

REVIEW

Mapping Heritage Tourism Knowledge in Contemporary Iran: A Network and Spatial Analysis

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ABSTRACT

Studies on heritage tourism have received much attention in recent years, especially in Iran. This paper presents a comprehensive bibliographic review of Iranian heritage tourism research over the last thirteen years. The study takes advantage of the Geographic Information System (GIS) and VOSviewer bibliometric software to analyze the trend of heritage tourism studies from a geographical and thematic perspective. The results reveal that there is a significant ascending trend in the annual number of published articles on the field of heritage tourism starting from 2019. Moreover, the two provinces of Isfahan and Mazandaran made the greatest contributions to the research. Based on the analytic framework of our literature, 17 macro-categories were derived from the reviewed papers that accord with the development levels of studies on heritage tourism in different provinces. The analytical framework of the studies identifies three dominant orientations: (i) a natural-heritage predominance with a strong emphasis on eco-tourism and geo-tourism; (ii) development-oriented framings centred on growth, branding, and resilience; and (iii) a metropolitan and provincial concentration of study sites, particularly along the Isfahan–Mazandaran provinces. The implications of this study highlight the need for future improvements in the research relating to smart tourism aligned with the heritage context. This paper facilitates the researchers' access to the collection of tourism studies by type and provides valuable insights into its prospects.

Keywords: Heritage Tourism; Iran; VOSviewer; Geographic Information Systems (GIS); Eco-Tourism; Digital Tools

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1. Introduction

Tourism is widely recognised as a complex socio-economic phenomenon encompassing temporary travel for leisure, business, health, and cultural purposes, and involving dynamic interactions between visitors, host communities, environments, and governance structures^[1]. Beyond its economic significance, tourism plays a crucial role in shaping place identities, redistributing resources, and mediating cultural exchange. Within this broad and evolving field, heritage tourism, which draws on both tangible and intangible cultural and natural assets, has emerged as a particularly influential domain of scholarly inquiry, especially in contexts characterised by deep historical continuity and cultural diversity. In Iran, heritage tourism has become a focal point of tourism scholarship due to the country's exceptional concentration of archaeological sites, historic cities, religious landscapes, vernacular architecture, and ecologically distinctive environments^[2, 3]. Iran's numerous UNESCO World Heritage properties, together with its long-standing role in transregional trade, pilgrimage, and cultural exchange, make it an especially fertile context for examining how heritage tourism intersects with questions of identity formation, economic development, environmental stewardship, and technological transformation^[4-6]. As such, Iranian heritage tourism research sits at the crossroads of global debates on sustainability, authenticity, resilience, and digitalisation.

Over the past two decades, a substantial body of tourism research has emerged in Iran, addressing a wide range of themes and tourism typologies. Early studies focused on foundational issues such as ecotourism strategies, rural participation, and tourism planning and governance^[7, 8], as well as consumer behaviour and technological adoption in tourism services^[9]. Subsequent scholarship diversified into more specialised domains, reflecting both national development priorities and international research trends. These include geo-tourism^[10], medical tourism^[11], sport tourism^[12], rural development and community-based tourism^[13], and tourism market dynamics and future scenarios^[14].

Several review studies have sought to synthesise aspects of this expanding literature. For example, some scholars examined tourism and hospitality research in Iran published between 2000 and 2016 to identify dominant research trends and institutional patterns^[15]. Others provided a sys-

tematic review of geo-tourism studies over a fourteen-year period^[10], while other reviews have focused on specific sectors such as medical tourism^[11] or sport tourism^[12]. These contributions have played an important role in consolidating knowledge within individual subfields and highlighting sector-specific challenges and opportunities.

Nevertheless, despite the growing volume and thematic breadth of tourism research in Iran, the overall structure of Iranian heritage tourism scholarship remains insufficiently explored. Existing reviews tend to be fragmented, focusing either on particular tourism typologies or on limited temporal windows. As a result, relatively little attention has been paid to the epistemic architecture of the field, that is, how research agendas are organised, which forms of heritage and which geographical regions dominate scholarly attention, how collaboration networks shape knowledge production, and which themes or places remain marginal within the literature. This gap is particularly striking given the proliferation of individual and case-study-based research in recent years addressing issues such as agritourism, sustainability, rural livelihoods, digital transformation, and crisis impact^[4, 13, 16-19].

The absence of a comprehensive and systematic synthesis is problematic for both scholarship and practice. Without an integrated understanding of how Iranian heritage tourism research has evolved over time, it becomes difficult to assess cumulative knowledge, identify persistent biases, or develop coherent research and policy agendas. In particular, questions remain regarding what kinds of heritage become salient within academic discourse, which places anchor the conversation, and how research conceptualises the relationship between heritage, communities, and markets. These questions are increasingly important in a context marked by climate change, digital transformation, and post-pandemic reconfigurations of tourism systems.

Addressing these gaps, the central aim of this paper is to provide a comprehensive overview of Iranian heritage tourism research over the past decade by examining its thematic composition, spatial distribution, and collaborative structures. The main research question guiding the study is: What are the dominant areas that organise Iranian heritage tourism research, and how do they shape what is studied, by whom, and where? To answer this question, the study employs a mixed-methods approach combining VOSviewer bibliometric mapping and Geographic Information Systems

(GIS) spatial analysis. Drawing on a dataset of 355 peer-reviewed English-language publications, the analysis visualises keyword co-occurrence, author collaboration networks, and the geographical concentration of research activity. By integrating thematic and spatial perspectives, this study offers the first holistic account of the evolution, structure, and imbalances of Iranian heritage tourism scholarship and provides a foundation for more inclusive, resilient, and future-oriented research trajectories.

2. Materials and Methods

This study adopts a systematic bibliometric and spatial analysis approach to investigate research trends, thematic structures, and geographical patterns in tourism studies related to Iran. Given Iran's rich endowment of cultural, historical, and natural tourism assets, including numerous UNESCO World Heritage sites, the country has generated a substantial volume of academic research over the past decade. This growing body of literature provides an appropriate foundation for examining how tourism knowledge has developed, where scholarly attention has been concentrated, and which gaps remain. A systematic literature search was conducted using three major academic databases: Scopus, ScienceDirect, and Google Scholar. The search targeted peer-reviewed journal articles published in English between 2012 and 2025. To

ensure relevance to the national context, the search strategy combined the keyword "tourism" with the country-specific term "Iran". The study focused on English-language publications indexed in international databases in order to assess the global visibility and international dissemination of Iranian tourism research. While the main concern of the study was about excluding the articles in the Farsi language since it is the main language in Iran, and many researchers publish authoritative articles in domestic journals. Thus, a comprehensive systematic review might not be possible to acquire. However, the study's purpose was to assess the trend of Iranian tourism studies on an international scale, so the articles in Farsi could not be considered for a general assessment.

Following the methodological framework proposed by Li and colleagues^[20], only studies published in scholarly journals were included in the analysis. Other sources, such as books, book chapters, reports, conference proceedings, and online materials, were excluded to maintain methodological consistency and comparability. For each selected article, key bibliographic attributes were systematically recorded, including title, year of publication, authorship, journal, keywords, language, and country or territorial focus.

Based on these criteria, a total of 355 journal articles were identified and included in the final dataset. **Table 1** summarises the data sources and selection criteria, adapted from previous studies^[20, 21].

Table 1. Paper selection criteria.

Parameters	Selection Criteria
Data Source	Scopus, science direct, and Google scholar
Searching Period	2012 to 2025
Searching Keywords	"Tourism" AND "Iran"
Document Types	"Journal articles"
Language	"English"
Sample Size	355

Analytical Framework of Iranian Tourism Research

The existing literature on tourism in Iran is characterised by a strong emphasis on specific tourism types, with many studies focusing on individual domains such as eco-tourism, heritage tourism, geo-tourism, medical tourism, or rural tourism. While this typological focus has generated valuable empirical insights, it has also contributed to a

fragmented knowledge base in which connections between tourism forms, spatial contexts, and research communities remain insufficiently explored. In response, the present study adopts an analytical framework designed to systematically map the dominant research focuses within Iranian tourism scholarship, with particular attention to heritage-related tourism.

The primary objective of this analytical framework is to identify and categorise the main tourism types and the-

matic orientations that structure the literature, rather than to evaluate individual study designs or empirical findings in detail. Accordingly, this research concentrates on the classification of tourism research by type and theme, enabling a comparative assessment of the relative prominence, diversity, and evolution of different tourism domains over time. This approach provides a high-level synthesis of the field and establishes a foundation for more fine-grained analyses in future research.

At this stage, the analytical framework does not undertake a systematic evaluation of data characteristics, method-

ological approaches, analytical techniques, or research outcomes within individual studies. Nor does it attempt to synthesise findings related to impacts, performance, or effectiveness across tourism types. Instead, these dimensions are acknowledged as important areas for subsequent investigation. Future research building on this framework may extend the analysis to examine methodological trends, theoretical perspectives, key challenges, and emerging research directions within and across tourism categories. The framework integrates three interrelated analytical dimensions, as illustrated in **Figure 1**.

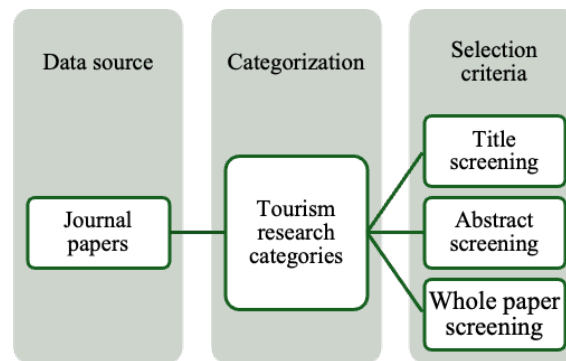


Figure 1. Analytical framework of papers.

Figure 1 presents a schematic representation of this analytical framework, illustrating the sequential and interconnected steps of the literature review process, from data collection and classification to thematic, temporal, and spatial analysis. Together, these components form a coherent structure that supports the systematic examination of tourism research trends in Iran and contributes to a more integrated and reflexive understanding of heritage tourism scholarship. First, a thematic dimension classifies the reviewed literature into macro-categories and micro-types of tourism, allowing for the identification of dominant and marginal research areas. Second, a temporal dimension captures the evolution of tourism research over the study period, highlighting shifts in scholarly attention and the emergence of new tourism forms. Third, a spatial and relational dimension examines the geographical distribution of studies and the structure of research collaboration, drawing on GIS mapping and bibliometric network analysis.

By combining these dimensions, the analytical framework enables a holistic understanding of how Iranian tourism research is organised as a knowledge field. It reveals not only

what types of tourism have been most extensively studied, but also where research activity is concentrated, how scholars collaborate, and which themes and regions remain under-represented. In this sense, the framework moves beyond descriptive listing and provides a structured lens through which the epistemic architecture of Iranian heritage tourism research can be interpreted.

3. Results and Discussion

This study adopted a review approach to examine the evolution, structure, and spatial distribution of tourism research conducted in Iran. An initial search across major academic databases yielded 2434 literature records related to tourism studies. Following the application of predefined inclusion and exclusion criteria, focusing on peer-reviewed English-language journal articles published between 2012 and 2025, a final dataset of 355 publications was retained for detailed bibliometric, descriptive, and spatial analysis. Keyword co-occurrence analysis was conducted using VOSviewer to identify thematic clusters within the

dataset. These clusters were subsequently interpreted and synthesised into 17 higher-order macro-categories to support a more coherent thematic discussion. The results of this analysis are presented and discussed in the following subsections.

3.1. Descriptive Statistical Analysis

Descriptive statistical analysis was employed to provide an overview of the temporal growth, publication outlets, geographical focus, and general characteristics of tourism research in Iran. This step establishes a baseline understanding of how the field has developed over time and where scholarly attention has been concentrated.

3.1.1. Overall Growth

Figure 2 illustrates the annual distribution of tourism-related publications in Iran from 2012 to 2025. The results

indicate a non-linear but overall upward trajectory in publication output. During the early phase of the study period (2012–2019), the number of published articles remained relatively low and exhibited a generally declining trend, showing that tourism research, particularly in its more specialised forms, was still an emerging area of scholarly interest in Iran. The number of publications recorded for 2020 appears comparatively low (16 articles), which coincides with the COVID-19 pandemic that had profound impacts on the global tourism industry and stimulated extensive academic debate on crisis management, resilience, sustainability, and recovery strategies. From 2021 onwards, however, a notable shift can be observed. Publication numbers began to rise steadily, culminating in a pronounced peak in 2025 with 56 published articles, the highest annual output recorded in the dataset. These trends suggest that tourism scholarship in Iran has entered a phase of accelerated growth and consolidation, with increasing academic recognition and relevance.

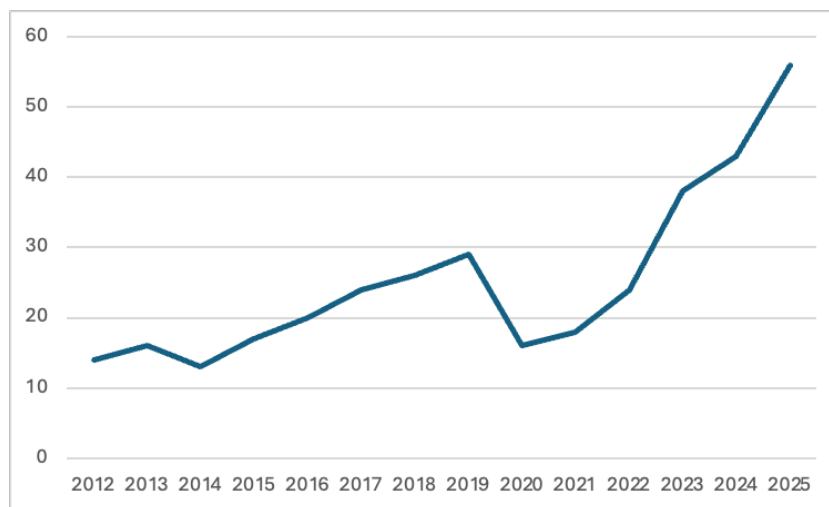


Figure 2. Distribution of studies over years.

3.1.2. Publication Sources

Figure 3 presents the distribution of articles across the most frequently used academic journals. In line with the study's selection criteria, only peer-reviewed journal articles were included; conference papers, books, book chapters, and reports were excluded from the analysis. The results reveal a highly diversified publication landscape, with tourism research on Iran appearing across 170 different journals, reflecting the interdisciplinary nature of the field and its relevance to tourism studies, geography, heritage, sustainability,

and social sciences. Despite this dispersion, a small group of journals emerges as particularly influential publication outlets. The most prolific journal is *Tourism Management Perspectives* (16 publications), followed by *GeoJournal of Tourism and Geosites* (11), *Current Issues in Tourism* (11), *Journal of Heritage Tourism* (10), *Geoheritage* (10), *Tourism Management* (10), and *Anatolia* (10). The prominence of these journals indicates that Iranian tourism research is increasingly visible within internationally recognised tourism and heritage-focused outlets, rather than being confined to

regional or peripheral journals. At the same time, the large number of journals with only one or two publications suggests a fragmented dissemination pattern, where research outputs are spread across a wide range of venues. While this

diversity enhances visibility across disciplines, it may also limit the formation of cumulative scholarly debates unless stronger thematic integration and cross-referencing emerge over time.

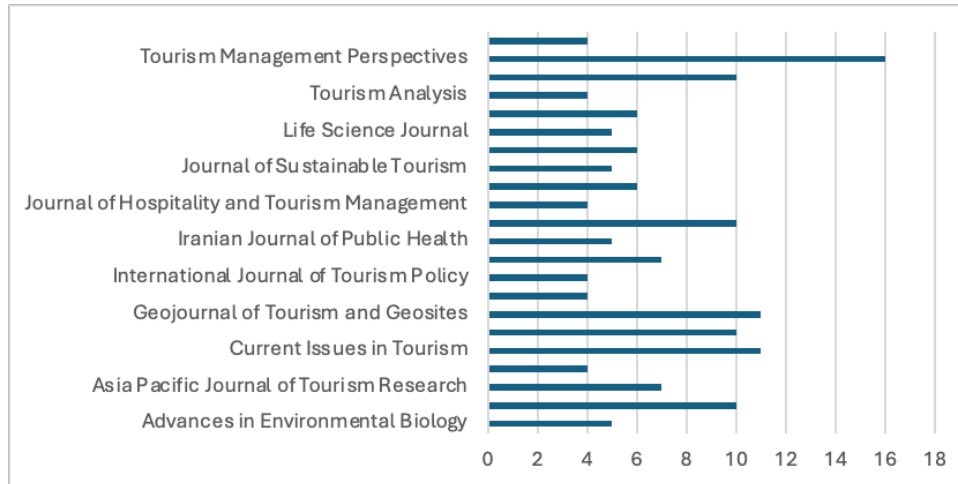


Figure 3. Distribution of the most frequented Journals.

3.2. Spatial and Bibliometric Patterns of Research

Beyond temporal growth and publication outlets, the study examined the geographical distribution and relational structure of tourism research in Iran through an integrated spatial–bibliometric approach. Following the methodology proposed by scholars^[10], each article was geocoded according to its primary study location and mapped at the provincial level using Geographic Information Systems (GIS). Spatial analysis was conducted in QGIS, enabling the visualisation of research density across provinces and revealing both areas of concentrated scholarly attention and regions that remain under-researched.

The GIS-based results indicate pronounced spatial concentrations of tourism research in a limited number of provinces, particularly those characterised by well-established tourism infrastructures, iconic heritage assets, or recognised natural attractions. Provinces such as Isfahan, Mazandaran, Fars, East Azerbaijan, and Guilan emerge as dominant research hubs. In contrast, peripheral and structurally vulnerable regions, especially coastal, island, desert, and border provinces, remain marginal within the academic literature. This uneven distribution reflects not only differences in tourism development but also institutional geogra-

phies, including the clustering of major universities, research centres, and funding opportunities in central and northern regions. Such spatial imbalances have significant epistemic implications. When a limited number of regions repeatedly serve as case-study anchors, the theories, models, and policy recommendations generated may lack transferability to contexts with distinct socio-environmental dynamics, such as islands, arid landscapes, or culturally marginalised regions. Consequently, spatial bias in research production risks reinforcing partial understandings of Iran’s tourism systems. To complement the spatial analysis, bibliometric mapping was conducted using VOSviewer to examine keyword co-occurrence, author co-authorship, and journal co-citation networks. These analyses provide insight into the conceptual structure of the field, patterns of scholarly collaboration, and the journals that shape agenda-setting within Iranian tourism research. VOSviewer was selected due to its ability to visualise complex bibliometric relationships and its extensive application in tourism and heritage scholarship^[22]. Taken together, the spatial and bibliometric analyses form a relational knowledge map of Iranian tourism research, illustrating how themes, places, and scholarly communities interact. This mixed-methods approach enables a more comprehensive assessment of how tourism research has evolved over time, how it is structured thematically, and how knowledge production

is distributed across space and research networks.

3.2.1. Natural Heritage Predominance: The Power of Geo- and Eco-Tourism

VOSviewer keyword network mapping (**Figure 4**) reveals that “geo-tourism” and “ecotourism” are among the most frequently co-occurring terms, forming dense and highly connected clusters that bridge tourism management, environmental sciences, and spatial planning. Empirical studies focusing on Qeshm Geopark^[23–27], the Anzali Wetland^[28], and the Caspian forest regions^[29–31] dominate the research landscape. This predominance reflects Iran’s rich environmental and geological diversity, as well as alignment with global conservation and sustainability frameworks, including UNESCO Global Geoparks. However, it also reveals a methodological bias within the literature. Geo- and ecotourism studies often rely on quantitative, spatially explicit, and model-driven approaches that are relatively easier to operationalise and publish. In contrast, intangible heritage dimensions, such as rituals, oral traditions, craft knowledge, and everyday cultural practices, remain underexplored due to their qualitative, participatory, and time-intensive research requirements. As a result, scholarly attention tends to gravitate towards what is measurable and mappable, rather than what may be socially, culturally, or politically urgent. This imbalance risks marginalising community-centred perspectives and obscuring the lived experiences through which heritage is produced, contested, and transmitted.

3.2.2. Development-Oriented Framing: Branding, Image, and Resilience

Keyword overlay analysis indicates a strong and persistent emphasis on destination image, branding, competitiveness, and market positioning within Iranian tourism research. Following 2020, this focus expands to include resilience, crisis management, and COVID-19 recovery, reflecting global shifts in tourism scholarship during the pandemic period. While heritage appears frequently within these discussions, it is often framed primarily as an instrument for economic development rather than as a dynamic field of cultural negotiation, identity-making, or social justice. The concept of “smart tourism” in Iranian research is similarly framed in predominantly technocratic terms, emphasising virtual tours, online booking platforms, and digital marketing tools. Although these innovations contribute to efficiency and visi-

bility, they often overlook the potential of digital technologies for co-curation, community empowerment, memory preservation, and climate adaptation. Consequently, innovation risks being equated narrowly with digitisation rather than with transformative governance or participatory practice. **Figure 5** illustrates temporal shifts in keyword usage. Earlier studies focused on terms such as “global tourism” and “Islamic destination”, whereas more recent research increasingly engages with “geo-tourism,” “geo-heritage,” and “cultural heritage site”, reflecting a growing orientation towards sustainability and heritage-based development.

3.2.3. Metropolitan Concentration: The Geography of Knowledge

GIS mapping (**Figure 6**) confirms a strong metropolitan and regional concentration of tourism research in a small number of provinces, particularly Isfahan and Mazandaran. In contrast, provinces such as Hormozgan, Sistan–Baluchestan, and Kohkiluyeh and Boyer-Ahmad are significantly underrepresented. While this pattern partly reflects data availability and institutional capacity, it also reinforces epistemic hierarchies in which central regions define national tourism narratives.

This concentration raises concerns regarding the transferability of dominant models to peripheral contexts. Coastal, island, desert, and border regions face distinct socio-environmental risks, governance challenges, and cultural dynamics that are insufficiently captured by research frameworks developed in metropolitan or heritage-city contexts.

3.2.4. Networked Scholarship: Who Speaks for Heritage Tourism?

Co-authorship analysis (**Figure 7**) identified 767 unique authors, forming a clear core–periphery structure. A small group of highly connected scholars, such as Khodadadi, Farsani, Ghaderi, and Taheri, dominates the central network, while peripheral authors exhibit limited cross-cluster interaction. Although this structure enhances methodological consistency and academic productivity, it also suggests path dependency, whereby emerging scholars replicate established quantitative frameworks to align with dominant publication norms. Notably, collaboration with adjacent fields such as digital humanities, conservation science, and disaster studies remains limited, constraining conceptual innovation and interdisciplinary integration.

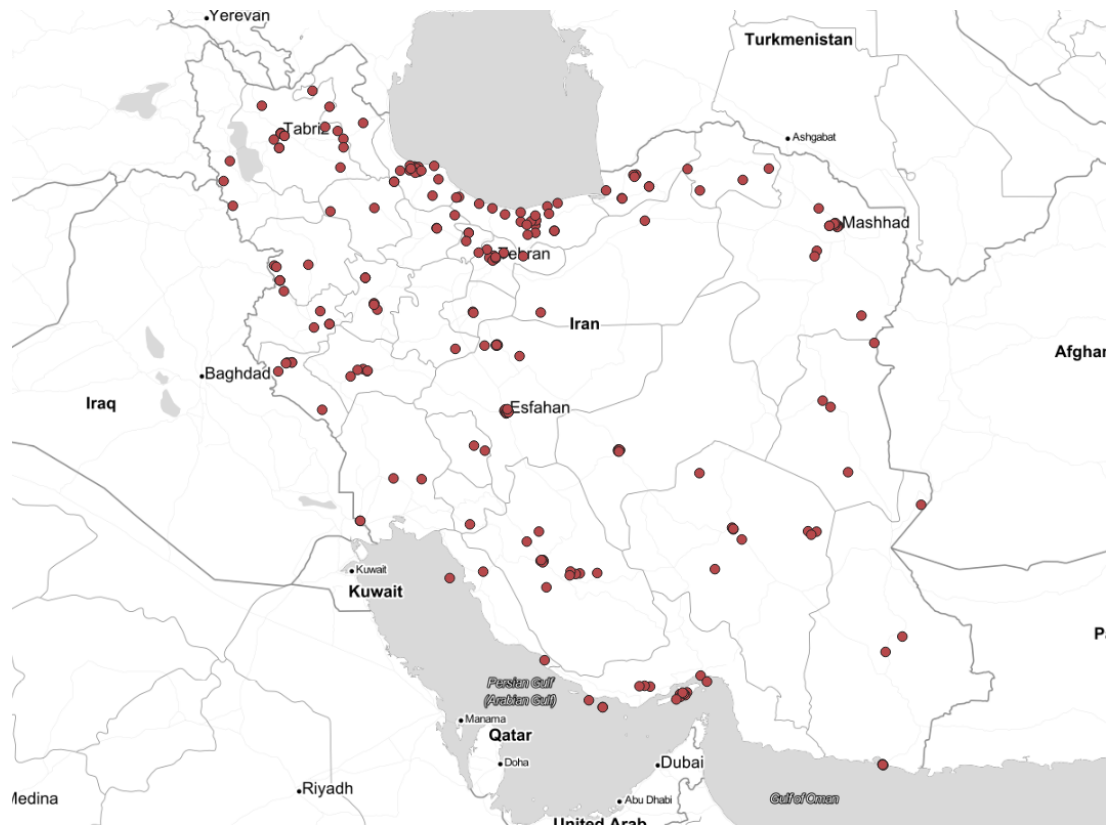


Figure 6. Geographical distribution of reviewed papers.

Note: Digital tool: QGIS, elaborated by the authors.

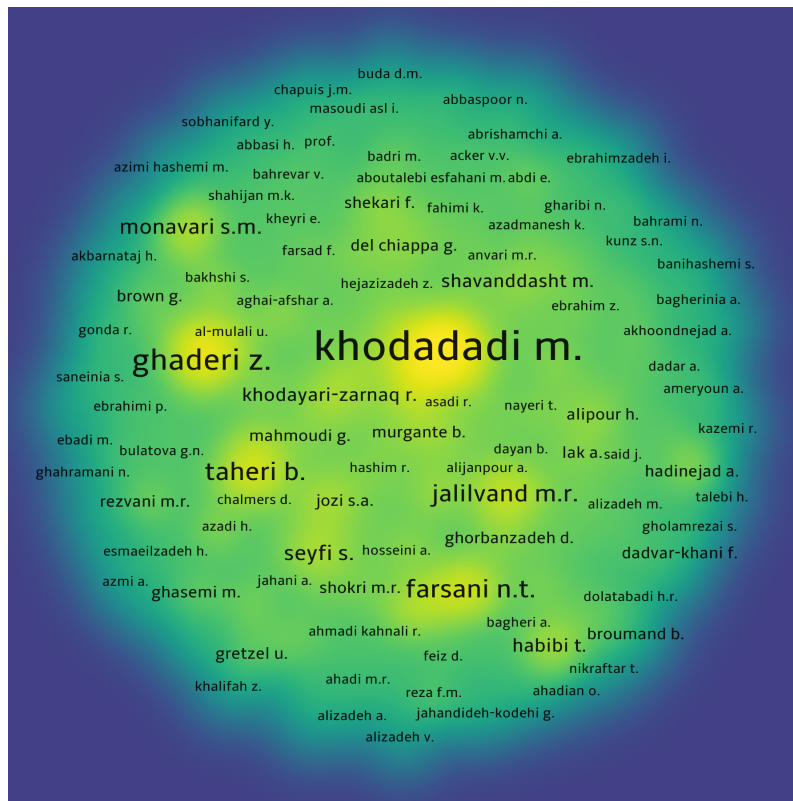


Figure 7. Density visualization of co-authorship analysis.

3.3. Thematic Outcomes of Iranian Tourism Research

The review of 355 English-language academic publications on tourism in Iran published between 2012 and 2025 reveals a broad and multifaceted thematic landscape structured around 17 macro-categories and a wide range of associated micro-types. These categories encompass both long-established domains, such as Eco-Tourism, Heritage Tourism, Geo-Tourism, Rural Tourism, and Medical Tourism, as well as more recently emerging and comparatively under-explored forms, including Smart Tourism, Culinary Tourism, Dark Tourism, and Ethnic and Social Tourism. This diversity reflects the expanding scope of tourism scholarship in Iran and its increasing engagement with global tourism discourses related to sustainability, technology, experience design, and cultural identity.

Despite this apparent breadth, the thematic distribution of the literature is markedly uneven. A small cluster of dominant macro-categories accounts for a disproportionate share of academic output^[32–36]. In particular, Eco-Tourism, Heritage Tourism, Geo-Tourism, and Rural Tourism collectively represent nearly two-thirds of all tourism-related studies conducted in Iran over the study period^[37–40]. This strong concentration underscores the centrality of nature-based and heritage-led paradigms within Iranian tourism research and highlights the country's strategic reliance on environmental, rural, and cultural resources as foundations for tourism development.

Among these macro-categories, eco-tourism emerges as the most prominent, accounting for approximately 20% of all reviewed studies. This dominance reflects both Iran's ecological diversity and the increasing policy and academic emphasis on sustainable development, conservation, and community-based tourism practices. Closely related to this, geo-tourism (8%) reinforces the importance of geological heritage and geoparks in shaping tourism research agendas, particularly in regions such as Qeshm Island and the Caspian hinterland. Together, eco- and geo-tourism foreground the role of natural heritage as a primary lens through which tourism potential, environmental management, and regional development are conceptualised.

Heritage tourism, accounting for around 11% of the reviewed literature, occupies a distinctive and integrative position within the thematic landscape. Unlike eco- or geo-tourism, heritage tourism operates as a conceptual bridge

between culture, nature, identity, and place-making, offering insights into how Iranian tourism research engages with questions of authenticity, memory, modernisation, and cultural resilience. Studies in this category frequently address historic urban fabrics, religious sites, caravanserais, and intangible cultural practices, thereby linking material heritage with social meaning and visitor experience^[37, 38]. This positioning suggests that heritage tourism functions not only as a discrete tourism type but also as a cross-cutting framework connecting multiple dimensions of Iranian tourism scholarship.

In parallel, medical tourism, also representing approximately 11% of publications, reflects Iran's growing visibility in regional healthcare markets and the strategic positioning of health services within broader tourism development agendas. By contrast, general tourism studies, which account for about 17% of the literature, tend to focus on overarching issues such as destination branding, residents' perceptions, service quality, and hospitality management. While these studies contribute to foundational knowledge, they often lack strong spatial or cultural specificity, reinforcing the contrast between generalist research and place-based heritage or nature-oriented studies.

At the opposite end of the spectrum, several tourism types remain marginal within the Iranian research landscape. Categories such as ethnic tourism, social tourism, dark tourism, and culinary tourism are represented by only a small number of studies, indicating significant thematic gaps. The limited attention to these areas suggests missed opportunities for exploring issues of social inclusion, minority representation, contested heritage, and everyday cultural practices. This imbalance highlights the need for future research to move beyond dominant nature- and heritage-based paradigms and to engage more critically with social, experiential, and digitally mediated forms of tourism.

The distribution of the 17 macro-categories (**Table 2**) reveals a research field that is diverse yet structurally concentrated, with a strong emphasis on environmental and heritage assets and comparatively limited exploration of alternative tourism forms. This pattern not only reflects Iran's material tourism resources but also shapes how tourism development is conceptualised, prioritised, and governed. Addressing these thematic imbalances offers a critical pathway for broadening Iranian tourism scholarship and for aligning future research with emerging global challenges related to digital transformation, social equity, and cultural sustainability.

Table 2. Thematic outcomes of tourism research.

Macro-Category	Micro-Types
Smart Tourism Sport Tourism Rural Tourism	E-Tourism Social mediatization Virtual tourism Heritage sport tourism Recreational tourism Bicycle tourism Second-home Tourism Government-supported tourism
Urban and Regional Tourism Heritage Tourism	None Cultural Tourism Nostalgia Tourism Industrial heritage tourism
Geo-Tourism Medical Tourism Religiose Tourism Eco-Tourism	Aerial Geo-Tourism Health tourism Treatment tourism Halal tourism Lake Tourism Coastal Tourism Island-based tourism Forest-based ecotourism Nature-based tourism Wetland tourism Natural tourism Desert tourism Agricultural tourism Farm tourism Outdoor Tourism
Inbound and Outbound Tourism Domestic Tourism	Global Tourism Border tourism International Tourism
Domestic Tourism	Local Tourism Domestic Tourism Unplanned tourism Responsible tourism
Art Tourism	Niche Tourism Archi Tourism
Dark Tourism	Sanctions Iran Nuclear Cruise tourism
Social Tourism	Pro-poor tourism Volunteer tourism
Culinary Tourism	Food Tourism Gastronomy Tourism
Ethnic Tourism	Nomadic Tourism
Other	Tourism destination brand Tourism brand Equity Residents' perception Destination image Slow Tourism Tourism and hospitality Creative Tourism

4. Framing an Integrated Framework for Iranian Heritage Tourism

Building on the findings of this study, this section advances an integrative framework that explicitly addresses the key gaps identified in Iranian heritage tourism research, such as the limited engagement with digital heritage beyond technocratic applications, the marginalisation of climate-adaptive perspectives, and the weak incorporation of participatory governance. This framework functions as a conceptual bridge that connects these underdeveloped dimensions into a coherent analytical model, repositioning heritage tourism in Iran as a dynamic and relational interface between technology, society, and ecology. The combined results of the systematic literature review, bibliometric mapping, and spatial analysis reveal a research field that is both prolific and structurally uneven. Iranian heritage tourism scholarship is thematically dominated by nature-based paradigms, geographically concentrated in metropolitan regions, and conceptually shaped by development-oriented and technocratic framings. These patterns point to the limitations of existing approaches and underscore the need for a paradigmatic shift in how heritage tourism is researched, governed, and operationalised. The predominance of eco-tourism and geo-tourism within Iranian tourism research reflects the country's exceptional environmental and geological assets and its alignment with global sustainability and conservation agendas^[41-45]. However, the keyword and co-citation analyses demonstrate that this dominance has also narrowed the conceptual scope of heritage tourism research. Scholarly attention has tended to privilege forms of heritage that are measurable, mappable, and marketable, often at the expense of those that are socially embedded, historically contingent, and culturally negotiated. As a result, intangible heritage, community memory, and everyday cultural practices remain marginal within the literature, despite their central role in shaping place identity, social cohesion, and long-term resilience.

The proposed framework responds to this imbalance by reconceptualising heritage not merely as an economic or environmental resource, but as a distributed and relational knowledge system composed of material remains, intangible practices, ecological processes, and lived experience. By integrating insights from heritage studies, political ecology, and critical tourism scholarship, the framework bridges the

gap between dominant conservation-oriented paradigms and socially embedded understandings of heritage. This reconceptualisation aligns heritage tourism with broader debates on knowledge co-production, cultural rights, and participatory governance, moving beyond instrumental and extractive models of tourism development. The bibliometric findings further reveal the growing prominence of "smart tourism" and digital technologies in Iranian tourism research, particularly in the post-2020 period. However, digitalisation is predominantly framed in technocratic terms, focusing on virtual tours, online booking systems, and destination marketing. While these applications enhance efficiency and visibility, they rarely engage with questions of power, representation, or community agency. The framework explicitly bridges this gap by repositioning digital heritage as a participatory and reflexive practice rather than a purely technological solution. Drawing on insights from digital heritage and critical tourism studies, the framework foregrounds digital tools such as participatory GIS, augmented and virtual reality (AR/VR), and AI-assisted archival systems as mechanisms for knowledge co-production rather than mere visualisation. When embedded within participatory governance structures, these technologies can support co-curated narratives, facilitate inter-generational knowledge transfer, and amplify marginalised voices. In doing so, the framework directly addresses the technocratic bias identified in both the keyword analysis and the co-authorship network. The spatial analysis adds a further critical dimension by revealing a strong geographical bias in the production of heritage tourism knowledge. Research is heavily concentrated in central and northern provinces, while climatically vulnerable regions, particularly coastal, island, desert, and border areas, remain underrepresented. This spatial imbalance is especially problematic in the context of climate change and disaster risk, which disproportionately affect precisely those marginalised regions.

The framework integrates climate-adaptive heritage management as a core analytical pillar, directly bridging the gap between heritage tourism research and climate resilience studies. Environmental monitoring technologies such as humidity and temperature sensors in historic buildings or erosion and tide monitoring in coastal heritage sites are conceptualised not as standalone technical fixes, but as components of broader governance systems that must be informed by local ecological knowledge, long-standing

adaptive practices, and community-based risk perception. Without this integration, climate adaptation risks reproducing the same technocratic biases observed in digital tourism research. The combined GIS and bibliometric findings further demonstrate that Iranian heritage tourism knowledge is produced within a highly uneven spatial and institutional landscape. Metropolitan centres and established academic networks dominate research output, while peripheral regions and alternative heritage forms remain epistemically marginal. By foregrounding participatory and place-based approaches, the framework offers a corrective to this core-periphery structure, promoting participatory mapping, community-led documentation, and collaborative research partnerships as mechanisms to decentralise expertise and rebalance knowledge production. A final critical gap identified in the literature concerns the role of local communities, which are frequently framed as passive beneficiaries rather than active agents in heritage governance. The integrative framework explicitly bridges this gap by advancing a dialogic and rights-based model of heritage tourism, in which communities are recognised as co-producers of heritage meaning and co-designers of tourism futures. By combining indigenous knowledge systems with digital platforms and transparent governance mechanisms, this approach strengthens social legitimacy, collective decision-making, and adaptive capacity.

5. Conclusions

This study demonstrates a growing academic interest in tourism-related topics, reflected in a pronounced upward trend in annual publications. This growth has been particularly marked since 2016, with publication numbers rising sharply from 20 articles in 2016 to 56 in 2025. Despite this rapid growth, the results show that Iranian tourism research remains at a relatively early stage of conceptual and structural development. Bibliometric mapping and co-authorship analyses reveal a research landscape characterised by thematic concentration and limited diversity. One of the most salient findings is the strong dominance of natural heritage paradigms, particularly geo-tourism and eco-tourism, which together account for a substantial proportion of the literature. While this focus reflects Iran's exceptional geological and ecological assets, it also highlights an imbalance in scholarly attention, with other forms of heritage tourism, most

notably built heritage, urban heritage, and intangible cultural heritage, remaining comparatively underexplored. At the same time, the growing body of research on smart tourism represents an important and promising development within the field. The increased attention to digital tools, data-driven management, and smart systems has clear implications for post-pandemic tourism recovery and resilience strategies. Smart tourism approaches offer opportunities to enhance visitor experiences, improve destination management, and support adaptive responses to crises. However, despite emerging contributions that explore resilience and digital heritage experiences^[45], the literature lacks a comprehensive and theoretically grounded framework that integrates smart tourism with diverse heritage contexts. In particular, the application of resilient smart systems to cultural heritage sites during periods of disruption, such as pandemics, climate-related hazards, or socio-economic shocks, remains insufficiently theorised and empirically tested. Beyond thematic concentration, this study also reveals significant spatial and conceptual imbalances in Iranian heritage tourism research. The clustering of studies around metropolitan and well-established tourism regions limits the visibility of peripheral and rural areas, reinforcing uneven knowledge production and policy attention. Moreover, the prevailing managerial and development-oriented framing of tourism prioritises growth, branding, and competitiveness over community participation, cultural co-curation, and social equity. As a result, the voices of local communities and the potential of participatory and digitally enabled heritage practices remain marginal within the literature. In response to these limitations, this study argues for a digital and participatory transformation of Iranian heritage tourism research and practice. Such a transformation could encourage methodological diversification, promote more balanced regional representation, and bridge the divide between heritage conservation, technological innovation, and social inclusion. By integrating smart and digital tools with community-based approaches and resilience thinking, future research can move beyond Geoheritage dominance towards a more inclusive, adaptive, and future-oriented heritage tourism paradigm. Future research could expand the scope of this analysis by incorporating tourism studies published in Iranian domestic journals and by drawing on additional international databases, enabling a more comprehensive and comparative understanding of heritage tourism scholarship related to Iran.

Author Contributions

Conceptualization, F.A.; methodology, F.A.; software, F.A. and A.A.M.M.; formal analysis, F.A.; investigation, F.A.; resources, F.A. and A.A.M.M.; data curation, F.A.; writing—original draft preparation, F.A.; writing—review and editing, F.A. and A.A.M.M.; visualization, F.A.; supervision, F.A. Both authors have read and agreed to the published version of the manuscript.

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Conflicts of Interest

The authors declare no conflict of interest.

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