



Cultural heritage research: a narrative review focused on the Delphi method

Federica Codignola¹ · Laura Benedan¹ · Paolo Mariani¹

Received: 30 June 2025 / Accepted: 24 January 2026
© The Author(s) 2026

Abstract

The preservation and evaluation of cultural heritage increasingly demand methodologies capable of navigating complexity, expert subjectivity, and participatory foresight. This study examines the Delphi method as a robust tool for cultural heritage research, particularly for contexts marked by plural values, limited empirical data, and evolving stakeholder constellations. Drawing from the method's philosophical foundations and recent evolutions (including fuzzy, policy, and e-Delphi variants) we propose a narrative framework for Delphi-based heritage assessments. Based on a review of eleven Delphi studies across the arts and heritage fields, we identify common methodological patterns, design innovations, and challenges related to expert selection, consensus-building, and transparency. We also highlight the method's potential to engage diverse knowledge systems and to map dissensus rather than enforce artificial agreement. The paper concludes by discussing the implications of Delphi for interdisciplinary research, inclusive governance, and the co-construction of knowledge in sustainable cultural development.

Keywords Delphi studies · Quality tools for methodology · Research methods · Cultural heritage · Sustainability

1 Introduction

Cultural heritage plays a pivotal role in sustainable development, not only as a bearer of historical identity, but also as a catalyst for innovation, tourism, education, and social cohesion. This centrality helps explain the growing recognition of cultural and creative industries as

-
- ✉ Federica Codignola
federica.codignola@unimib.it
 - ✉ Laura Benedan
laura.benedan@unimib.it
 - ✉ Paolo Mariani
paolo.mariani@unimib.it

¹ Department of Economics, Management and Statistics, University of Milano-Bicocca, Milan, Italy

key contributors to local development and interdisciplinary research. As the sector increasingly intersects with market logics, urban regeneration, and evolving cultural values, its governance and assessment require robust methodological frameworks.

The complexity, subjectivity, and interdisciplinarity of cultural heritage research, especially when addressing concepts such as value, authenticity, and future trajectories, call for approaches capable of synthesizing diverse expert perspectives. Among these, the Delphi method emerges as a particularly promising candidate. Its structured, iterative process of expert elicitation, anonymity, and controlled feedback offers an effective way to reach reasoned convergence in domains characterized by uncertainty, limited empirical data, or high reliance on professional judgment. In particular, the art sector, within its market is characterized by information asymmetry, where the level of information is neither homogeneous nor transparent. Candela et al. (2012) stated that when there is a condition of dis/informational symmetry, the agents agree on the artwork's valuation. However, neither symmetric information nor symmetric disinformation frequently occur in the art market. This is supported by Candela et al. (2009), Candela et al. (2012), Shönfeld and Reinstaller (2007), and Tirole (1998), who argue that asymmetric information is more common in the art market. Given the inherent information asymmetry in the art market and cultural heritage, these fields require investigative methodologies that allow for unbiased reasoning, free from preconceived notions or predefined frameworks. This approach is essential to navigate the complexities of art's symbolic, economic, and cultural dimensions. This paper's objective is hence to explore the effectiveness of the Delphi method as a promising avenue for future research on cultural heritage. The Delphi method, in fact, is a structured communication technique designed to achieve consensus among experts. Therefore, by leveraging this method, researchers could assess its potential to provide deeper insights and foster informed decision-making in the study of art and cultural heritage.

Originally developed by the RAND Corporation in the 1950s for military forecasting (Dalkey and Helmer 1963), the Delphi method has since been adapted across diverse fields including healthcare, public policy, technological foresight, and more recently, cultural strategy (Khodyakov et al. 2023; Cuhls 2023). Despite this evolution, its application to cultural heritage remains relatively underexplored. Nonetheless, its compatibility with participatory foresight, interdisciplinary dialogue, and pluralistic valuation makes it well-suited to address the methodological and epistemological challenges posed by cultural heritage assessment.

Although a few Delphi-based applications have emerged in heritage governance, such as the Ivrea case analyzed by Coscia et al. (2019), which combines Delphi with spatial analysis and heritage intervention scenarios, the existing studies are typically narrow in scope or integrated into broader decision-making frameworks. To our knowledge, this is the first attempt to systematically narrate and synthesize methodological patterns across a diverse set of Delphi studies explicitly focused on cultural heritage as a research field.

This paper argues that the Delphi method can provide a methodological contribution to cultural heritage research, particularly in contexts where market mechanisms are opaque, data are limited, and standard evaluation criteria may be insufficient or contested. In such cases, expert-based, dialogic methods like Delphi offer both analytical and normative value by structuring collective judgment around complex or emerging heritage questions.

To this end, the present study undertakes a review of eleven peer-reviewed Delphi studies conducted within the cultural heritage domain. Through this review, the paper identi-

fies recurring methodological practices, highlights existing gaps, and examines innovations that inform the development of context-sensitive Delphi applications in this field. The ultimate aim is to suggest an adaptable framework that enhances methodological transparency, supports interdisciplinary engagement, and contributes to the integration of participatory methods into sustainable cultural development strategies. In light of the expansive, interdisciplinary, and conceptually fluid nature of the cultural heritage field, a domain that brings together stakeholders with diverse and evolving perspectives, values, and priorities, a structured and iterative approach that integrates expert judgment while accommodating multiple viewpoints offers substantial methodological value. [2](#)

2 Theoretical background on the cultural heritage research

In recent decades, cultural heritage and creative industries have become increasingly recognized as strategic assets in the regeneration of territories undergoing post-industrial, post-conflict, or socio-economic transitions. In such contexts, creative sectors not only preserve identity and memory but also stimulate innovation, urban renewal, and social inclusion. Scholars have emphasized how cultural heritage functions as a catalyst for sustainable local development by fostering place-making, entrepreneurship, and participatory governance, particularly in peripheral or historically marginalized areas (Lazzeretti et al. [2017](#); Imperiale et al. [2021](#)). These dynamics have positioned cultural heritage as a multidimensional resource, bridging tangible and intangible assets, and making it a fertile domain for interdisciplinary inquiry. This evolving complexity, the information asymmetry typically linked to art and cultural heritage, and the growing need to reconcile heritage value with sustainability objectives, calls for methodological frameworks that can mediate among diverse expert perspectives, making the Delphi method particularly suitable for cultural policy and strategic heritage research.

Cultural heritage research spans multiple disciplines, intersecting history, anthropology, economics, urban studies, and sustainability science. In recent decades, the field has evolved beyond the preservation of monuments and artifacts to encompass intangible cultural expressions, digital heritage, and community-defined practices. This inclusive shift reflects a broader reorientation toward participatory, socially grounded, and policy-relevant approaches to heritage management. Scholars describe a shift from traditional, object-centred approaches toward frameworks that integrate public history, memory studies, and participatory methods (Ashworth and Tunbridge [2007](#); Stig Sørensen and Carman [2009](#); Logan et al. [2016](#)). At its core, cultural heritage involves navigating complex value tensions, between cultural and economic value, authenticity and innovation, tradition and modernity, and materiality and memory. Consequently, heritage is now increasingly understood as a living, dynamic system of meaning, shaping and being shaped by contemporary societal challenges. Among these challenges, sustainability has become a dominant framework, integrating cultural, social, ecological, and economic dimensions into heritage planning. For instance, research shows that heritage can function both as a driver and enabler of sustainable development, particularly at local and regional levels (Imperiale et al. [2021](#)). The cultural and creative industries have been recognized for promoting identity, innovation, and job creation, particularly in marginalized or post-industrial regions (Innocenti and Lazzeretti [2019](#); Lazzeretti et al. [2017](#)).

Cultural heritage, as considered in this study, encompasses both tangible and intangible dimensions, including historic urban centers, museums, design collections, and heritage landscapes. The cases drawn from the literature span institutional settings (e.g., national galleries, UNESCO-listed sites) as well as creative and design-oriented sectors, thus reflecting the field's expansion toward hybrid cultural-economic configurations. These diverse contexts entail different stakeholder ecologies and governance models, from top-down public heritage authorities to bottom-up community-driven initiatives or market-based valuations. Acknowledging this heterogeneity is critical, as it affects how value is defined, negotiated, and sustained over time.

Cultural heritage research examines the evolution, preservation, education, and tourism dimensions of heritage, defining the field through a range of interdisciplinary perspectives (Kolesnik and Rusanov 2020). Evaluating the impact and future trajectories of cultural heritage remains methodologically complex due to the multidimensional nature of heritage value, its evolving role in society, and its feature of information asymmetry. "Impact" can refer to cultural resonance, economic contributions (e.g., tourism or creative industries), social cohesion, educational outcomes, or ecological sustainability. Similarly, anticipating the "future" of heritage involves addressing questions of preservation, reinterpretation, accessibility, and intergenerational transmission, often in the face of global challenges such as urban transformation, climate change, and digital disruption. These multifaceted considerations require methods capable of integrating diverse expert perspectives, scenario-building, and value negotiation, which is where the Delphi approach may offer significant advantages. Unlike standardized policy domains, heritage requires tools that can capture symbolic value, stakeholder diversity, and evolving cultural narratives. In response to the methodological complexity of heritage evaluation, there has been a growing shift toward participatory, expert-informed methods that allow for structured discussion, contextual interpretation, and recognition of value pluralism. Methods such as scenario analysis, participatory mapping, and expert elicitation have gained traction in cultural heritage research for their ability to integrate diverse perspectives in forward-looking and often contested domains (Reher 2020; Liritzis 2017; Logan et al. 2016). These approaches are particularly valuable in dealing with intangible heritage, stakeholder conflict, and long-term planning, where traditional positivist methods fall short. As noted in recent UNESCO guidelines, the inclusion of multi-actor and co-constructed approaches is increasingly seen as a prerequisite for responsible heritage governance and sustainability (UNESCO, 2025). Within this landscape, the Delphi method can offer a unique synthesis: it structures expert participation through iterative feedback while maintaining the epistemological flexibility needed to accommodate symbolic, local, and contested meanings. Thus, Delphi may complement the existing methodological toolkit by enabling systematic consensus-building in domains where data are fragmented and values are diverse. These challenges typically revolve around the difficulty of reconciling standardized evaluation metrics with context-specific meanings, often shaped by intangible, contested, or community-rooted values (Sørensen and Carman, 2009). While methods like ethnography, participatory action research, and value-based heritage assessments have contributed significantly to addressing this gap, they often lack the systematic structure that Delphi offers for integrating pluralistic perspectives into decision-making frameworks (Logan et al. 2016).

Recent scholarship in heritage studies increasingly emphasizes the *co-construction of knowledge*, where diverse stakeholders (including communities, heritage users, and cultural

producers) collaboratively define the value, interpretation, and future of heritage resources (Logan et al. 2016; Sørensen and Carman, 2009). This participatory turn has challenged expert-centric models of heritage governance and called for more dialogical, inclusive methodologies. In this context, the Delphi method holds potential not just as a tool for expert consensus, but also as a framework that can be adapted to incorporate community-informed insights and stakeholder co-design, especially through exploratory rounds, qualitative feedback loops, and tailored panel construction.

This interpretive flexibility is especially relevant in settings where heritage is living, contested, or under-defined, such as in intangible practices, post-conflict reconstruction, or emerging digital heritage spaces. Hence, we propose that Delphi can serve as a boundary method, connecting expert deliberation with participatory agendas in cultural heritage research.

Having said so, the Delphi method has been applied in cultural heritage research contexts in extremely rare cases, notably for assessing values related to UNESCO World Heritage sites, such as aesthetics and cultural integrity. Its structured approach, however, appears to also support decision-making across cultural, policy, and educational contexts, as shown in digital heritage initiatives like “Delphi4Delphi”, which integrates 3D visualization, AR, and geospatial tools for heritage engagement and policy development (Liritzis et al. 2017). Moreover, methodological variants such as the Policy Delphi and Grounded Delphi have been proposed to enhance inclusivity and adaptability in policy-relevant heritage research (Howard 2018). As a consequence, we argue that the Delphi method can convey strengths in supporting group decision-making, capturing expert insight, and fostering iterative reflection make it especially well-suited for cultural heritage, where values are often contested, and policy frameworks are emerging or under-defined (Landeta 2006; McGeoch et al. 2014).

2.1 Approaching the Delphi method

The Delphi method was originally developed by the RAND Corporation in the post-war period as part of the “Project Delphi”, commissioned by the U.S. Air Force to forecast future military scenarios under conditions of uncertainty (Dalkey and Helmer 1963). Its core objective was to obtain structured forecasts from a group of experts while minimizing the biases often found in unstructured group discussions. Since its inception, the method has undergone extensive evolution and is now widely applied in fields such as technology assessment, public health, education, and economics. It is particularly valued for its methodological rigor in eliciting expert judgment through an iterative process that typically involves multiple rounds of anonymous questionnaires, controlled feedback, and statistical aggregation of responses (Khodyakov et al. 2023; Cuhls 2023).

In contexts like cultural heritage, where empirical data are scarce and where information is highly asymmetrical, expert knowledge is paramount, and value definitions are contested, the Delphi method might offer a structured pathway to clarify fuzzy concepts, anticipate future developments, and build stakeholder consensus.

The robustness and adaptability of the Delphi method are rooted in its pluralistic epistemology. Various philosophical frameworks underpin its application, enabling it to respond to different kinds of research problems (Linstone and Turoff 2002).

The first one is the *Lockean approach*, which represents the foundational philosophy of Delphi, where truth is considered the result of collective experience and consensus. It treats

knowledge as emerging from the accumulation and convergence of individual perceptions, a view particularly suited for forecasting and exploratory research (Marbach et al. 1991). The second one is represented by the *Kantian perspective*. In more recent applications, especially those concerning complex socio-cultural systems, the Kantian model has gained traction. Here, knowledge is seen as a synthesis of empirical observation and theoretical interpretation, acknowledging the role of subjectivity and the necessity for iterative refinement. This perspective is valuable for cultural heritage studies, where interpretative dimensions and normative frameworks are central (Marbach et al. 1991). Lastly, there are the *Dialectical-Hegelian and Singerian extensions*: these approaches emphasize the dynamic interaction of opposing perspectives and the importance of pluralism. They are especially relevant when the aim is not mere consensus but the mapping of dissensus to understand value pluralism, as often encountered in heritage valuation (Linstone and Turoff 2002).

In response to diverse disciplinary needs, numerous adaptations of the original Delphi structure have emerged. These include: (i) the Policy Delphi, designed to explore divergent views rather than build consensus, making it appropriate for contested heritage or identity-based topics (Linstone and Turoff 2002); (ii) the *Real-Time and e-Delphi*, which are digital iterations that improve speed and scalability while maintaining methodological integrity; and (iii) the *Fuzzy Delphi*, a method that combines Delphi logic with fuzzy set theory to model uncertainty and ambiguity in expert judgments, a useful tool in heritage where concepts like authenticity and value resist binary classification (Pauget et al. 2019).

Such methodological flexibility allows Delphi to serve both predictive and interpretative goals in cultural heritage research. Its ability to accommodate disagreement, structure complexity, and anticipate future scenarios makes it highly compatible with sustainability-oriented studies in this domain.

3 A narrative review

The objective of this study is to examine the methodological approach of the Delphi study for cultural heritage research, particularly in contexts characterized by limited empirical data, conceptual ambiguity, information asymmetry, and a strong reliance on expert judgment. These conditions are common in cultural heritage domains, where value systems are plural, interpretive frameworks vary, and sustainability assessments require interdisciplinary inputs. While this study focuses on an expert-driven approach, it is important to recognize that in cultural heritage contexts, expert knowledge is not limited to academic or institutional profiles but may also include local practitioners, community leaders, or bearers of intangible heritage. Delphi studies can and should hence be designed to reflect this broader definition of expertise, particularly when aiming to support participatory and inclusive heritage governance.

3.1 Research design and rationale

To achieve this, the research adopts a qualitative design aimed at mapping and evaluating existing applications of the Delphi method within the fields of art, heritage, and cultural policy.

To ensure comprehensive coverage, a broad and generalised keyword strategy was employed in the search process. The aim was to include the widest possible range of studies applying the Delphi method within the cultural and artistic domains. Keyword searches were conducted on Google Scholar and via the University of Milano-Bicocca Library's online platform, using combinations of the following terms: Delphi method; art; museum; galleries; collectible design.

This paper analyzes prior Delphi-based research to identify methodological patterns, strengths, weaknesses, and areas for innovation. Certainly, it is worth noting that the identified studies are numerically very scarce.

The study follows a three-phase approach: (1) a narrative review of peer-reviewed Delphi studies focused on cultural heritage, with particular attention to design choices such as panel composition, consensus metrics, questionnaire formats, and methodological transparency; (2) a synthesis of best practices and recurring limitations, generating empirical insights into how the Delphi technique is currently used and where improvements are needed; and (3) a proposal of a conceptual framework for the application of the Delphi method to research in the field of cultural heritage, integrating the most effective and context-sensitive strategies identified in the literature.

This approach allows for generalizable reflections on how Delphi can support expert-informed yet participatory cultural heritage assessments by facilitating structured dialogue among diverse stakeholders with contextual, cultural, or professional expertise. While traditional Delphi applications have emphasized institutional or academic expertise, heritage research calls for a broader conception of who qualifies as an expert. Delphi panels can be intentionally composed to include heritage practitioners, local custodians, and community leaders whose situated knowledge is essential to cultural assessment and sustainability. In this sense, participation in Delphi is enabled through the careful design of inclusive, cross-sectoral panels, rather than open public engagement. This structured participation helps reconcile methodological rigor with pluralistic, context-sensitive perspectives. For instance, it is intended to serve researchers, policymakers, and practitioners engaged in heritage valuation, strategic planning, and sustainable cultural development.

3.2 Narrative literature review of the Delphi method applied to cultural heritage research

To develop an ideal Delphi process suited to cultural heritage research, a narrative literature review was conducted to examine the methodological landscape of existing Delphi applications in the arts and cultural heritage domains. The selected studies addressed a variety of cultural heritage settings, including but not limited to museum management, historic preservation planning, intangible cultural practice evaluation, and design-related heritage valuation. These ranged from formal institutional contexts, such as national museums and state archives, to more fluid cultural expressions situated in the creative industries and design sectors. This variation influenced both the selection of Delphi variants and the structuring of stakeholder panels, reflecting the methodological need to adapt the process to specific relational and epistemic conditions. The objective was to identify: (i) common methodological challenges; (ii) expert panel sizes and selection strategies; (iii) questionnaire structures and thematic focuses; and (iv) measures of consensus and validation procedures.

Studies were selected based on the following inclusion criteria: they had to employ a recognized form of the Delphi method, provide a clear description of their methodological procedures, and be fully completed at the time of review. No temporal limitations were imposed during the search phase.

Eleven peer-reviewed studies met these criteria. These studies span a range of cultural domains, including heritage conservation, museum management, artistic evaluation, and design strategy. Selection prioritized methodological transparency and direct relevance to the cultural heritage sector. The findings from this review form the empirical basis for proposing an enhanced and context-specific Delphi framework for future research in this field.

3.2.1 Composition of the selected studies

In order to select the studies we chose to restrain the focus solely on the cultural heritage sector, with the goal of examining the Delphi structure for future studies in this field. The objectives of the reviewed studies generally fell into three categories: enhancement of education or development of guidelines for describing works (50%), improvement of gallery, museum, and archive management (50%), and overall enhancement of galleries (40%). All studies were published between 2016 and 2025, thus offering relatively recent insights. To enhance methodological transparency, the Delphi studies included in the literature review were further classified according to type of cultural heritage (tangible or intangible), ownership (public, private, or mixed), institutional or geographical context, and the primary challenges they addressed. Table 1 summarizes this categorization, showing that tangible heritage remains dominant (particularly museum and built heritage settings), although a growing number of studies now focus on intangible practices or hybrid environments such as digital archives. Ownership structures varied, often influencing governance complexity, while the challenges tackled ranged from strategic foresight to stakeholder alignment, cultural sustainability, and heritage valuation. This typology clarifies the diversity of Delphi applications and strengthens the basis for identifying transferable methodological patterns.

3.2.2 Panel size and composition

Regarding the panels used in the eleven Delphi studies, data were collected on the number of experts contacted and the number who actually participated. Additional useful variables include the professional background of participants, selection criteria (e.g., reputation, expertise, or organizational affiliation), and method of contact.

Most of the studies (70%) reported how many experts were initially contacted. As shown in Table 2, across these studies, an average of 49 experts were approached, with numbers ranging from 8 to 255. Only 6 studies specified the method used to contact participants: 30% reported in-person approaches, while 80% involved remote contact. The number of experts who ultimately participated in the Delphi panels ranged from 8 to 99, with a median of 19 and a mean of 26.1. Given the skewed distribution caused by one extreme case (Upadhyaya 2023), the median was preferred over the mean for describing participation levels. In all studies, reputation as an expert in a relevant field was the primary selection criterion. Additional factors such as organizational affiliation (60%) and years of experience (60%) were also frequently considered. In 20% of studies, snowball sampling (recruitment through referrals or direct contacts) was employed, useful for highly specialized domains, though

Table 1 Detailed categorization table of the reviewed articles(*Source:* authors' elaboration from research)

| Study ID | Heritage type | Ownership | Setting | Challenges/goals |
|--|--|--|--|---|
| Pauget et al. (2019). The Future of French Museums | Tangible (Built Heritage, Museums) | Public | Urban museum sector (France) | Strategic foresight, institutional planning, stakeholder engagement |
| Jenić (2024). Assessment of the Impact of Technological Tools on the Work of Artistic Organizations in Serbia through the Application of the Fuzzy-Delphi Method | Intangible (Contemporary Visual Arts Practices) | Mixed (Independent, Public-affiliated) | Artistic organizations in Serbia (urban cultural sector) | Integration of technological innovations (AI, blockchain, digital tools); improving management, outreach, and sustainability |
| Mateos-Ronco and Peirò Torralba (2019). A Delphi Survey for the Spanish Art Market | Tangible (Contemporary art) | Private/Public | National art market (Spain) | Expert valuation, transparency, cross-sectoral assessment |
| Skender and Dubovicki (2025). Developing Guidelines for the Future of Visual Art Education: A Delphi Study of the Croatian Case | Intangible (Art education and visual culture) | Public (Higher education and school system) | National education reform (Croatia) | Sustainability of private collections |
| Yang et al. (2023). A Delphi consensus checklist for assessing arts design: A case for miniature robots in a STEAM contest | Intangible (Arts education, design assessment) | Public (Educational institutions, STEAM contest organizers) | National STEAM competition (Taiwan) | Development of a standardized checklist to assess arts design in student-created miniature robots; promoting creativity, evaluation consistency, and art integration in STEAM education |
| Ferreiro-Rosende (2022). Museum brand identity model approach: An online Delphi Study | Tangible (Museums, Architecture); Intangible (Brand identity, Mission) | Mixed (Public, Private, Academic sector experts) | European museums (unspecified typologies) | Develop a consensus-based, adaptable museum brand identity model addressing post-COVID realities; Incorporate digitalisation, territorial connections, organisational culture, and branding touchpoints |
| Upadhyaya (2023). Crowdsourcing descriptions of visual works of art for blind and Partially sighted people. | Tangible (Museums, Visual Artworks) | Public | Site-specific museum audio description in UK art museums | Inclusion of blind/partially sighted visitors, accessibility innovation, branding |
| Hanson (2020). Best practices for mentoring in arts entrepreneurship education: Findings from a Delphi study. | Intangible (Entrepreneurial educational practices in the arts) | Academic/Public (University-affiliated mentors and programs) | U.S.-based higher education (university arts programs) | Develop expert consensus on mentoring in arts entrepreneurship; define traits, competencies, and practices to support artists' professional growth |

Table 1 (continued)

| Study ID | Heritage type | Ownership | Setting | Challenges/goals |
|---|---|-----------|--|---|
| Howard et al. (2016). Passion trumps pay: A study of the future skills requirements of information professionals in galleries, libraries, archives and museums in Australia | Tangible and Intangible (GLAM sector collections and practices) | Public | Australian cultural institutions (galleries, libraries, archives, museums) | Identify future knowledge and skills needed by information professionals across GLAM; support education program reform; navigate digital convergence; strengthen professional identity |
| Schep et al. (2017). Competent museum guides: defining competencies for use in art and history museums | Tangible (artworks, historical objects) | Public | Dutch art and history museums (e.g., Rijksmuseum, Van Gogh Museum, Stedelijk Museum) | Develop a validated competency framework for museum guides leading school group tours; professionalize guide training; improve visitor learning outcomes; tailor pedagogy to museum context |
| Pan et al. (2025). Constructing a Sustainable Evaluation Framework for AIGC Technology in Yixing Zisha Pottery: Balancing Heritage Preservation and Innovation. | Intangible | Private | China's intangible cultural heritage (traditional craftsmanship) | Maintain cultural authenticity while embracing innovation to satisfy the changing needs of consumers. |

potentially biasing responses due to shared perspectives among experts. Nonetheless, the panels were diverse, including figures from various subfields of interest, thus ensuring representation of different and sometimes contrasting viewpoints.

The diversity of expert profiles included in the analyzed Delphi studies demonstrates the method's flexibility in engaging multiple stakeholder perspectives. Table 3 presents a typology of experts involved, revealing that panels typically included a combination of subjects and roles. Some studies also integrated community representatives or market-based actors such as collectors. This wide-ranging composition reinforces the Delphi method's potential to synthesize fragmented knowledge and values across different sectors of the cultural heritage field.

3.2.3 Delphi procedures used

As shown in Table 4, regarding the specific procedures employed, all articles in the review explicitly described their methodological approaches: eight studies claimed to use the classical Delphi method. However, upon closer examination, it can be stated that seven of these actually applied a modified version, since the characteristics did not fully comply with the original guidelines established by the RAND Corporation for conducting a proper Delphi study (Khodyakov et al. 2023). In particular, the questionnaires administered were not identical across all rounds; instead, they were revised to remove statements on which consensus had been reached, as well as those that fell below a predefined threshold. The remaining items were then reformulated for further evaluation. One study followed the Grounded Del-

Table 2 Panel composition summary (Delphi studies in cultural heritage)(Source: authors' elaboration from research)

| | |
|-----------------------------|--|
| Number of experts contacted | Median = 16; Mean = 39 (min 8, max 255) |
| Contact methods | 1 in person; 8 online correspondence; 2 not reported |
| Participants | Median = 16; Mean = 26 (min 8, max 99) |
| Selection criteria | Reputation: 11/11 Organizational Affiliation: 9/11 (all except Yang & possibly Hanson) Recommendations: 2/11 (only Howard et al., via snowball sampling, and Pan et al.) Years of Experience: 10/11 (all except Skender & Dubovicki) Recruiter Contacts: 3/11 (Howard, Ferreiro-Rosende, Skender) |
| Expert roles | Museum professionals (incl. educators/guides): 5/11. Appearance count: 5 (Pauget, Ferreiro-Rosende, Upadhyaya, Howard, Schep) Curators: 1/11. Appearance count: 1 (possibly Hanson if broadly interpreted, not explicitly curators) Government officials: 2/11. Appearance count: 2 (Pauget, Jenić) Communication heads strategists: 1/11. Appearance count: 1 (Ferreiro-Rosende) Oversight authorities: 1/11. Appearance count: 1 (Pauget) Journalists/consultants/analysts: 2/11. Appearance count: 2 (Prieto-Rodriguez & Vecco, Ferreiro-Rosende, as economists/strategists) Artists: 3/11. Appearance count: 2 (Skender & Dubovicki, Yang, Pan et al.) Art academics: 5/11. Appearance count: 5 (Jenić, Skender & Dubovicki, Hanson, Yang, Pan et al.) Art educators (includes museum/visual arts educators): 3/11. Appearance count: 3 (Skender & Dubovicki, Hanson, Schep) Collectors: 1/11. Appearance count: 1 (Mateos-Ronco & Peirò Torralba) Other educators (e.g., teacher trainers, STEAM): 3/11. Appearance count: 3 (Schep, Yang, Hanson) Miscellaneous experts (e.g., accessibility, branding, workforce, AI experts): 5/11. Appearance count: 5 (Ferreiro-Rosende, Upadhyaya, Yang, Howard, Pan et al.) |

phi approach (Howard et al. 2016), and another employed the Fuzzy Delphi method (Jenić 2024). All the studies reported the number of rounds: 82% involved two rounds, while the remaining 18% used three rounds. In five studies, in addition to the formal rounds, an exploratory Round 0 was conducted, either with semi-structured interviews or, in one case,

Table 3 Categorization of experts in reviewed Delphi studies (*Source:* authors' elaboration from research)

| Study ID | Expert categories involved |
|---|---|
| Pauget et al. (2019). The Future of French Museums | Museum professionals, government officials, oversight authorities |
| Jenić (2024). Assessment of the Impact of Technological Tools on the Work of Artistic Organizations in Serbia through the Application of the Fuzzy-Delphi Method | Art academics (arts and culture), government officials, ICH practitioners |
| Mateos-Ronco and Peiró Torralba (2019). A Delphi Survey for the Spanish Art Market | Art market professionals, collectors, cultural economists |
| Skender and Dubovicki (2025). Developing Guidelines for the Future of Visual Art Education: A Delphi Study of the Croatian Case | Art educators, art academics, artists Designers (design academics), artists, STEAM educators |
| Yang et al. (2024). A Delphi consensus checklist for assessing arts design: A case for miniature robots in a STEAM contest | Museum professionals, communication/brand strategists, cultural policymakers |
| Ferreiro-Rosende (2022). Museum brand identity model approach: An online Delphi Study | |
| Upadhyaya (2023). Crowdsourcing descriptions of visual works of art for blind and partially sighted people. | Accessibility experts, museum professionals, NGO practitioners |
| Hanson (2020). Best practices for mentoring in arts entrepreneurship education: Findings from a Delphi study. | Art educators, art academics, cultural program coordinators |
| Howard et al. (2016). Passion trumps pay: A study of the future skills requirements of information professionals in galleries, libraries, archives and museums in Australia | Museum professionals, GLAM sector staff, workforce experts |
| Schep et al. (2017). Competent museum guides: defining competencies for use in art and history museums | Museum educators, museum guides, teacher trainers (educators, not curators) |
| Pan et al. (2025). Constructing a Sustainable Evaluation Framework for AIGC Technology in Yixing Zisha Pottery: Balancing Heritage Preservation and Innovation. | Artificial Intelligence Generated Content technology and Yixing Zisha design/production. |

through a focus group. In 18% of the cases reviewed, the panel of experts convened between rounds to discuss the results from the previous questionnaire. In one of these studies, a final meeting was also held after the last round to present the convergence outcomes (Pauget 2019). Every study began with a preparatory phase in which the research team conducted a literature review relevant to the specific Delphi topic. Additionally, in 45% of the cases, preliminary interviews were conducted, and in 36%, a pilot test was performed to validate the questionnaire design. The main method of questionnaire delivery was reported in 82% of the studies, and the majority of these opted for email or general online platforms. No studies used telephone, fax. The study duration was disclosed in about half of the reviewed cases: 60% lasted no more than two months, while in the remaining 40%, the Delphi process extended beyond eight weeks. One particularly long study lasted nearly two years

due to an additional post-COVID-19 round, which was conducted to confirm or reassess the convergence achieved in the earlier rounds (Ferreiro-Rosende 2022). The geographic scope was reported in 100% of the studies: nine were conducted at a national level, while the remaining two were international, involving experts from multiple countries (Yang et al. 2023). The question formats administered to the experts varied. In nine of the eleven studies, closed-ended questions with Likert scales were used: one study employed a 3-point scale, five used a 5-point scale, and three employed a 7-point scale. In five of these nine studies, open-ended questions were also included, bringing the total proportion of studies using open questions to 60%. In two studies, experts were asked to express their degree of agreement with specific statements, and in one case, multiple-choice questions were used. Statistical analysis methods were clearly reported in 90% of the studies. Of these: 44% used the mean; 22% the median; 33% the standard deviation; 22% the interquartile range (IQR); 11% the mode; and 78% used percentage agreement. As this breakdown suggests, some studies employed more than one statistical method in combination. Consensus criteria were reported in nine studies. These included: mean value: 33%; median: 11%; percentage agreement: 78%; threshold value: 11%; fuzzy Score A (specific to the Fuzzy Delphi study): 11%; variation in interquartile range: 11%. Again, several studies used multiple methods to assess consensus. Between rounds, feedback was provided in: 60% of the studies as both quantitative and qualitative summaries; 30% as quantitative only; and 18% as qualitative only (Pan et al. 2025). For a detailed overview of the procedures used, please refer to Table 2.

4 Results of the literature review

In response to the need for greater clarity and comparability across cases, Table 5 synthesizes the key methodological components and outcomes across the eleven reviewed Delphi studies. It highlights which design elements were most consistently used (e.g., anonymity, multi-round design), where variations occurred (e.g., feedback and consensus thresholds), and whether consensus or dissensus emerged. This table serves as a practical reference tool for cultural heritage researchers designing their own Delphi studies.

The nature of outcome (consensus and/or dissensus) and the use of an exploratory round were not indicated in the studies.

The narrative literature review conducted in the artistic domain reveals a predominant use of a modified Delphi method, although it is often incorrectly referred to as the classical form. Most studies employed a combination of closed-ended questions using primarily 5-point Likert scales, along with open-ended questions that allowed for additional comments. In terms of expert panel selection, there is a clear preference for assembling groups with heterogeneous viewpoints, in order to broaden the range of perspectives considered on a given topic. With respect to the other methodological features examined in the previous section, a certain degree of variability among the selected studies was observed. Moreover, in several cases, important methodological information, such as panel selection procedures or consensus criteria, was missing altogether. This limitation is primarily due to the fact that the application of the Delphi method in the artistic and cultural heritage context remains relatively recent. Indeed, the first studies offering comprehensive methodological reporting in this field have only started to appear since 2016. It is also important to note that only eleven studies were included in this review, as they were the only ones meeting the structural

Table 4 Procedures used summary (Delphi studies on cultural heritage)(Source: authors' elaboration from research)

| Procedure category | Reportedy (%) | Present (%) |
|---|---------------|-------------|
| <i>Type of delphi</i> | 100 | |
| Classical | | 73 |
| Modified | | 9 |
| Grounded | | 9 |
| Fuzzy | | 9 |
| <i>Statement elimination criteria</i> | 100 | |
| Based on consensus achieved | | 27 |
| No elimination | | 55 |
| Below a threshold level | | 18 |
| <i>Timing of expert meetings*</i> | 100 | |
| Between rounds | | 18 |
| After final round | | 9 |
| No meetings | | 82 |
| <i>Preliminary phase*</i> | 100 | |
| Interviews | | 45 |
| Literature review | | 100 |
| Pilot test | | 36 |
| <i>Delphi rounds*</i> | 100 | |
| Round 0 | | 45 |
| Round 1 | | 100 |
| Round 2 | | 82 |
| Round 3 | | 18 |
| Feedback between rounds | | 64 |
| <i>Study duration</i> | 45 | |
| 1–2 months | | 60 |
| More than 2 months | | 40 |
| <i>Questionnaire delivery method</i> | 82 | |
| E-mail/Internet | | 89 |
| Telephone/fax | | 0 |
| In person | | 11 |
| <i>Geographical scope</i> | 100 | |
| National | | 82 |
| International | | 18 |
| <i>Question formulation*</i> | 100 | |
| Scaled questions | | 82 |
| Open-ended questions / comment sections | | 64 |
| Approval of statements (Yes/No) | | 18 |
| Multiple choice questions | | 9 |
| <i>Likert Scale used</i> | 82 | |
| 3-point scale | | 11 |
| 5-point scale | | 56 |
| 7-point scale | | 33 |
| <i>Statistical analysis methods</i> | 90 | |
| Mean | | 44 |
| Median | | 22 |
| Standard deviation | | 33 |
| Interquartile range | | 22 |

Table 4 (continued)

| Procedure category | Reportedly (%) | Present (%) |
|--|----------------|-------------|
| Mode | | 11 |
| Percentage agreement | | 78 |
| <i>Consensus criteria used</i> | 90 | |
| Mean | | 33 |
| Median | | 11 |
| Percentage agreement | | 78 |
| Threshold value | | 11 |
| Fuzzy Score A | | 11 |
| IQR variation | | 11 |
| <i>Feedback provided between rounds*</i> | 100 | |
| Quantitative only | | 27 |
| Quantitative and qualitative | | 55 |
| Qualitative only | | 18 |

* The multiresponse may sum above 100%

and methodological transparency standards necessary for rigorous evaluation of the Delphi process. In contrast, six other reviewed studies did not examine the process in sufficient detail and were therefore excluded from the review. These excluded studies lacked precise descriptions of the methodology used, particularly in terms of expert panel composition and consensus determination, and typically referenced the Delphi method only superficially, offering limited insight into the actual findings or procedural steps.

Our key findings mostly concern the panel composition; the questionnaire design; the consensus metrics; and the methodological gaps. Firstly, for what concerns the panel composition, it emerges that most studies utilized panels of 10–30 experts, often drawn from heterogeneous backgrounds including academia, curation, market experts, and artists themselves. Diversity of perspective was found to be more valued than disciplinary homogeneity. Secondly, with regard to the questionnaire design, successful Delphi applications used open-ended exploratory questions in early rounds (Round 0 or 1), later transitioning to Likert-scale or ranking formats. Cultural dimensions such as symbolism, aesthetics, and socio-political relevance were frequent criteria in value assessments. Thirdly, by taking into account the consensus metrics, it arises that consensus was generally defined using inter-quartile range (IQR), percentage agreement, or standard deviation thresholds. However, in several studies, the emphasis shifted from strict consensus to mapping the plurality of expert positions, a model especially relevant in heritage contexts with contested narratives. Finally, with regard to the methodological gaps, few studies clearly reported validation strategies (e.g., reliability testing, pilot studies), and even fewer addressed the epistemological foundations of their Delphi design. Moreover, the lack of clear validation protocols or replicability standards in many studies highlights the need for improved methodological reporting, particularly in fields where decisions bear significant cultural and policy implications. These findings directly informed the structure and expectations of the present Delphi application. In particular, the emphasis on pluralistic value systems and the need for interpretative flexibility led to the inclusion of both qualitative and quantitative phases.

Table 5 Delphi design elements and consensus outcomes across reviewed cultural heritage studies

| Study ID | Number of rounds | Anonymity maintained | Heterogeneous expert panel | Feedback provided between rounds | Explicit consensus defined (e.g., % threshold) |
|---|------------------|----------------------|----------------------------|----------------------------------|--|
| Pauget et al. (2019). The Future of French Museums | 3 | Yes | Yes | Yes | Yes |
| Jenić (2024). Assessment of the Impact of Technological Tools on the Work of Artistic Organizations in Serbia through the Application of the Fuzzy-Delphi Method | 2 | Yes | Yes | Yes | No |
| Mateos-Ronco & Peirò Torralba (2019). A Delphi Survey for the Spanish Art Market | 3 | Yes | No | No | No |
| Skender and Dubovicki (2025). Developing Guidelines for the Future of Visual Art Education: A Delphi Study of the Croatian Case | 2 | No | Yes | Yes | Yes |
| Yang et al. (2023). A Delphi consensus checklist for assessing arts design: A case for miniature robots in a STEAM contest | 3 | Yes | Yes | Yes | Yes |
| Ferreiro-Rosende (2022). Museum brand identity model approach: An online Delphi Study | 2 | Yes | No | Yes | No |
| Upadhyaya (2023). Crowdsourcing descriptions of visual works of art for blind and partially sighted people. | 3 | Yes | Yes | Yes | Yes |
| Hanson (2020). Best practices for mentoring in arts entrepreneurship education: Findings from a Delphi study. | 2 | Yes | Yes | Yes | Yes |
| Howard et al. (2016). Passion trumps pay: A study of the future skills requirements of information professionals in galleries, libraries, archives and museums in Australia | 3 | Yes | Yes | No | Yes |
| Schep et al. (2017). Competent museum guides: defining competencies for use in art and history museums | 3 | Yes | Yes | Yes | No |
| Pan et al. (2025). Constructing a Sustainable Evaluation Framework for AIGC Technology in Yixing Zisha Pottery: Balancing Heritage Preservation and Innovation. | 2 | Yes | Yes | Yes | Yes |

Source: authors' elaboration from research

4.1 Proposed Delphi flow for cultural heritage research

Building on the methodological insights gathered from the review, we propose a refined and flexible Delphi process model that is especially suited to the complexities of cultural heritage research. This model integrates best practices while addressing the specific challenges observed in previous studies, such as limited methodological transparency, panel diversity, and rigid consensus definitions.

4.1.1 Panel composition and selection

- Target size: 15–25 experts, allowing for diversity without compromising manageability.
- Selection strategy: Use a multi-criteria selection matrix, combining expertise, institutional affiliation, peer recognition, and disciplinary background.
- Diversity emphasis: Prioritize heterogeneous perspectives (including curators, heritage professionals, artists, academics, market actors, and policy-makers) to ensure inclusivity of symbolic, aesthetic, legal, and social viewpoints.
- Sampling approach: Combine purposive sampling with limited snowball referrals, ensuring controlled diversity while minimizing epistemic bias.

4.1.2 Preliminary phase (round 0)

- Purpose: Establish a shared conceptual ground and surface key themes.
- Tools: Conduct semi-structured interviews or a focus group to generate initial content for the Delphi rounds.
- Literature review: Mandatory preparatory synthesis to identify thematic axes (e.g., conservation, interpretation, valuation, audience engagement).

4.1.3 Questionnaire design

- Round 1: Include exploratory questions and open-ended prompts aimed at capturing diverse evaluative criteria and sectoral interpretations.
- Round 2: Convert qualitative inputs into Likert-scale statements or ranking exercises, maintaining interpretive richness.
- Optional Round 3: Focus on convergence zones and dissent rationale rather than enforcing artificial consensus.

4.1.4 Consensus metrics

- Plurality-aware framework: Combine quantitative indicators (IQR, % agreement, SD thresholds) with qualitative mapping of divergent viewpoints.
- Soft consensus: Accept and categorize minority positions when normatively or culturally significant.
- Feedback mechanism: Provide each expert with summary statistics and anonymized peer inputs to facilitate reflective reassessment.

4.1.5 Delivery and logistics

- Mode: Online, asynchronous rounds using secure platforms to facilitate international participation and response flexibility.

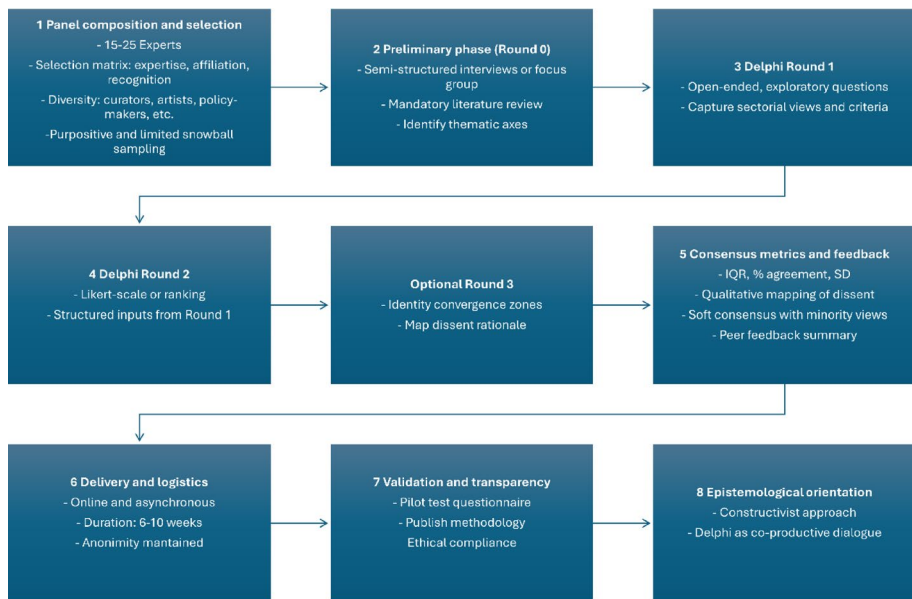


Fig. 1 Proposed Delphi process flowchart for cultural heritage research

- **Timing:** Entire process to be completed in 6–10 weeks, with flexibility for longer studies involving cross-national panels.
- **Anonymity:** Maintain respondent anonymity throughout to minimize dominant voices and encourage candour.

4.1.6 Validation and transparency

- **Pilot testing:** Prior to full deployment, test questionnaire structure and platform usability with a small expert subset.
- **Documentation:** Publish detailed methodological appendices, including panel selection rationale, question evolution, and data coding strategies.
- **Ethical compliance:** Follow institutional protocols on informed consent and data protection.

4.1.7 Epistemological foundations

- Embrace constructivist epistemology to recognize the interpretive and value-laden nature of cultural heritage.
- Design the Delphi process not merely as a forecasting tool, but as a structured dialogical space for co-producing situated knowledge.

Compared to traditional Delphi flowcharts, the model presented in Fig. 1 is distinguished by its emphasis on epistemological pluralism, the integration of a non-evaluative exploratory

phase (Round 0), and the accommodation of dissensus alongside consensus. These features make it particularly suited to the symbolic, interdisciplinary, and value-contested nature of cultural heritage research. Unlike existing frameworks primarily focused on forecasting or technical consensus, our model foregrounds co-construction of knowledge, inclusive panel diversity, and reflexive feedback mechanisms.

5 Discussion

The findings from the literature review reinforce the Delphi method's relevance in addressing complex, ambiguous, and value-laden challenges typical of cultural heritage research. Three key methodological insights emerged.

5.1 Methodological reflections

First, the role of *iterative feedback* was central. Feedback between rounds encouraged experts to refine their judgments and reconsider divergent perspectives, enhancing both the depth and coherence of the group's reasoning. This iterative mechanism reflects the Kantian and Singerian epistemological underpinnings of Delphi, which emphasize reflexivity, learning, and the co-construction of knowledge (Marbach et al. 1991; Linstone and Turoff, 2002).

Second, *panel diversity* was critical to the richness of insights generated. Studies that included experts from varied sectors, such as academia, curatorship, market analysis, and artistic practice, achieved more comprehensive and nuanced assessments. This aligns with best practices identified in the review, where heterogeneity was consistently associated with increased legitimacy and robustness of conclusions. However, while expert diversity was generally prioritized, several studies relied on snowball sampling, which can introduce epistemic biases and reinforce existing power asymmetries within heritage decision-making networks. These dynamics warrant greater scrutiny in future Delphi designs.

Third, the analysis highlighted the importance of going *beyond consensus*. While convergence of opinion remains a valuable goal, areas of persistent disagreement, particularly around normative and symbolic dimensions of heritage, were equally informative. Such *dissensus zones* can illuminate contested priorities, reveal underexplored tensions, and guide future policy deliberation by surfacing pluralistic values rather than suppressing them. Nevertheless, while expert consensus remains a valuable output of Delphi, its traditional use risks sidelining *community-based knowledge and lived experience*. Several of the reviewed studies highlighted the absence of non-expert voices as a limitation. As heritage studies move toward more participatory paradigms, Delphi can evolve accordingly. Incorporating community representatives, grassroots practitioners, or culture bearers into Delphi panels (or designing hybrid Delphi processes that embed earlier community consultations) could enrich the process and better reflect the *co-construction of heritage meaning*.

One of the key strengths of the Delphi method highlighted by this study is its capacity to capture relational perspectives and stakeholder-specific knowledge within complex governance environments. Cultural heritage often involves multi-actor ecosystems, including institutional bodies, scholars, practitioners, market agents, and civil society. Delphi-based approaches, especially in their modified forms, such as Fuzzy Delphi or Policy Delphi, are particularly valuable in such settings. For example, the Fuzzy Delphi model enables the

aggregation of expert opinions in ambiguous contexts with non-binary value constructs, while the Policy Delphi focuses on mapping dissent and exploring alternative viewpoints. These features make Delphi highly responsive to the value pluralism and interpretive challenges inherent in heritage-related decision-making.

A final methodological insight emerging from the reviewed studies relates to the composition of expert panels. Delphi's strength lies not only in promoting convergence, but also in surfacing the plurality of perspectives embedded within diverse stakeholder groups. Across the studies, expert panels included academics, policymakers, museum curators, cultural entrepreneurs, and community-based practitioners. This diversity enhanced both the breadth and legitimacy of findings, particularly in contexts where cultural heritage intersects with contested values or hybrid forms of ownership. Such inclusivity highlights the method's suitability for addressing the relational and socio-political complexities of heritage governance.

5.1.1 Integration with multi-criteria decision-making (MCDM) frameworks

In addition to the standalone use of Delphi explored in this review, many cultural heritage studies have incorporated Delphi within broader multi-criteria decision-making (MCDM) frameworks, such as Analytic Hierarchy Process (AHP), Analytic Network Process (ANP), or fuzzy-TOPSIS. In such applications, Delphi is typically used as a pre-analytical tool to identify relevant criteria, assess initial weights, or validate indicators. These integrations reflect the increasing need for decision-support methods that are both systematic and responsive to stakeholder values.

The narrative Delphi framework proposed in this study can be positioned as a complementary tool within these MCDM approaches. Rather than serving only as a mechanism to quantify expert judgments, the narrative approach facilitates deeper articulation of reasoning, value assumptions, and epistemic justifications behind those judgments. This can help mitigate the risk of "black box" modeling by embedding qualitative nuance and stakeholder narratives into the initial structuring phase of MCDM.

Moreover, the combination of Delphi and MCDM is particularly suitable for heritage governance contexts that require both legitimacy and analytical rigor. For instance, a heritage policy Delphi may be used to elicit divergent stakeholder views on preservation priorities, while a subsequent AHP model can quantify consensus-based weights across criteria. In this way, Delphi supports both the social legitimacy of decision inputs and the analytical clarity of MCDM outputs. As cultural heritage decision-making increasingly demands interdisciplinary coordination, value-sensitive planning, and transparent justification, integrating Delphi into hybrid frameworks offers a robust pathway forward.

5.2 Implications for cultural heritage research

While these findings offer promising insights, they are based on a limited number of studies and should be interpreted with caution when applied to broader heritage research contexts.

This study suggests that the Delphi method is not only adaptable to cultural heritage contexts but also particularly well-suited to address the sector's inherent complexity, information asymmetry, value pluralism, and policy relevance. Cultural heritage often involves contested meanings, long-term planning horizons, and multidimensional impacts, which

require participatory and flexible methodologies. The review confirms that Delphi can significantly support three critical research needs in the cultural heritage field:

- *strategic foresight*. The Delphi method provides a structured environment to anticipate emerging trends, technologies, and social shifts. This is particularly valuable for institutions dealing with evolving heritage categories such as digital culture, intangible heritage, or community-based practices.
- *Participatory governance*. By integrating diverse expert voices, including those outside traditional institutional settings, Delphi supports more inclusive decision-making. This aligns with global recommendations, such as those by UNESCO, advocating for multi-actor approaches to heritage governance.
- *Sustainability integration*. Delphi's flexibility allows for the development and refinement of hybrid indicators that reflect cultural, social, environmental, and economic values. This is especially relevant in peripheral or fragile regions, where heritage is tightly interwoven with broader sustainability challenges (Imperiale et al. 2021).

5.3 Methodological limitations

Although the literature review offers important insights, several limitations must be acknowledged. First, the number of studies meeting rigorous methodological criteria was relatively small ($n = 11$), which may limit the generalizability of findings across the broader cultural heritage field. Second, the reviewed studies were predominantly based in European or Western contexts, suggesting a geographic concentration that might underrepresent other heritage epistemologies or governance models. Third, not all included studies provided sufficient detail on Delphi implementation (e.g., panel recruitment rationale, feedback techniques, consensus thresholds), which limits cross-comparison and synthesis. Moreover, while Delphi's potential in cultural research is clear, its effectiveness depends heavily on the transparency of its design, particularly questionnaire formulation, feedback framing, and participant engagement strategies. Future applications should emphasize methodological clarity and epistemological reflection to ensure rigor and replicability.

These limitations highlight the need for more geographically diverse and epistemologically inclusive Delphi applications in future studies. Additionally, researchers should carefully consider whether insights drawn from expert panels in institutionalized settings can be effectively translated to participatory or community-based heritage governance models.

6 Conclusions

This study contributes to the methodological development of cultural heritage research by providing evidence of the relevance and adaptability of the Delphi technique as a participatory, iterative, and epistemologically grounded method. Based on a review of eleven peer-reviewed Delphi studies within cultural heritage-related domains, the paper identifies key design elements and proposes a flexible framework responsive to the sector's complexity, interdisciplinarity, and normative challenges. The research was conducted as an open and exploratory strategy to allow for an unbiased examination of the field and to identify recurring patterns, methodological tendencies, and conceptual commonalities across diverse

studies. This approach aimed at capturing the current state of the field and highlighting emerging directions in the application of the Delphi method to cultural heritage research, without being constrained by pre-existing frameworks. Broad and general keywords were employed in the search strategy to capture the widest possible range of studies applying the Delphi method within the cultural and artistic domains. Nonetheless, a paucity of relevant papers was identified, indicating that the use of the Delphi method in these fields remains relatively uncommon.

In a field where empirical data are often limited, and value is contested or fluid, Delphi provides a structured approach for building expert-informed consensus, or pluralistic mapping, on strategic and evaluative matters. This suggests that the Delphi method may serve not only as a methodological choice but also as a tool that can support inclusive and sustainable cultural policy development.

6.1 Theoretical contributions

This study extends the theoretical application of the Delphi method by situating it within the context of cultural sustainability. While traditionally applied in fields such as healthcare or technology foresight, Delphi remains under-theorized in cultural studies. By integrating philosophical underpinnings, such as Lockean consensus-building and Kantian reflexivity, into a domain characterized by symbolic value, ambiguity, and stakeholder diversity, the study fills a gap in both Delphi methodology and heritage research (Linstone and Turoff 2002; Marbach et al. 1991). The findings reinforce the importance of conceptual pluralism in heritage assessments. Rather than enforcing consensus, Delphi enables the structured articulation of disagreement, which is particularly useful when navigating competing interpretations of cultural value.

6.2 Methodological contributions

The literature review conducted, although based on a relatively limited number of studies, offers preliminary insights into: (i) emerging best practices in expert panel construction, especially prioritizing heterogeneity over disciplinary homogeneity; (ii) the value of combining quantitative (e.g., Likert scales, IQR) and qualitative (e.g., open-ended feedback) methods to capture expert judgment in full complexity; and (iii) the insight that methodological transparency, particularly in defining consensus thresholds and feedback design, is essential for research replicability and legitimacy. Furthermore, the literature review emphasized the importance of panel heterogeneity, not only in disciplinary background but also in institutional affiliation and role in heritage ecosystems. By including experts from academia, public heritage institutions, local government, and private sector actors (e.g., gallery owners, consultants), the reviewed studies demonstrated the method's capacity to integrate stakeholder-specific viewpoints. This reinforces the argument that Delphi can effectively model the dialogical nature of heritage value formation and policy development. These elements suggest an adaptable framework that may inform future Delphi studies in the heritage field, particularly as methodological reporting and applications in this sector mature.

6.3 Practical and policy implications

For policymakers, heritage institutions, and sustainability researchers, this study presents several actionable insights. The first insight concerns the idea of a structured decision support. Delphi offers a rigorous mechanism for planning and evaluation where traditional indicators (e.g., GDP contribution, attendance figures) fall short of capturing symbolic or community value. The second insight refers to participatory governance. In fact, by involving a broad spectrum of expert voices, Delphi supports more inclusive forms of heritage governance, aligned with global frameworks like the UNESCO Convention on the Value of Cultural Diversity. To fully realize Delphi's participatory potential, future applications should consider including non-institutional stakeholders, such as heritage users, local artisans, or community activists. Their perspectives can challenge institutional blind spots and provide deeper cultural legitimacy to heritage strategies. This integration aligns with UNESCO's emphasis on inclusive heritage governance and strengthens Delphi's function as a tool not just for expert coordination, but for collaborative cultural development. The third insight refers to integrated sustainability indicators as the findings suggest a clear need for hybrid frameworks that combine cultural, ecological, economic, and social dimensions, especially relevant in regions where heritage intersects with broader sustainability challenges (Imperiale et al. 2021). The last insight concerns the concept of *adaptive policy design* where the iterative, feedback-based nature of Delphi allows institutions to remain agile in rapidly changing contexts, such as the digital transformation of cultural expression or the reevaluation of postcolonial narratives.

6.4 Limitations and directions for future research

As with all literature-based studies, this study has its limitations. The relatively small number of eligible Delphi studies in the cultural heritage sector ($n=11$) limits the generalizability of findings. Moreover, the majority of reviewed studies were based in European contexts, which may underrepresent global heritage perspectives. Future research should certainly: expand the dataset to include non-Western applications of Delphi in heritage contexts; explore combinations of Delphi with complementary qualitative methods, such as ethnography or discourse analysis; investigate alternative consensus metrics, including entropy scores or probabilistic models, for use in interpretive cultural settings; and examine how Delphi can be digitally augmented (e.g., through AI tools or scenario simulations) for long-term planning in heritage conservation, climate adaptation, or cultural education. In fact, cultural heritage is not merely a legacy of the past but a living, evolving system. It requires flexible, interdisciplinary, and participatory methods to be effectively studied, preserved, and reimagined. The Delphi method, when carefully adapted and philosophically grounded, holds promise as a key tool in this evolving methodological landscape. In this view, the central contribution of this study is to have shown the Delphi as an adaptable, epistemologically grounded method for heritage research.

Acknowledgement We thank Gaia Genellini and Andrea Morena Piazza for their support in the literature search and selection of the studies analyzed in this review.

Author contributions F.C., L. B., and P.M. jointly developed the research concept and structured the methodological framework. F.C. drafted the main manuscript text and conducted the literature review. L.B. and P.M.

contributed to the analysis design and edited the final version of the manuscript. All authors critically revised the work for important intellectual content and approved the submitted version. All authors have agreed to be personally accountable for their own contributions and to ensure the integrity of the entire work.

Funding Open access funding provided by Università degli Studi di Milano - Bicocca within the CRUI-CARE Agreement. The authors did not receive support from any organization for the submitted work.

Data availability No datasets were generated or analysed during the current study.

Declarations

Conflict of interest The authors declare no conflict of interest.

Ethical approval Nothing to declare.

All authors certify that they have no affiliations with or involvement in any organization or entity with any financial interest or non-financial interest in the subject matter or materials discussed in this manuscript.

Open Access This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

References

- Ashworth, G.J., Tunbridge, J.E.: *Pluralising Pasts: Heritage, Identity and Place in Multicultural Societies*. Pluto, London (2007)
- Candela, G., Lorusso, S., Matteucci, C.: Information, documentation and certification in western and ethnic art. *Conserv. Sci. Cult. Herit.* **9**, 47–78 (2009)
- Candela, G., Castellani, M., Pattinoni, P.: Tribal art market: signs and signals. *J. Cult. Econ.* **36**, 289–308 (2012)
- Coscia, C., Dalpiaz, P.E., Giacopelli, E., Infortuna, G.M.: The case of the Unità residenziale Est - Ex-Hotel La Serra. The Delphi method to support intervention scenarios to re-type the city of Ivrea. *Valori Valutazioni.* **22**, 47–65 (2019)
- Cuhls, K.: *Foresight Und Delphi-Methoden in Der Wissenschaftspolitik: Theorie, Praxis Und Beispiele*. Springer, Berlin (2023)
- Dalkey, N., Helmer, O.: An experimental application of the Delphi method to the use of experts. *Manage. Sci.* **9**(3), 458–467 (1963)
- Ferreiro Rosende, E.: Museum brand identity model approach: an online Delphi study. *Methaodos Revista De Ciencias Sociales.* **10**(2), 160–176 (2022)
- Hanson, J.: Best practices for mentoring in arts entrepreneurship education: findings from a Delphi study. *Entrepreneurship Educ. Pedagogy.* **4**(2), 119–142 (2020). <https://doi.org/10.1177/2515127420964120>
- Howard, K.: Emergence of a new method: the grounded Delphi method. *Libr. Inform. Res.* **42**(126) (2018). <https://doi.org/10.29173/lirg746>
- Howard, K., Partridge, H., Hughes, H., Oliver, G.: Passion Trumps pay: a study of the future skills requirements of information professionals in galleries, libraries, archives and museums in Australia. *Inform. Res.* **21**(2), 714–711 (2016)
- Imperiale, F., Adamo, S., Fasiello, R.: Sustainability determinants of cultural and creative industries in peripheral areas. *J. Risk Financial Manage.* **14**(9), 438 (2021). <https://doi.org/10.3390/jrfm14090438>
- Innocenti, N., Lazerretti, L.: Do the creative industries support growth and innovation in the wider economy? Industry relatedness and employment growth in Italy. *Ind. Innovat.* **26**(10), 1150–1172 (2019). <https://doi.org/10.1080/13662716.2018.1561360>

- Jenic, K.: Assessment of the impact of technological tools on the work of artistic organizations in Serbia through the application of the fuzzy-Delphi method. *Eng. Manage.* **10**(1), 12–23 (2024)
- Khodyakov, D., Holsapple, M.A., Vaughan, E.: The modified Delphi technique: a methodological review. *Technol. Forecast. Soc. Chang.* **186**, 122181 (2023). <https://doi.org/10.1016/j.techfore.2022.122181>
- Kolesnik, A., Rusanov, A.: Heritage as process and its agency: perspectives of (critical) heritage studies. *High. School Econ. Res. Paper. No WP BRP 198/HUM/2020* (2020). <https://doi.org/10.2139/ssrn.3746304>
- Landeta, J.: Current validity of the Delphi method in social sciences. *Technol. Forecast. Soc. Chang.* **73**(5), 467–482 (2006). <https://doi.org/10.1016/j.techfore.2005.09.002>
- Lazzeretti, L., Capone, F., Innocenti, N.: Exploring the intellectual structure of creative economy research and local economic development: a co-citation analysis. *Eur. Plan. Stud.* **25**(10), 1677–1697 (2017). <https://doi.org/10.1080/09654313.2017.1337728>
- Linstone, H.A., Turoff, M. (eds.): *The Delphi Method: Techniques and Applications*, Revised edn. New Jersey Institute of Technology, Newark (2002)
- Liritzis, I.: Delphi4Delphi: Data acquisition of Spatial cultural heritage data for ancient Delphi, Greece. In: Vincent, M., López-Mencheró Bendicho, V., Ioannides, M., Levy, T. (eds.) *Heritage and Archaeology in the Digital age. Quantitative Methods in the Humanities and Social Sciences*, pp. 129–146. Springer, Cham (2017) https://doi.org/10.1007/978-3-319-65370-9_8
- Logan, W., Kockel, U., Craith, M.N.: The new heritage studies: origins and evolution, problems and prospects. In: Logan, W., Craith, M.N., Kockel, U. (eds.) *A Companion To Heritage Studies*, pp. 1–26. Wiley, Chichester (2016)
- Marbach, G., Naddeo, A., Pacinelli, A.: *Il Metodo Delphi: Teoria E Pratica*. FrancoAngeli, Milano (1991)
- Mateos-Ronco, A., Peiró Torralba, N.: Sustainable management of contemporary art galleries: a Delphi survey for the Spanish art market. *Sustainability.* **11**(2), 541 (2019). <https://doi.org/10.3390/su11020541>
- McGeoch, M., Brunetto, Y., Brown, K.: The policy Delphi method: contribution to policy and strategy within energy organisations: a 2013 Malaysian case study with global implications. *Qual. Quant.* **48**, 3195–3208 (2014). <https://doi.org/10.1007/s11135-013-9950-1>
- Pan, S., Anwar, R.B., Awang, N.N.B., He, Y.: Constructing a sustainable evaluation framework for AIGC technology in Yixing zishapottery: balancing heritage preservation and innovation. *Sustainability.* **17**, 910 (2025)
- Pauget, B., Tobelem, J.M., Bootz, J.P.: The future of French museums in 2030. *Technol. Forecast. Soc. Chang.* **162**, 120384 (2019). <https://doi.org/10.1016/j.techfore.2020.120384>
- Reher, G.: What is value? Impact assessment of cultural heritage. *J. Cult. Herit. Manage. Sustainable Dev.* **10**(4), 429–436 (2020). <https://doi.org/10.1108/JCHMSD-10-2019-0128>
- Schep, M., van Boxtel, C., Noordegraaf, J.: Competent museum guides: defining competencies for use in art and history museums. *Museum Manage. Curatorship.* **33**(1), 2–24 (2017). <https://doi.org/10.1080/09647775.2017.1387590>
- Shönfeld, S., Reinstaller, A.: The effects of gallery and artist reputation on prices in the primary market for art: a note. *J. Cult. Econ.* **31**, 143–153 (2007)
- Skender, L., Dubovicki, S.: Developing guidelines for the future of visual art education: a Delphi study of the Croatian case. *Futures Foresight Sci.* **7**(1) (2025). <https://doi.org/10.1002/ffo2.204>
- Stig Sørensen, M.L., Carman, J.: *Heritage studies: an outline*. In: Stig, M.L., Sørensen, Carman, J. (eds.) *Heritage Studies: Methods and Approaches*, pp. 11–28. Routledge, New York (2009)
- Tirole, J.: *The Theory of Industrial Organization*. The MIT Press (1998)
- UNESCO: *Operational Guidelines for the Implementation of the World Heritage Convention*. World Heritage Centre (2025). <https://whc.unesco.org/en/guidelines/>
- Upadhyaya, M.: *Crowdsourcing descriptions of visual works of art for blind and partially sighted people*. Master's thesis, University of York. (2023). <https://eprints.whiterose.ac.uk/212566/> Accessed 20 March 2025
- Yang, Q., Hong, J.C., Gu, J.: A Delphi consensus checklist for assessing arts design: a case for miniature robots in a STEAM contest. *Int. J. Technol. Des. Educ.* **34**, 249–265 (2023). <https://doi.org/10.1007/s10798-023-09823-z>