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Article

Innovation In Cultural Heritage Tourism: A Systematic Review Of Forms, Technologies, Theories And Measured Outcomes

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Abstract: Innovation is widely presented as the principal instrument for renewing cultural heritage tourism, yet the evidence supporting this claim remains dispersed across technology-acceptance research, heritage-management studies and destination economics. This paper systematically reviews sixty peer-reviewed studies published between 2005 and 2026 in high ranking journals, coding each source across eight analytical fields: innovation form, technology, theoretical framework, research design, geographical setting, antecedents, stakeholder configuration and measured outcomes. Product and service innovation dominates the field, accounting for 40 of 60 studies (66.7 %), while process, organisational, institutional and business-model innovation together account for 27 codes. Technology-based innovation is examined in 33 studies (55.0 %), with augmented reality (20) and virtual reality (16) the most frequent applications. The review identifies three systematic weaknesses in the evidence base. First, innovation itself is operationalised as a measurable construct in only 11 studies (18.3 %); elsewhere it is treated as an undefined background condition. Second, only 40.0 % of the studies apply a named theory, and the applied frameworks are concentrated in individual-level acceptance models rather than organisational or systemic theories of innovation. Third, and most consequentially, an experience-economics gap is documented: technology-based studies measure visitor experience in 81.8 % and behavioural intention in 57.6 % of cases, but revenue in only 18.2 % and employment in 6.1 %, and just two studies (3.3 %) report a monetary or employment figure attributable to an innovation. An integrative framework linking antecedents, innovation forms and a two-layer outcome structure is proposed, and a research agenda addressing measurement, economic attribution and theoretical consolidation is set out.

Keywords: cultural heritage tourism; innovation; visitor experience; economic outcomes; destination competitiveness.

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1. Introduction

Cultural heritage has become one of the principal economic assets of contemporary destinations rather than a purely conservational obligation. Cross-country evidence covering 129 countries confirms that the presence of World Heritage properties raises both international arrivals and tourism receipts, while regional analysis of the European Union shows that cultural heritage density strengthens economic resilience by attracting demand during less favourable periods [1]. At the same time, the competitiveness of destinations built on such assets is unevenly realised: aggregate indices covering more than two hundred countries assign the highest weights to technology and social development, and frontier analysis of 103 Italian regions reports technical efficiency scores ranging from 0.15 to 0.85 with a mean of 0.56 [2]. The gap between endowment and performance is therefore substantial, and innovation is routinely invoked as the mechanism that closes it.The literature responding to this claim has grown rapidly but along separate tracks. One track studies visitors' acceptance of immersive technologies at heritage sites; a second examines organisational and institutional arrangements through which heritage assets are managed and reused; a third analyses innovation as a regional or firm-level determinant of tourism competitiveness [3].

Recent editorial syntheses in tourism and in information systems confirm both the momentum and the dispersion of this work [4]. Each track has produced robust findings, yet they employ different units of analysis, different theories and, critically, different outcome variables. As a result, it is currently difficult to state what innovation in cultural heritage tourism actually delivers, and for whom. Existing reviews only partly address this problem. Technology-centred reviews map immersive applications and their experiential effects [5], policy-oriented reviews synthesise artificial-intelligence applications in heritage management, and bibliometric work maps keywords and co-citation structures. None systematically cross-tabulates innovation forms against the outcomes that are actually measured, and none reports how frequently innovation itself is operationalised as a construct. The omission is consequential: if the field predominantly measures perceptual responses, claims about the economic contribution of innovation rest on inference rather than evidence [6].

This paper addresses that omission. It reviews sixty studies published between 2005 and 2026 and answers four research questions. RQ1: which forms of innovation are studied in cultural heritage tourism, and in what proportions? RQ2: which technologies and theoretical frameworks underpin them? RQ3: which outcomes are measured, and how is innovation itself operationalised? RQ4: which antecedents and stakeholder configurations are reported as enabling innovation? The contribution is fourfold: a quantified evidence map of the field; documentation of a systematic experience-economics gap; an integrative framework linking antecedents, innovation forms and a two-layer outcome structure; and a research agenda specifying what must be measured for the economic case for heritage innovation to be evidence-based [7].

2. Materials and Methods

Corpus construction. The review covers sixty peer-reviewed articles published between 2005 and 2026 in journals ranked in the second, third and fourth quartiles, retrieved through a structured search of international bibliographic databases. Four search strands were combined: innovation types in cultural tourism and heritage management; effects of digital technologies on the visitor experience and revenue at heritage sites; drivers and barriers of innovation adoption; and the measurement of innovation performance. Three inclusion criteria were applied. The study had to address cultural heritage or cultural tourism as its empirical or conceptual object; it had to address innovation, a specific technology or a novel organisational or financial arrangement rather than heritage management in general; and it had to report either an empirical result or an explicitly formulated conceptual framework. The final corpus accumulated 5,482 citations, with a maximum of 378 for a single article.

Coding frame. Each source was coded across eight analytical fields: (i) innovation form, classified as product or service, process, marketing, organisational, institutional, social or business-model innovation; (ii) technology applied, or a "non-technological" code where the innovation was organisational or experiential; (iii) theoretical framework, recorded as a named theory, an author-developed framework or absent; (iv) research design and sample; (v) country or site; (vi) reported antecedents of adoption; (vii) stakeholder configuration; and (viii) measured outcomes. Multiple codes were permitted per source, so category totals exceed sixty.

Coding rules and analysis. Two conservative rules governed the outcome coding. An outcome was recorded only where the source stated that it had been measured or estimated; outcomes mentioned as aspirations, implications or directions for future research were not counted. Similarly, a theory was recorded as applied only where it framed the study's own analysis, not where it appeared in a review of prior work or in a statement that no such theory was used. Frequency analysis and cross-tabulation were then performed, the principal cross-tabulation being outcome coverage by technological base, which isolates whether the choice of outcome variable follows from the type of innovation studied. Table 1 describes the corpus.

Table 1. Profile of the reviewed corpus (n = 60)

Dimension	Category	Studies	Share, %
Publication period	2005-2013	3	5.0
	2014-2018	18	30.0
	2019-2022	21	35.0
	2023-2026	18	30.0
Geographical setting	Europe	22	36.7
	Asia-Pacific	15	25.0
	Global or multi-country	4	6.7
	Americas	2	3.3
	Middle East and Africa	1	1.7
	Not specified	18	30.0
Technological base	Technology-based innovation	33	55.0
	Non-technological innovation	27	45.0
Completeness of reporting	Antecedents of adoption reported	53	88.3
	Stakeholder roles specified	49	81.7
	Named theory applied	24	40.0
	Innovation measured as a construct	11	18.3
	Economic effect reported as a figure	2	3.3

Source: authors' coding of the corpus. Geographical categories are mutually exclusive; multi-country studies are coded once.

The distribution of publication years shows that the field is recent and still expanding: three studies predate 2014, whereas 39 (65.0 %) were published from 2019 onwards (Figure 1). Journal concentration is moderate, with *Sustainability* (7), the *Journal of Heritage Tourism* (5), the *Journal of Travel Research* (4) and *Current Issues in Tourism* (4) accounting for one third of the corpus.

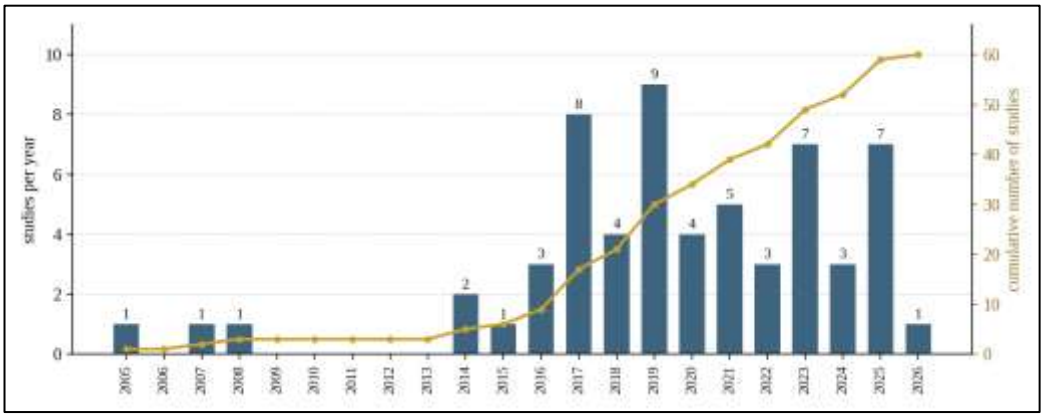


Figure 1. Annual and cumulative distribution of the reviewed studies, 2005-2026

Methodological limitations. Three limitations follow from this design. Coding relies principally on abstracts and reported summaries, so instruments described only in full texts may be under-recorded; the corpus is restricted to English-language publications in Q2-Q4 journals, which excludes both top-quartile work and regional non-indexed literature; and the conservative outcome rule means that reported shares represent lower bounds on what the field measures. These limitations bias the analysis towards understating coverage, which strengthens rather than weakens the direction of the findings reported below.

3. Results

3.1. Forms of innovation

Product and service innovation dominates the field, coded in 40 of 60 studies (66.7 %). This category covers immersive visitor applications [8], gamified and mobile services [9], smart-technology service bundles [10], and non-technological experiential redesign such as attraction atmospherics [25], live performance and reconstruction [11], interpretive media [12], heritage rejuvenation formats [13], guiding services [14] and participative co-creation of archaeological heritage [15]. Process innovation appears in nine studies, typically as data-driven impact assessment [16], perationali of collections [17] or artificial-intelligence-enabled conservation and visitor management [18]. Organisational and institutional innovation is coded in eight and five studies respectively, covering adaptive reuse [19], quality certification systems [20], and the institutional frameworks through which World Heritage status is converted into new products and collaborative networks [21]. Business-model innovation is coded five times and is almost always proposed rather than tested [22]. Marketing innovation is coded twice and is perationalized as a multidimensional destination brand experience linking sensory, intellectual, behavioural and affective components to place attachment [23]. Two studies address a distinct construct, cultural inheritance-based innovation, defined as the reconciliation of authentic transmission with creative transformation [24]. In eleven studies (18.3 %) no innovation type could be identified at all: innovation is invoked in the framing but not specified in the design [25].

Table 2. Typology of innovation forms in cultural heritage tourism

Form	Operational content in the corpus	Studies	Share, %
Product / service	Immersive and mobile visitor applications; experiential redesign; new interpretive and service formats	40	66.7
Process	Digitisation of collections; data-driven impact assessment; AI-enabled conservation and visitor management	9	15.0
Organisational	Adaptive reuse; quality-management	8	13.3

Form	Operational content in the corpus	Studies	Share, %
	and certification systems; new managerial arrangements		
Institutional	Heritage-status frameworks; collaborative networks; participatory governance of heritage assets	5	8.3
Business model	Value co-creation architectures; new revenue logics; creative-industry configurations	5	8.3
Cultural-inheritance or radical	Authentic production and creative transformation; radical innovation in heritage clusters	4	6.7
Marketing	Destination brand experience; place branding of heritage assets	2	3.3
Social	Community co-creation of heritage content and services	2	3.3
Not specified	Innovation invoked in the framing but absent from the research design	11	18.3

Source: authors' coding. Multiple codes per study are possible; totals exceed 60.

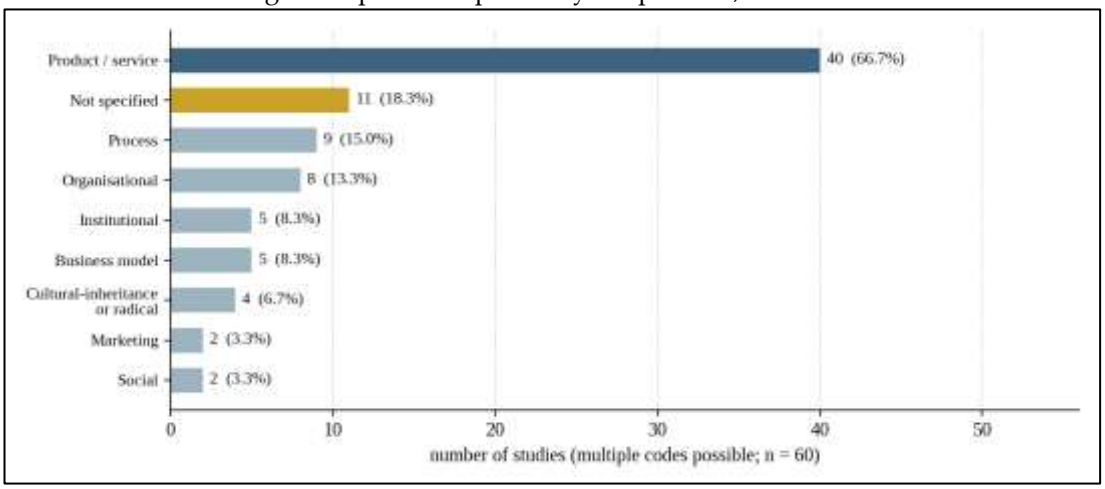


Figure 2. Distribution of innovation forms across the reviewed corpus

3.2. The technological base

Technology-based innovation is examined in 33 studies (55.0 %); the remaining 27 address organisational, experiential or institutional innovation without a digital component (Figure 3). Within the technological subset, augmented reality is the most frequent application (20 studies), followed by virtual reality (16), user-generated content and social media platforms (10), mobile applications (9) and artificial intelligence (8). Emerging technologies appear only marginally: extended reality and the metaverse (2), digital twins (1) and blockchain (1) are each confined to conceptual or architectural contributions [26]. Simpler and cheaper solutions receive comparatively little attention, although a joint QR-code project at two European palaces shows that low-cost

information systems can be combined with new tour routes [27], and user-generated content has been used to reconstruct technology-mediated experiences at war heritage sites [28].

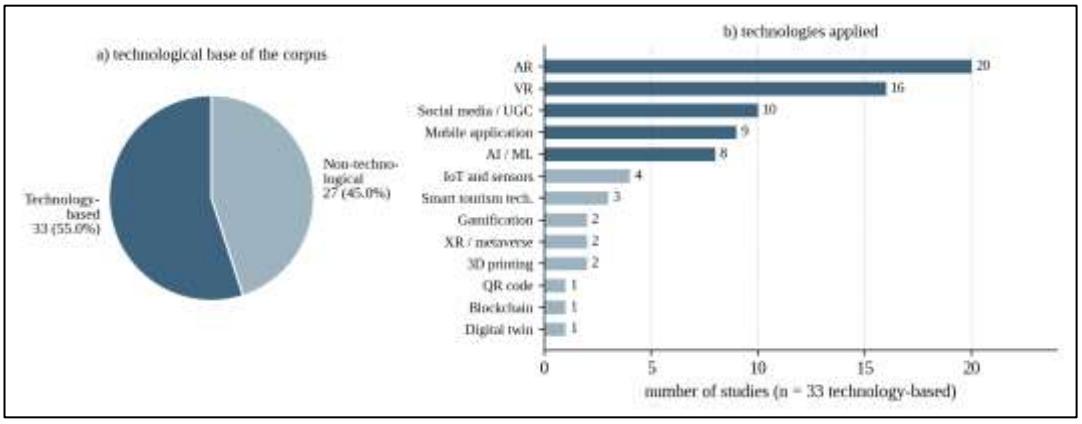


Figure 3. Technological base of the corpus and frequency of applied technologies

The effects reported for these technologies are consistently positive but almost exclusively perceptual. Aesthetic design quality is the strongest antecedent of enjoyment in a cross-cultural study of mobile augmented reality at Deoksugung Palace and the An Post Museum ($\beta = 0.649$), with enjoyment in turn driving behavioural intention ($\beta = 0.319$) [29]. In a museum setting, accessibility ($\beta = 0.393$) and interactivity ($\beta = 0.292$) are the strongest drivers of the smart-technology-enhanced experience, which explains 58.8 % of the variance in tourist satisfaction [30]. An extended acceptance model applied at the Liangzhu site reports performance expectancy (0.160), hedonic motivation (0.210) and habit (0.126) as the significant determinants of intention to use augmented and virtual reality [31]. Non-immersive virtual reality produces a strong path from object-based to existential authenticity ($\beta = 0.736$) in a sample of 2,085 respondents [32], and atmospheric design in non-digital settings explains 76.2 % of the variance in revisit intention [33]. A recent study of 200 World Heritage properties integrating the technology-organisation-environment framework with service-dominant logic explains 59 % of the variance in tourist experience quality [34]. In none of these cases is a revenue, cost or employment consequence estimated.

3.3. Theoretical foundations

A named theory is applied in 24 studies (40.0 %). In the remaining 36, either an author-developed framework is constructed for the specific study (17) or no conceptual framework is identified at all (19) [35]. Where theory is applied, it clusters around individual-level explanations: service-dominant logic and value co-creation (6), stimulus-organism-response (3), the technology acceptance model (3), the unified theory of acceptance and use of technology (2), self-determination and flow theory (2) and the experience economy (3). Organisational and systemic perspectives are rare: institutional and innovation-systems approaches appear five times [36], social capital and cluster theory four times [37] diffusion of innovation twice [38] and the technology-organisation-environment framework once [39]. Table 3 summarises the distribution.

Table 3. Theoretical frameworks applied in the corpus

Framework	Analytical level	Studies	Share, %
No conceptual framework identified	-	19	31.7
Author-developed framework	Mixed	17	28.3
Service-dominant logic / value co-creation	Dyadic	6	10.0
Institutional and innovation-systems approaches	System	5	8.3
Social capital and cluster theory	Organisational	4	6.7
Stimulus-organism-response	Individual	3	5.0
Technology acceptance model	Individual	3	5.0
Experience economy	Individual	3	5.0
Unified theory of acceptance and use of technology	Individual	2	3.3
Self-determination and flow theory	Individual	2	3.3
Diffusion of innovation	Organisational	2	3.3
Stakeholder theory; technology-organisation-environment	Organisational	2	3.3

Source: authors' coding. A study applying two frameworks is counted in both rows.

3.4. Research designs

Qualitative case studies and interview-based designs are the most frequent approach (21 studies), followed by reviews and conceptual papers (15), survey research analysed through structural equation modelling (12) and other survey designs (12). Econometric and secondary-data analyses account for eight studies, textual and sentiment analysis of user-generated content for four, and experimental or quasi-experimental designs for only three [40]. Sample sizes vary by three orders of magnitude, from 14 participants in an observational study of immersive applications [41] to 22,920 online reviews [42] and 12,592 reviews of 58 attractions in a single city [43]. The scarcity of experimental designs matters: causal attribution requires either a control condition or a before-and-after comparison, and only three studies provide one.

Table 4. Research designs and illustrative samples

Design	Studies	Share, %	Illustrative samples in the corpus
Qualitative case study / interviews	21	35.0	24 stakeholders in a small UK museum; 25 informants in Alentejo; four East Asian sites
Review or conceptual paper	15	25.0	25 smart-technology best practices; PRISMA review of AI applications
Survey with	12	20.0	2,085 respondents (virtual tour); 538 (AR/VR

Design	Studies	Share, %	Illustrative samples in the corpus
structural equation modelling			acceptance); 504 (rejuvenation experience)
Survey with other analysis	12	20.0	486 museum visitors; 446 heritage-site visitors; 195 visitors at six attractions
Econometric or secondary-data analysis	8	13.3	237 NUTS-2 regions; 103 Italian regions; 129 countries
Textual or sentiment analysis of reviews	4	6.7	22,920 reviews; 12,592 reviews of 58 attractions; 1,747 reviews
Experimental or quasi-experimental	3	5.0	275 respondents (pre-post AR); 120 participants (traditional vs immersive exhibits)

Source: authors' coding. Studies combining designs are counted in each relevant row.

3.5. Measured outcomes and the experience-economics gap

Visitor experience is the most frequently measured outcome, recorded in 34 studies (56.7 %), followed by satisfaction (22; 36.7 %) and behavioural or revisit intention (21; 35.0 %) [44]. Economic outcomes are markedly less common: visitor numbers are measured in 19 studies (31.7 %), revenue or economic value in 15 (25.0 %) and employment in 7 (11.7 %). Willingness to pay, the variable that connects experiential improvement to revenue, is measured in only five studies (8.3 %) [45].

Cross-tabulating outcome coverage against the technological base reveals that this imbalance is not evenly distributed (Table 5, Figure 4). Technology-based studies measure visitor experience in 81.8 % of cases and behavioural intention in 57.6 %, against 40.7 and 18.5 % respectively for non-technological studies [46]. The pattern reverses for economic outcomes: technology-based studies measure revenue in 18.2 % and employment in 6.1 % of cases, whereas non-technological studies - typically concerned with adaptive reuse, institutional arrangements or regional competitiveness - do so in 25.9 and 18.5 %. The subset of the field that is expanding fastest is thus the subset least likely to produce economic evidence [47].

Table 5. Outcome coverage by technological base of the innovation studied

Measured outcome	Technology-based (n = 33)	Non-technological (n = 27)	Difference, p.p.
Visitor experience	27 (81.8%)	11 (40.7%)	+41.1
Behavioural or revisit intention	19 (57.6%)	5 (18.5%)	+39.1
Satisfaction	14 (42.4%)	8 (29.6%)	+12.8
Visitor numbers or arrivals	9 (27.3%)	9 (33.3%)	−6.0
Revenue or economic value	6 (18.2%)	7 (25.9%)	−7.7

Measured outcome	Technology-based (n = 33)	Non-technological (n = 27)	Difference, p.p.
Employment	2 (6.1%)	5 (18.5%)	−12.4

Source: authors' coding. Percentages are calculated within each subgroup; p.p. - percentage points.

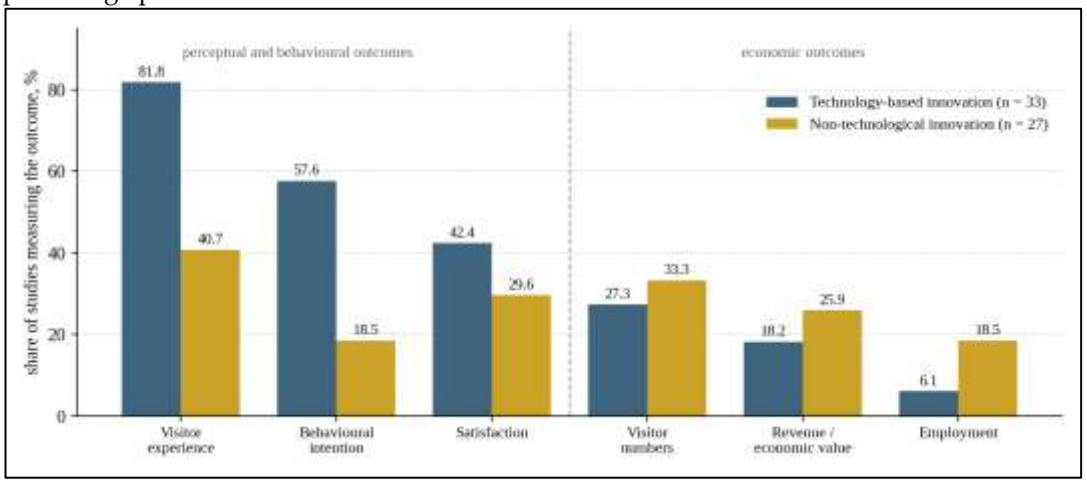


Figure 4. The experience-economics gap: outcome coverage by technological base

The gap widens further when the requirement is tightened from measuring an economic outcome to reporting a figure attributable to an innovation. Only two studies (3.3 %) do so [48]. One reports usage metrics for an internet-of-things communication channel in a Spanish smart destination - 15 deployed points of interest, more than 400 users in the first fifteen days and 5,051 content views by May 2019 [49]. The other estimates the total economic value of heritage assets at €211.4 million for Gubbio and a net present value of €110.7 million for the Palace of Knossos, together with a loss of 14,808 visitors and €1.67 million in revenue attributable to a single seismic event [50]; the latter is an impact-modelling exercise rather than an innovation study. Elsewhere, economic magnitudes appear as destination context rather than as innovation effects - 2.97 million arrivals and 15.3 million overnight stays in a Croatian region hosting adaptive-reuse projects [51], or growth from 160,000 to more than four million visitors at an Asian World Heritage site [52].

3.6. Antecedents and stakeholder configurations

Antecedents of innovation are reported in 53 studies (88.3 %). Technology availability and capability is the most frequently cited enabler (33 studies), followed by organisational resources, skills and absorptive capacity (27), stakeholder collaboration and networks (22), public policy and institutional support (13), competitive and market pressure (12), data availability and analytics (12), community participation (11) and visitor demand (11). The organisational and relational antecedents are supported by the strongest quantitative evidence in the corpus: absorptive capacity strengthens the effect of social capital on firm innovativeness across 238 firms in Peruvian World Heritage cities, whereas technological dynamism weakens it [53], and bridging capital reinforces internal cluster relationships in 215 Spanish firms. Regional evidence agrees: research and development intensity and workforce qualification determine tourism performance across 237 European regions [54].

Table 6. Reported antecedents and stakeholder roles

Antecedent of innovation	Studies	Stakeholder role	Studies
Technology availability and capability	33	Visitors and tourists	41
Organisational resources and	27	Private firms and technology	34

Antecedent of innovation	Studies	Stakeholder role	Studies
capabilities		providers	
Stakeholder collaboration and networks	22	Public authorities	33
Public policy and institutional support	13	Site and museum management	29
Competition and market pressure	12	Local communities and residents	27
Data availability and analytics	12	Universities and research bodies	25
Community participation	11	Destination management organisations	16
Visitor demand and expectations	11	Roles not specified	11
Perceived value and user beliefs	8		
World Heritage status and brand	4		

Source: authors' coding. Multiple codes per study are possible.

Stakeholder configurations are specified in 49 studies (81.7 %). Visitors appear as actors in 41, private firms and technology providers in 34, public authorities in 33 and local communities in 27 [55]. The community role is substantive rather than nominal in a minority of cases: residents co-produce heritage content in a smart-destination project [56], indigenous participation is treated as a condition of the cultural offer in a national-park setting [57], and community willingness and capability are framed as preconditions of innovation in a waterfront heritage community [58]. Elsewhere the community is present as a beneficiary rather than as a decision-maker. Where perceptions of the same technology are compared across stakeholder groups, institutional actors, entrepreneurs, visitors and residents are found to value it differently, which is itself an argument for multi-actor evaluation designs [59].

3.7. The operationalisation of innovation

The most consequential finding concerns the dependent variable itself. Innovation is operationalised as a measurable construct in only 11 studies (18.3 %), and the instruments used differ so substantially that cumulative knowledge is precluded (Table 7). Three approaches can be distinguished. The first measures innovation as a perceptual construct on a Likert scale, as in a study of 446 visitors in which innovation in cultural heritage tourism is predicted by facility capacity (0.360) and pricing management (0.346) [60]. The second measures innovation indirectly through technology attributes: five smart-technology dimensions with three items each, four attributes of smart tourism technology, or a three-item personal innovativeness scale embedded in an acceptance model. The third measures innovation as an input or deployment intensity: research and development expenditure as a share of regional gross domestic product, or a five-item deployment index of artificial-intelligence conservation applications scored between zero and one across 200 sites. Only one study develops and validates a dedicated instrument for heritage-tourism innovation: a thirteen-item scale of cultural inheritance-based innovation covering authentic production, creative dissemination, living display and transforming creation.

Table 7. Studies operationalising innovation as a measurable construct (n = 11)

Operationalisation approach	Instrument reported	Studies
Perceptual construct	Five-point Likert scale of perceived innovation in the destination	1 study, 446 respondents
Validated dedicated scale	Thirteen-item cultural inheritance-based innovation scale, four dimensions	1 study
Technology-attribute proxy	Five smart-technology dimensions, three items each; four smart-tourism attributes; three-item personal innovativeness scale	3 studies
Input or intensity indicator	R&D expenditure as a share of regional GDP; workforce qualification; five-item AI deployment index (0-1)	2 studies
Binary or comparative operationalisation	Traditional versus immersive exhibit; with versus without AR application; QR-code satisfaction module	4 studies

Source: authors' coding. The remaining 49 studies do not operationalise innovation as a variable.

4. Discussion

4.1. A field that studies innovation without measuring it

The central paradox documented here is that a literature explicitly organised around innovation measures innovation in fewer than one study in five. In the remaining studies innovation functions as a framing device: a technology is introduced, its perceptual effects are estimated, and the result is interpreted as evidence about innovation. This is defensible for acceptance research, whose object is the user rather than the innovation, but it becomes problematic once conclusions are drawn about managerial or policy choices. Without an instrument that distinguishes degrees or types of innovativeness, it is impossible to establish whether observed effects derive from the innovation or from the novelty of the setting, and impossible to compare across sites. The validated thirteen-item instrument and the deployment-intensity index indicate that the problem is tractable; their isolation indicates that it has not yet been treated as a priority.

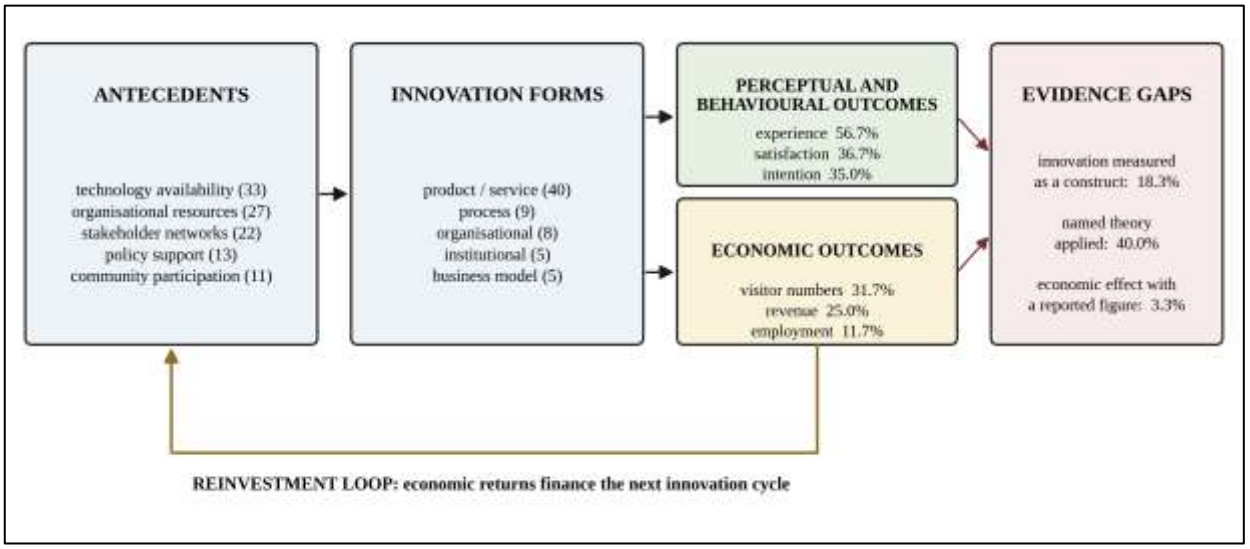
4.2. The experience-economics gap

The second finding is more consequential for practice. Technology-based studies measure experiential outcomes four to five times more often than employment outcomes, and only two studies in the entire corpus report an economic figure attributable to an innovation. The asymmetry is not a matter of research taste. Heritage sites are financed through public budgets, admission revenue, philanthropy and, increasingly, concession and partnership arrangements; each of these mechanisms requires an estimate of return. A finding that an augmented-reality application raises perceived enjoyment does not, in itself, justify its capital cost. The missing link is willingness to pay, measured in only five studies, and the missing method is the controlled comparison, present in only three. Studies that do estimate economic value do so outside the innovation literature, using visitor forecasts and expenditure modelling or aggregate arrival and receipt data.

The gap also has a directional consequence. Because immersive technology attracts research attention while economic evidence accumulates in the non-technological

literature on adaptive reuse and regional competitiveness, practitioners face a divided evidence base: strong perceptual evidence for interventions whose financial return is unknown, and weaker but economically framed evidence for interventions whose experiential effect is under-documented. Figure 5 therefore proposes an integrative framework in which antecedents feed innovation forms, innovation forms produce a two-layer outcome structure, and economic returns close the loop by financing the next cycle - the element least represented in the reviewed evidence.

Figure 5. Integrative framework of innovation in cultural heritage tourism and the located evidence gaps



4.3. Theoretical fragmentation and geographical concentration

Three fifths of the corpus proceeds without an established theory, and the theories that are applied are predominantly individual-level acceptance and experience models. Organisational and systemic accounts - social capital and clusters, regional innovation systems, institutional frameworks, diffusion of innovation - are marginal, despite being the theories capable of explaining why comparable sites adopt at different rates. Geographical concentration compounds the problem: Europe (36.7 %) and the Asia-Pacific region (25.0 %) supply most of the evidence, whereas the Americas, the Middle East and Africa together account for three studies. Transition and emerging economies, where heritage density is high and public funding constrained, are almost absent, so the boundary conditions of the findings remain untested.

4.4. Research agenda

Five priorities follow. First, innovation should be measured, using either validated scales or deployment-intensity indices , so that effects can be attributed and compared. Second, economic outcomes should be added to experiential designs: willingness to pay, average spend per visitor, admission revenue and cost per visitor are obtainable at site level and convert perceptual findings into decision-relevant estimates. Third, controlled and longitudinal designs should be prioritised, since the three quasi-experimental studies in the corpus demonstrate their feasibility. Fourth, organisational and institutional theories should be applied alongside acceptance models, so that adoption is explained as well as accepted. Fifth, the evidence base should be extended geographically, with particular attention to destinations where heritage assets are abundant and investment capacity is limited.

5. Conclusions

This review mapped sixty studies of innovation in cultural heritage tourism published between 2005 and 2026 across eight analytical dimensions. Four conclusions follow. First, the field is dominated by product and service innovation (66.7 % of studies) and increasingly by immersive technology, with augmented and virtual reality together accounting for 36 technology codes. Process, organisational, institutional and business-model innovation remain comparatively under-researched, although they are the forms

most directly connected to how heritage assets are financed and governed. Second, the field measures innovation rarely and inconsistently. Only 11 studies (18.3 %) operationalise innovation as a construct, and they use five different approaches; a single validated instrument specific to heritage tourism exists. Only 40.0 % of studies apply a named theory, and applied theory is concentrated at the individual level. Third, an experience-economics gap runs through the evidence base. Technology-based studies measure visitor experience in 81.8 % of cases but revenue in 18.2 % and employment in 6.1 %; across the whole corpus, only two studies report an economic figure attributable to an innovation. Claims that innovation improves the economic performance of heritage sites are therefore supported by inference rather than by measurement. Fourth, closing this gap does not require new methods. Willingness to pay, admission revenue, visitor spend and cost per visitor are routinely collected at site level, and the quasi-experimental designs already present in the corpus provide a template for attribution. Adding these variables to the experiential designs that now dominate the field would convert a well-developed body of perceptual evidence into a basis for the investment decisions that heritage managers, public authorities and private partners are asked to make.

REFERENCES

[1] Z. Bacsi and E. Toth, "World Heritage Sites as soft tourism destinations—Their impacts on international arrivals and tourism receipts," *Bulletin of Geography: Socio-Economic Series*, 2019, doi: 10.2478/bog-2019-0022.

[2] V. Muštra, B. Škrabić Perić, and S. Pivčević, "Cultural heritage sites, tourism and regional economic resilience," *Papers in Regional Science*, 2023, doi: 10.1111/pirs.12731.

[3] N. Gooroochurn and G. Sugiyarto, "Competitiveness indicators in the travel and tourism industry," *Tourism Economics*, 2005, doi: 10.5367/0000000053297130.

[4] M. Cracolici, P. Nijkamp, and P. Rietveld, "Assessment of tourism competitiveness by analysing destination efficiency," *Tourism Economics*, 2008, doi: 10.5367/000000008784460427.

[5] J. Romão and P. Nijkamp, "Impacts of innovation, productivity and specialization on tourism competitiveness—A spatial econometric analysis on European regions," *Current Issues in Tourism*, 2019, doi: 10.1080/13683500.2017.1366434.

[6] Á. Martínez-Pérez, D. Elche, P. M. García-Villaverde, and G. Parra-Requena, "Cultural tourism clusters: Social capital, relations with institutions, and radical innovation," *Journal of Travel Research*, 2018, doi: 10.1177/0047287518778147.

[7] B. McKenna, W. Cai, and T. Tuunanen, "Transforming to a sustainable visitor economy with information systems," *Information Systems Journal*, 2024, doi: 10.1111/isj.12573.

[8] E. Michopoulou and N. Pappas, "Technology-enabled competitiveness and experiences in tourism: A transformative era," *International Journal of Tourism Research*, 2025, doi: 10.1002/jtr.70025.

[9] A. Augello, I. Infantino, G. Pilato, and G. Vitale, "Site experience enhancement and perspective in cultural heritage fruition—A survey on new technologies and methodologies based on a 'Four-Pillars' approach," *Future Internet*, 2021, doi: 10.3390/FI13040092.

[10] M. S. Anwar, J. Yang, J. Frnda, A. Choi, N. Baghaei, and M. Ali, "Metaverse and XR for cultural heritage education: Applications, standards, architecture, and technological insights for enhanced immersive experience," *Virtual Reality*, 2025, doi: 10.1007/s10055-025-01126-z.

[11] J. Sánchez-Martín, R. Guillén-Peñafiel, and A. Hernández-Carretero, "Artificial intelligence in heritage tourism: Innovation, accessibility, and sustainability in the digital age," *Heritage*, 2025, doi: 10.3390/heritage8100428.

[12] A. Pentescu, "Cultural heritage and new technologies: Exploring opportunities for cultural heritage sites from Gen Z's perspective," *Studies in Business and Economics*, 2023, doi: 10.2478/sbe-2023-0056.

[13] M. T. tom Dieck and T. Jung, "Value of augmented reality at cultural heritage sites: A stakeholder approach," *Journal of Destination Marketing & Management*, 2017, doi: 10.1016/J.JDMM.2017.03.002.

[14] M. Trunfio, M. De Lucia, S. Campana, and A. Magnelli, "Innovating the cultural heritage museum service model through virtual reality and augmented reality: The effects on the overall visitor experience and satisfaction," *Journal of Heritage Tourism*, 2021, doi: 10.1080/1743873X.2020.1850742.

[15] N. Chung, H. Lee, J. Kim, and C. Koo, "The role of augmented reality for experience-influenced environments: The case of cultural heritage tourism in Korea," *Journal of Travel Research*, 2018, doi: 10.1177/0047287517708255.

[16] T. Jung and M. T. tom Dieck, "Augmented reality, virtual reality and 3D printing for the co-creation of value for the visitor experience at cultural heritage places," *Journal of Place Management and Development*, 2017, doi: 10.1108/JPMD-07-2016-0045.

[17] M. Atzeni, G. Del Chiappa, and J. M. Pung, "Enhancing visit intention in heritage tourism: The role of object-based and existential authenticity in non-immersive virtual reality heritage experiences," *International Journal of Tourism Research*, 2021, doi: 10.1002/jtr.2497.
[18] S. Jiang, B. Moyle, R. Yung, L. Tao, and N. Scott, "Augmented reality and the enhancement of memorable tourism experiences at heritage sites," *Current Issues in Tourism*, 2022, doi: 10.1080/13683500.2022.2026303.
[19] I. Pinto and A. Huertas, "A comparative study of VR and AR heritage applications on visitor emotional experiences: A case study from a peripheral Spanish destination," *Virtual Reality*, 2025, doi: 10.1007/s10055-025-01109-0.
[20] T. Jung, H. Lee, N. Chung, and M. T. tom Dieck, "Cross-cultural differences in adopting mobile augmented reality at cultural heritage tourism sites," *International Journal of Contemporary Hospitality Management*, 2018, doi: 10.1108/IJCHM-02-2017-0084.
[21] B. Lee, "The effect of gamification on psychological and behavioral outcomes: Implications for cruise tourism destinations," *Sustainability*, 2019, doi: 10.3390/SU11113002.
[22] P. Buonincontri and A. Marasco, "Enhancing cultural heritage experiences with smart technologies: An integrated experiential framework," *European Journal of Tourism Research*, 2017, doi: 10.54055/ejtr.v17i.295.
[23] J. Balakrishnan, Y. K. Dwivedi, F. Malik, and A. Baabdullah, "Role of smart tourism technology in heritage tourism development," *Journal of Sustainable Tourism*, 2021, doi: 10.1080/09669582.2021.1995398.
[24] Y. Zhang, M. Sotiriadis, and S. Shen, "Investigating the impact of smart tourism technologies on tourists' experiences," *Sustainability*, 2022, doi: 10.3390/su14053048.
[25] M. Bonn, S. Joseph-Mathews, M. Dai, S. Hayes, and J. Cave, "Heritage/cultural attraction atmospherics: Creating the right environment for the heritage/cultural visitor," *Journal of Travel Research*, 2007, doi: 10.1177/0047287506295947.
[26] G. Bagnall, "Performance and performativity at heritage sites," *Museum and Society*, 2015, doi: 10.29311/MAS.V1I2.17.
[27] J. Kempiak, L. Hollywood, P. Bolan, and U. McMahon-Beattie, "The heritage tourist: An understanding of the visitor experience at heritage attractions," *International Journal of Heritage Studies*, 2017, doi: 10.1080/13527258.2016.1277776.
[28] Q. Zhou and Y. Pu, "Impact of cultural heritage rejuvenation experience quality on perceived value, destination affective attachment, and revisiting intention: Evidence from China," *Asia Pacific Journal of Tourism Research*, 2022, doi: 10.1080/10941665.2022.2046619.
[29] M. M. Alazaizeh, M. M. Jamaliah, J. Mgonja, and A. Ababneh, "Tour guide performance and sustainable visitor behavior at cultural heritage sites," *Journal of Sustainable Tourism*, 2019, doi: 10.1080/09669582.2019.1658766.
[30] D. Ross and G. Saxena, "Participative co-creation of archaeological heritage: Case insights on creative tourism in Alentejo, Portugal," *Annals of Tourism Research*, 2019, doi: 10.1016/j.annals.2019.102790.
[31] T. Kalvet, M. Olesk, M. Tiits, and J. Raun, "Innovative tools for tourism and cultural tourism impact assessment," *Sustainability*, 2020, doi: 10.3390/su12187470.
[32] T. Navarrete, "Digital heritage tourism: Innovations in museums," *World Leisure Journal*, 2019, doi: 10.1080/16078055.2019.1639920.
[33] Y. Long, D. Pimchangthong, and K. Li, "AI-enabled factors influencing cultural heritage conservation and tourism development towards tourist experience quality," *Future Technology*, 2026, doi: 10.55670/fpll.futech.5.1.14.
[34] K. Y. Chong and A. S. Balasingam, "Tourism sustainability: Economic benefits and strategies for preservation and conservation of heritage sites in Southeast Asia," *Tourism Review*, 2019, doi: 10.1108/TR-11-2017-0182.
[35] E. Rudan, "Circular economy of cultural heritage—Possibility to create a new tourism product through adaptive reuse," *Journal of Risk and Financial Management*, 2023, doi: 10.3390/jrfm16030196.
[36] F. Carbone, "An insight into cultural heritage management of tourism destinations," *European Journal of Tourism Research*, 2016, doi: 10.54055/ejtr.v14i.244.
[37] S. H. Cassel and A. Pashkevich, "World heritage and tourism innovation: Institutional frameworks and local adaptation," *European Planning Studies*, 2014, doi: 10.1080/09654313.2013.784605.
[38] W. K. B. Ng, F.-T. Hsu, C.-F. Chao, and C.-L. Chen, "Sustainable competitive advantage of cultural heritage sites: Three destinations in East Asia," *Sustainability*, 2023, doi: 10.3390/su15118593.
[39] D. Bourgeon-Renault, M. Derbaix, E. Jarrier, and C. Petr, "New marketing theories and practices emerging from innovations in the cultural and tourism sectors," *Journal of Marketing Management*, 2023, doi: 10.1080/0267257X.2023.2213964.
[40] X. Chen, T. J. Lee, and S. Hyun, "Visitors' self-expansion and perceived brand authenticity in a cultural heritage tourism destination," *Journal of Vacation Marketing*, 2025, doi: 10.1177/13567667241309122.
[41] W. Ruan, M.-Y. Wang, Y.-Q. Li, and S.-N. Zhang, "Configuring creativity: Promoting cultural inheritance-based innovation in heritage tourism destinations," *Journal of Travel Research*, 2025, doi: 10.1177/00472875251322509.
[42] M.-Y. Wang, Y.-Q. Li, W. Ruan, S.-N. Zhang, and R. Li, "Cultural inheritance-based innovation at heritage tourism destinations: Conceptualization, structural dimensions and scale development," *Journal of Hospitality and Tourism Management*, 2023, doi: 10.1016/j.jhtm.2023.03.009.
[43] G. Alexandrakis, C. Manasakis, and N. Kampanis, "Economic and societal impacts on cultural heritage sites,

resulting from natural effects and climate change," *Heritage*, 2019, doi: 10.3390/HERITAGE2010019.

[44] C. M. Hall, T. Baird, M. J. James, and Y. Ram, "Climate change and cultural heritage: Conservation and heritage tourism in the Anthropocene," *Journal of Heritage Tourism*, 2016, doi: 10.1080/1743873X.2015.1082573.

[45] A. M. Domínguez-Quintero, M. González-Rodríguez, and B. Paddison, "The mediating role of experience quality on authenticity and satisfaction in the context of cultural-heritage tourism," *Current Issues in Tourism*, 2018, doi: 10.1080/13683500.2018.1502261.

[46] M. González-Rodríguez, M. Díaz-Fernández, and M. Á. Pino-Mejías, "The impact of virtual reality technology on tourists' experience: A textual data analysis," *Soft Computing*, 2020, doi: 10.1007/s00500-020-04883-y.

[47] M. Simeon, P. Buonincontri, F. Cinquegrani, and A. Martone, "Exploring tourists' cultural experiences in Naples through online reviews," *Journal of Hospitality and Tourism Technology*, 2017, doi: 10.1108/JHTT-10-2016-0067.

[48] A. Zhang and H. Xiao, "Digitalising cultural heritage through online reviews: A sentiment analysis," *Current Issues in Tourism*, 2025, doi: 10.1080/13683500.2025.2566861.

[49] S. S. Imon, "Cultural heritage management under tourism pressure," *Worldwide Hospitality and Tourism Themes*, 2017, doi: 10.1108/WHATT-02-2017-0007.

[50] D. Timothy, "Contemporary cultural heritage and tourism: Development issues and emerging trends," *Public Archaeology*, 2014, doi: 10.1179/1465518714Z.00000000052.

[51] L. Solima and F. Izzo, "QR codes in cultural heritage tourism: New communications technologies and future prospects in Naples and Warsaw," *Journal of Heritage Tourism*, 2017, doi: 10.1080/1743873X.2017.1337776.

[52] J. Alabau-Montoya and M. Ruiz-Molina, "Enhancing visitor experience with war heritage tourism through information and communication technologies: Evidence from Spanish Civil War museums and sites," *Journal of Heritage Tourism*, 2020, doi: 10.1080/1743873X.2019.1692853.

[53] X. Wen, M. Sotiriadis, and S. Shen, "Determining the key drivers for the acceptance and usage of AR and VR in cultural heritage monuments," *Sustainability*, 2023, doi: 10.3390/su15054146.

[54] P. M. García-Villaverde, M. Ruiz-Ortega, A. Hurtado-Palomino, B. De la Gala-Velásquez, and P. Zirena-Bejarano, "Social capital and innovativeness in firms in cultural tourism destinations: Divergent contingent factors," *Journal of Destination Marketing & Management*, 2021, doi: 10.1016/j.jdmm.2020.100529.

[55] A. Garg, D. Dhanjal, K. Chheda, P. Sharma, A. D. Thimmappa, S. Goyal, and A. Garg, "Evolution of immersive technologies and their impact on visitor engagement in cultural heritage sites," *Evolutionary Studies in Imaginative Culture*, 2024, doi: 10.70082/esiculture.vi.1190.

[56] A. Gómez-Oliva, J. Alvarado-Uribe, M. Parra-Meroño, and A. J. Jara, "Transforming communication channels to the co-creation and diffusion of intangible heritage in smart tourism destination: Creation and testing in Ceutí (Spain)," *Sustainability*, 2019, doi: 10.3390/SU11143848.

[57] B. Zeng, "Cultural centre, destination cultural offer and visitor satisfaction," *Sustainability*, 2017, doi: 10.3390/SU9111984.

[58] M. Sakdiyakorn and O. Sivarak, "Innovation management in cultural heritage tourism: Experience from the Amphawa Waterfront Community, Thailand," *Asia Pacific Journal of Tourism Research*, 2016, doi: 10.1080/10941665.2015.1048261.

[59] T. Graziano and D. Privitera, "Cultural heritage, tourist attractiveness and augmented reality: Insights from Italy," *Journal of Heritage Tourism*, 2020, doi: 10.1080/1743873X.2020.1719116.

[60] R. Luekveerawattana, "Enhancing innovation in cultural heritage tourism: Navigating external factors," *Cogent Social Sciences*, 2024, doi: 10.1080/23311886.2024.2301813.