing community-led heritage management. Future research is advised to further investigate the systemic nature of these challenges and solutions, explore a systemic, cross-sectoral approach to overcome the challenges of the ARCH, and study the cross-sectoral relations of some of these challenges.

This research also found that some challenges are common to multiple scales, such as the “loss of memory”. While reflecting the landscape approach of this research, considering the complex layering of various aspect constituting the landscape, this finding suggests the possibility to intervene at multiple levels in addressing some challenges. Furthermore, policies focusing at one level might favor others at the same time, and that solutions verified for one scale might be adjusted and viable for others. Therefore, a holistic and integrated approach such as the landscape approach might be adopted to address the multi-scale issues revealed by the present research. Such a hypothesis demands additional research.

The present research had a horizontal and exploratory intention

which presents certain limitations. Firstly, the findings are dependent on the workshop participants’ experiences and opinions and the context considered, i.e. Salerno. Secondly, the findings lack an in-depth analysis of each challenge and solution due to the exploratory nature of the research. Gathering additional details would provide supplementary and lacking information and clarify ambiguous terminology. These additional details could help to both better comprehend these factors and provide further evidence to inform policy-makers, decision-makers, and implementers; hence, supporting their activities in relation to the ARCH and urban regeneration. In reporting the results, the terminology ambiguity was acknowledged by preferring to use the participants’ wording. For example, future research could answer questions such as what factors influence the ARCH challenges and how? How challenges are interdependent? How policy-making can acknowledge any interdependency? Thirdly, the finding reflects a specific timeframe, i.e. when the data collection was held. Challenges and solutions change over time since they are dependent on dynamic settings and stress events (Eisenack et al., 2014), such as the COVID-19 pandemic. Therefore, additional research could focus on i) identifying challenges and solutions engaging other stakeholders, ii) scrutinizing other geographical contexts, iii) understanding in-depth the challenges, also, relating them to the type of stakeholders experiencing them, iv) investigating the solutions and their implementation, v) making an overtime analysis of challenges to reveal their potential evolution, and vi) performing comparative studies.

In sum, this study revealed challenges to ARCH for the city of Salerno and proposed solutions to address them. These factors related to 55 themes, being the 5 most addressed knowledge, participation, valorization, approaches, and cooperation. Assessing the ARCH from a multi-scale perspective was proven useful to the integration of policies and decision-making. Compared to earlier research, results extended the range of challenges, with a shift of emphasis towards factors such as participation and valorization. Results also confirmed factors as availability of skilled craftsmanship, conflict about new uses of heritage, economic viability and costs, legal and regulatory constraints, political circumstances, and status of physical decay.

These findings are scientifically and societally relevant. Their scientific relevance stems from two outcomes of this research. The first outcome is the evidence-based knowledge derived from the insights from the stakeholder’s perspective on the multi-scale challenges of the ARCH and possible solutions. The second outcome offers possible research lines and identifies gaps to be filled to further the knowledge on the matter. The societal relevance of these findings is twofold. Firstly, this relevance stems from the informative overview for policy-makers, decision-makers, practitioners, and other interested parties of interest for the ARCH, but also for heritage management and urban regeneration. Secondly, the findings also offer a repository of solutions to address some challenges. The identified challenges reveal not only opportunities to intervene to enable or improve the ARCH, but also potential areas of intervention that might benefit the City at large. The various ARCH stakeholders in Salerno, based on their role in the ARCH and/or specific ARCH process can develop plans and strategies that can be of reference to adopt and implement adaptive reuse or policy-making (Gravagnuolo, Micheletti, & Bosone, 2021). For example, these findings informed the development of an action plan for ARCH by the Municipality based on a participatory process (see Wildman et al., 2021). This plan addresses, for instance, the need for enhancing collaboration among actors and fostering civic participation. These findings can contribute to facilitating the adoption and implementation of the adaptive reuse of cultural heritage in Salerno and similar contexts, in order to harvest its potential for maintaining urban identity, enhancing urban livability as well as enabling and driving sustainable urban development.

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## Research data

The dataset analyzed is deposited in Zenodo. <https://doi.org/10.5281/zenodo.3925602>.

## CRedit authorship contribution statement

**N. Pintossi:** Conceptualization, Methodology, Formal analysis, Investigation, Resources, Data curation, Writing – original draft, Writing – review & editing, Visualization, Project administration. **D. Ikiş Kaya:** Methodology, Validation, Writing – review & editing, Supervision. **A. Pereira Roders:** Conceptualization, Methodology, Investigation, Resources, Writing – review & editing, Supervision, Funding acquisition.

## Declaration of competing interest

None.

## Data availability

Data are deposited in Zenodo

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