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Identification of the Components of an Artificial Intelligence-Based City Branding Model for Attracting Foreign Tourists to Iran's Cultural Destinations

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A B S T R A C T

This study aimed to identify and explain the components of an artificial intelligence-based city branding model for attracting foreign tourists to cultural destinations in Iran. This qualitative study was conducted using the systematic grounded theory approach of Strauss and Corbin. Participants comprised 17 experts in city branding, cultural tourism, destination management, digital marketing, and artificial intelligence who were selected through purposive and snowball sampling. Sampling continued until theoretical saturation was achieved. Data were collected through in-depth semi-structured interviews and analyzed concurrently with data collection using open, axial, and selective coding in MAXQDA. The constant comparative method was applied to refine concepts and relationships among categories. Trustworthiness was ensured through credibility, transferability, dependability, and confirmability criteria, including member checking, peer review, triangulation, maintenance of an audit trail, and intercoder agreement. The analysis yielded six major categories comprising causal conditions, the central phenomenon, contextual conditions, intervening conditions, strategies, and consequences. The central phenomenon was identified as AI-based city branding characterized by an adaptive city brand, integrated intelligent destination-image management, immersive brand experience, and authentic representation. Competitive pressures, changing tourist behavior, destination image gaps, declining effectiveness of traditional branding, and heritage conservation needs were identified as key drivers. Implementation was shaped by cultural assets, Iranian hospitality, technological infrastructure, institutional capacity, sanctions, organizational resistance, human-resource shortages, and technical barriers. The main strategies included technological, data-driven, content-marketing, institutional-managerial, and empowerment approaches, leading to reputational, economic, experiential, heritage-sustainability, and ecosystem-development outcomes. AI-based city branding in Iranian cultural destinations should be understood as an integrated adaptive system in which technological capabilities are aligned with cultural authenticity, institutional coordination, data governance, and human expertise to strengthen international destination image, improve tourist experience, and enhance competitiveness while supporting heritage sustainability.

Keywords: *Artificial Intelligence; City Branding; Cultural Tourism; Foreign Tourists; Grounded Theory; Destination Image; Smart Tourism; Iran*

1. Introduction

Cities increasingly compete not only through physical infrastructure, economic capacity, and service quality, but also through the meanings, identities, narratives, and experiences associated with them. In this context, city branding has emerged as a strategic mechanism through which urban destinations seek to differentiate themselves, communicate distinctive identities, strengthen competitiveness, attract visitors and investment, and shape the perceptions of external and internal stakeholders. Contemporary city branding therefore extends far beyond the design of logos, slogans, or promotional campaigns; it involves the coordinated construction and communication of a coherent urban identity rooted in place-specific cultural, social, historical, experiential, and institutional attributes. Research has shown that successful city branding requires an integrated understanding of place identity, stakeholder perceptions, governance structures, competitive positioning, and the symbolic resources through which cities become recognizable and meaningful to target audiences (Abdelraouf, 2025; Karasev & Matveieva, 2025; Zenker et al., 2021). The increasing complexity of urban competition has made this process particularly important for emerging destinations whose cultural resources may be substantial but whose international image is fragmented, weakly differentiated, or mediated through stereotypes and external narratives.

The relationship between city branding and urban competitiveness is especially significant in tourism-oriented cities. Branding can influence how a destination is perceived before a visit, the expectations that tourists develop, the types of experiences they seek, and their willingness to select one city over competing alternatives. In emerging urban contexts, however, the relationship between branding and competitiveness is not necessarily straightforward; branding strategies must be aligned with actual urban capabilities and supported by consistent policies, services, and experiences in order to generate sustainable competitive advantages (Abdelraouf, 2025). Studies of urban branding in Iranian cities have similarly emphasized that city image, urban management, stakeholder coordination, and the strategic use of local assets are central to the success of branding initiatives. For example, research conducted in Tabriz has highlighted the importance of city branding in strengthening citizens' mental image of the city, while studies in Zanjan and Isfahan have identified urban management and coordinated branding governance as decisive elements in the development of a recognizable and competitive urban brand (Ahmadi & Rostami, 2022; Ghorbani et al., 2022; Mokhtari Malekabadi et al., 2022). These findings demonstrate that city branding is both a perceptual and managerial process and must therefore connect symbolic representation with institutional action.

The cultural dimension is particularly critical because cultural assets provide cities with distinctive narratives that are difficult for competitors to imitate. Historical architecture, heritage landscapes, traditional practices, cuisine, music, festivals, collective memory, and intangible cultural resources can all function as core elements of urban identity. Heritage is therefore not merely an object of preservation but also a strategic branding resource capable of connecting the historical identity of a place with contemporary visitor experiences (Kavaratzis & Ashworth, 2022). Research on the historical fabric of Kerman, for instance, indicates that heritage landscape components can reinforce the identity and differentiation of an urban brand when they are systematically incorporated into the representation of the city (Zarehnejad & Mirzaei, 2023). Likewise, studies in other cultural settings demonstrate that cuisine and music can operate as powerful symbolic resources in city branding by generating memorable, culturally embedded experiences and strengthening associations between place identity and tourism consumption (Htet et al., 2024; Hutabarat, 2022). Consequently, culturally rich cities possess substantial branding potential, but realizing this potential requires a strategic mechanism for transforming cultural assets into coherent, accessible, and attractive narratives for international audiences.

At the same time, city branding should not reduce cultural identity to a commodified promotional image. Sustainable branding requires a balance between attractiveness, competitiveness, authenticity, stakeholder participation, and the long-term protection of local cultural values. Sustainable city-branding narratives must therefore be critically assessed in terms of both their communicative effectiveness and their consequences for local identity, governance, and development (González & Gale, 2022). This issue is particularly important for heritage destinations, where excessive commercialization, standardized imagery, and oversimplified representations may undermine the authenticity that constitutes the very basis of the destination's appeal. The increasing strategic use of branding in creative cities also shows that successful branding depends on an ability to translate local cultural

resources into recognizable narratives without eliminating their distinctive character. Comparative studies of Singapore and Bangkok as creative cities demonstrate how coherent design identities, institutional support, and strategic communication can transform local urban assets into internationally legible brands (Prayudi et al., 2022a, 2022b). Similar evidence from tourism areas such as Tomohon shows that branding strategies can influence tourists' interest in visiting when identity, attractions, promotional communication, and destination positioning are integrated effectively (Tombeg et al., 2024).

A major challenge, however, is that the contemporary tourism environment is increasingly shaped by digital platforms, algorithmic recommendation systems, social media, online travel communities, intelligent search engines, and data-driven decision-making. The image of a city is no longer produced exclusively by destination marketing organizations or municipal authorities. It is continuously reconstructed through search results, online reviews, social media posts, user-generated content, platform rankings, recommendation algorithms, and interactions with digital assistants. This transformation has made urban branding more dynamic and less controllable through traditional promotional approaches. The increasing complexity of brand formation therefore requires cities to monitor rapidly changing perceptions, identify audience-specific preferences, respond to reputational threats, and personalize destination communication across different markets. The complexity of city brands themselves can influence how people cognitively process and evaluate destinations, suggesting that brand design must account for the multiple identities and associations attached to a city rather than presenting a single oversimplified image (Zenker et al., 2021). Under these conditions, conventional communication tools alone may be insufficient for managing large volumes of heterogeneous and continuously changing tourism information.

Artificial intelligence offers a potentially transformative response to this challenge. In smart-city research, AI has become increasingly associated with predictive analytics, automated decision support, real-time data processing, pattern recognition, personalization, intelligent public services, and the integration of complex urban information systems. Reviews of AI applications in smart cities demonstrate that machine learning, natural language processing, computer vision, intelligent sensing, recommender systems, and predictive modelling are increasingly being applied to urban governance, infrastructure management, service delivery, mobility, sustainability, and citizen interaction (Molina, 2022; Szpilko et al., 2023). The integration of artificial intelligence with Internet of Things technologies further enables cities to collect and interpret real-time data from distributed urban environments, creating the technical foundation for more responsive and adaptive management systems (Alahi et al., 2023; Anjum et al., 2024). Such capabilities are relevant to city branding because the same technologies can potentially be applied to the monitoring of tourist behavior, destination image, visitor flows, preferences, digital engagement, and experiential feedback.

Recent smart-city developments illustrate a broader transition from static urban information systems toward anticipatory and algorithmically assisted governance. The emergence of "city brains," for example, reflects the growing use of AI systems to integrate data, forecast conditions, coordinate services, and support urban decision-making at multiple scales (Xu et al., 2024). Municipal managers increasingly perceive AI as having considerable potential for improving planning and service provision, although their assessments also reveal concerns regarding organizational readiness, governance, skills, implementation costs, accountability, and institutional constraints (Yigitcanlar et al., 2023). These issues are directly relevant to AI-based city branding because branding systems cannot be separated from the broader organizational and regulatory contexts in which urban technologies are implemented. An intelligent branding model requires not only technological tools but also access to data, institutional coordination, technical expertise, ethical governance, and managerial capacity.

The development of AI-enabled urban systems also has implications for sustainability and resource efficiency. Empirical work has demonstrated that AI development and smart-city policies can contribute to improvements in urban energy efficiency, particularly where technological innovation is supported by appropriate institutional environments (Li et al., 2024). Although energy efficiency is distinct from tourism branding, such evidence illustrates the broader capacity of AI to enhance urban decision-making by identifying patterns, optimizing resources, and enabling more responsive management. In cultural tourism destinations, comparable capabilities may support the management of visitor congestion, preservation of sensitive heritage sites, optimization of tourist flows, and development of digitally mediated experiences that reduce physical pressure on vulnerable attractions. The combination

of AI with immersive and extended-reality technologies may further create new forms of interaction with cities and heritage environments. Research on AI, the metaverse, and the Internet of City Things has emphasized the potential of synergistic AIoT and extended-reality technologies to generate more immersive, connected, and adaptive urban experiences (Bibri & Jagatheesaperumal, 2023). For heritage-based tourism, these technologies may allow visitors to engage with historical environments before, during, and after travel through virtual reconstruction, augmented interpretation, multilingual storytelling, and personalized cultural content.

Nevertheless, the growing use of artificial intelligence in cities also raises conceptual and ethical concerns. Critical perspectives on autonomous, smart, and AI-mediated urban development caution against technological determinism and the assumption that greater automation necessarily produces better cities (Robak, 2025). AI-based branding systems may reproduce biases in training data, reinforce stereotypical representations, privilege commercially dominant narratives, or weaken the human and cultural dimensions of place identity if technological outputs are treated as neutral. In cultural destinations, these risks are especially important because authenticity, representation, memory, and local participation are fundamental to the meaning of the urban brand. Thus, AI should not be understood simply as a substitute for human judgment or cultural interpretation. Instead, an effective model should integrate algorithmic capabilities with local knowledge, stakeholder participation, ethical safeguards, and mechanisms for preserving the cultural integrity of the destination.

The institutional dimension of city branding further complicates the adoption of AI. City branding often involves multiple actors, including municipalities, tourism authorities, cultural heritage organizations, private firms, residents, technology providers, universities, and civil society. Studies of multi-level governance demonstrate that branding performance varies according to institutional arrangements and the capacity of governance systems to coordinate actors, resources, and decision-making processes (Alsayel et al., 2023). Similar findings have emerged from qualitative urban branding research in Iran. The paradigmatic analysis of urban branding processes has emphasized that branding develops through interconnected causal, contextual, strategic, and outcome-related conditions rather than through isolated promotional interventions (Pakan et al., 2023). Research on the success factors of urban branding for creative-city development has likewise identified the importance of strategic planning, institutional coherence, urban identity, participation, infrastructure, and communication (Foudian et al., 2023). Therefore, any AI-based branding framework should be sensitive to the organizational and institutional environment in which technological strategies are to be implemented.

Another important implication is that branding models should be tailored to the specific type of place and target audience. Branding principles developed for organizations or general urban development cannot simply be transferred to cultural tourism destinations without adaptation. Research on branding in other organizational settings demonstrates that branding effectiveness depends on the alignment of identity, stakeholder expectations, organizational capabilities, and communication processes (Ghaffari & Hoveyda, 2023). For cities, this alignment is even more complex because urban brands encompass multiple stakeholders and overlapping identities. Cultural destinations must communicate simultaneously as places of heritage, living communities, tourism products, economic environments, and symbolic representations of national culture. This multiplicity makes personalization particularly valuable. AI-based systems can potentially tailor content according to visitors' language, interests, prior behavior, cultural background, preferred activities, travel constraints, and stage of the tourism journey, allowing the same destination to communicate different but coherent aspects of its identity to different audiences.

These considerations are highly relevant to Iran. Iranian cities possess extensive historical, architectural, artistic, religious, culinary, and intangible cultural assets, yet the transformation of these resources into internationally competitive urban brands faces significant challenges. Previous Iranian research has generated valuable knowledge regarding urban branding components, the role of urban management, cultural heritage, mental image, and strategic branding processes (Ahmadi & Rostami, 2022; Ghorbani et al., 2022; Mokhtari Malekabadi et al., 2022; Pakan et al., 2023; Zarehnejad & Mirzaei, 2023). However, this literature has predominantly examined conventional branding structures and has not sufficiently conceptualized how artificial intelligence can be systematically incorporated into the branding process of cultural destinations to attract foreign tourists. At the same time, international AI and smart-city literature has focused heavily on urban management, infrastructure, governance, energy, IoT, and automated services rather than the specific intersection of AI, city branding, heritage, and international tourism (Alahi

et al., 2023; Anjum et al., 2024; Li et al., 2024; Szpilko et al., 2023; Xu et al., 2024). This reveals a significant conceptual gap between city-branding scholarship and technological smart-city research.

The need to bridge this gap is intensified by changes in international tourism competition. Cities increasingly compete through digitally mediated perceptions long before a traveler physically enters a destination. Successful cultural destinations must therefore be capable of monitoring their international image, identifying emerging visitor preferences, communicating authentic heritage narratives, responding rapidly to misinformation or negative perceptions, and providing personalized interactions across multiple languages and digital channels. AI can potentially support these activities through sentiment analysis, generative content systems, multilingual chatbots, personalized recommender systems, intelligent visitor-management tools, predictive analytics, and immersive cultural experiences. However, the value of these technologies depends on how they are combined with cultural authenticity, heritage protection, governance capacity, tourism data, human expertise, and local institutional realities. A purely technology-centered framework would therefore be insufficient; what is required is an integrated model capable of explaining the drivers, contextual conditions, intervening barriers, central characteristics, implementation strategies, and consequences of AI-based city branding within the specific environment of Iranian cultural destinations.

The literature consequently suggests that three streams of research need to be integrated. The first concerns city branding, urban competitiveness, destination image, heritage, cultural identity, creative-city positioning, and governance (Abdelraouf, 2025; González & Gale, 2022; Karasev & Matveieva, 2025; Kavaratzis & Ashworth, 2022; Prayudi et al., 2022a, 2022b; Tombeg et al., 2024). The second concerns artificial intelligence, smart cities, IoT, anticipatory governance, intelligent systems, extended reality, and AI-supported urban management (Alahi et al., 2023; Anjum et al., 2024; Bibri & Jagatheesaperumal, 2023; Li et al., 2024; Molina, 2022; Robak, 2025; Szpilko et al., 2023; Xu et al., 2024; Yigitcanlar et al., 2023). The third concerns the specific institutional, cultural, managerial, and branding conditions of Iranian cities (Ahmadi & Rostami, 2022; Foudian et al., 2023; Ghaffari & Hoveyda, 2023; Ghorbani et al., 2022; Mokhtari Malekabadi et al., 2022; Pakan et al., 2023; Zarehnejad & Mirzaei, 2023). Integrating these bodies of knowledge can provide a more comprehensive understanding of how technological intelligence may strengthen rather than replace cultural distinctiveness and how AI capabilities can be translated into viable branding strategies under specific institutional and infrastructural conditions.

Accordingly, the aim of the present study was to identify the components of an artificial intelligence-based city branding model for attracting foreign tourists to cultural destinations in Iran.

2. Methods and Materials

The present study adopted an applied-developmental qualitative research design to identify and conceptualize the components of an artificial intelligence-based city branding model for attracting foreign tourists to cultural destinations in Iran. Given the emerging nature of the integration of artificial intelligence with city branding and cultural destination management in the Iranian context, a qualitative approach was considered appropriate for exploring the experiences, interpretations, professional knowledge, and context-specific perspectives of individuals directly involved in tourism, destination branding, digital marketing, and artificial intelligence. The study was conducted using the systematic grounded theory approach of Strauss and Corbin, which enabled the researchers to develop a contextually grounded conceptual model through the systematic identification of concepts, categories, relationships, conditions, strategies, and consequences emerging from the data. This methodological orientation was particularly suitable because the study sought to generate an indigenous explanatory framework rather than test a predetermined theoretical structure. Accordingly, data collection and analysis proceeded concurrently and iteratively, allowing concepts emerging from earlier interviews to guide subsequent data collection and theoretical refinement.

The study population consisted of experts and professionals with substantial knowledge or practical experience in cultural tourism, destination and city branding, tourism marketing, artificial intelligence, smart tourism technologies, digital content production, destination management, and tourism policymaking in Iran. Participants included senior and middle-level managers working in tourism and cultural heritage organizations, managers and specialists from inbound travel agencies, founders and technical managers of smart-tourism and tourism-technology start-ups, experts in digital tourism marketing,

professionals involved in artificial intelligence applications such as recommender systems, multilingual chatbots, sentiment analysis, generative artificial intelligence, virtual and augmented reality, and academics specializing in tourism management, destination branding, heritage tourism, or related technological fields. Particular attention was given to individuals whose professional activities were connected with major Iranian cultural destinations, including Isfahan, Shiraz, Yazd, Tabriz, and Tehran, because these destinations represent prominent settings in which cultural heritage, international tourism, destination image, and emerging digital technologies intersect.

Participants were recruited through purposive sampling followed by snowball sampling. Initial participants were deliberately selected according to their relevance to the research problem, professional expertise, and ability to provide information-rich accounts. Participants were eligible if they had at least five years of relevant professional experience and direct involvement in decision-making, planning, implementation, research, or technological development related to tourism branding, digital marketing, destination management, artificial intelligence, or smart tourism. After each interview, participants were asked to identify other knowledgeable individuals whose expertise could contribute additional or contrasting perspectives. Sampling continued concurrently with data analysis until theoretical saturation was reached, defined as the point at which additional interviews no longer generated substantively new concepts, properties, dimensions, or relationships relevant to the emerging categories. Theoretical saturation was achieved after 17 in-depth interviews. The final group comprised 14 managers and specialists from tourism, branding, technology, marketing, and related professional sectors and three university academics with relevant scholarly expertise. Participants collectively represented areas such as destination branding, foreign tourist behavior, cultural tourism management, artificial intelligence applications in tourism, smart destination management, digital marketing, sentiment analysis, generative artificial intelligence, virtual and augmented reality, multilingual chatbot development, recommender systems, heritage sustainability, electronic tourism services, tourism image and reputation management, influencer marketing, and tourism technology policymaking. This diversity was deliberately maintained to provide maximum variation in professional perspectives and to facilitate the development of a multidimensional model reflecting the organizational, technological, cultural, marketing, institutional, and experiential aspects of AI-based city branding.

The primary data collection instrument was an in-depth semi-structured interview protocol developed according to the research objective, the conceptual background of city branding and cultural tourism, and the emerging principles of artificial intelligence applications in destination management. The semi-structured format provided a consistent thematic framework across interviews while allowing participants sufficient flexibility to elaborate on their experiences, identify issues not anticipated by the researchers, explain contextual complexities, and introduce new concepts during the interviews. Questions were deliberately open-ended and exploratory and were refined progressively as the analysis developed. Rather than imposing predetermined dimensions of an AI-based branding model, the interviews were designed to elicit participants' interpretations of the factors that shape the emergence, implementation, and consequences of such a model in Iranian cultural destinations.

The interview protocol addressed several interrelated domains consistent with the logic of systematic grounded theory. Participants were asked to explain the principal drivers encouraging Iranian cultural destinations to incorporate artificial intelligence into city branding, including changes in foreign tourists' information-search behavior, demand for personalized experiences, international competition between destinations, challenges in managing destination image, limitations of conventional tourism marketing, and the increasing importance of real-time digital interaction. Questions concerning contextual conditions explored the characteristics of Iranian cultural destinations that could facilitate or shape AI-based city branding, such as the richness of tangible and intangible heritage, the cultural identity of historic cities, local hospitality, digital infrastructure, technological readiness, institutional collaboration, and the availability of culturally meaningful digital content. Participants were also encouraged to identify intervening conditions and barriers, including technological restrictions, access to international digital infrastructures, organizational resistance, shortages of interdisciplinary expertise, fragmented tourism data, legal and ethical concerns surrounding tourist information, algorithmic bias, and institutional coordination problems.

Another group of questions focused on how participants conceptualized the central phenomenon of AI-based city branding and the mechanisms through which artificial intelligence could alter the formation, communication,

monitoring, and adaptation of the international image of Iranian cultural destinations. Participants were invited to discuss such possibilities as adaptive destination brands, intelligent destination-image management, digital twins of cultural cities, and immersive brand experiences. Strategy-oriented questions explored practical applications that could be incorporated into the model, including multilingual natural-language-processing chatbots, sentiment analysis of international tourist feedback, generative artificial intelligence for multilingual and personalized destination content, personalized recommender systems, virtual and augmented reality experiences, data integration across tourism stakeholders, smart crowd management, AI-supported destination-brand dashboards, and the technological empowerment of tourism service providers. Finally, participants were asked to describe the likely consequences of implementing such strategies for destination image, tourist experience, international competitiveness, tourist attraction, loyalty, electronic word of mouth, cultural heritage sustainability, public diplomacy, local economic development, and the broader positioning of Iranian cultural cities in international tourism markets.

Interviews were conducted in a setting that allowed participants to discuss their professional experiences freely and in sufficient depth. Follow-up and probing questions were used whenever clarification, elaboration, examples, or explanations of relationships among concepts were required. Data collection remained flexible throughout the research process so that issues emerging from preliminary analysis could be explored more deeply in subsequent interviews. With participants' consent, interviews were recorded and subsequently transcribed verbatim for analysis. The researchers also maintained field notes and analytical memos during and immediately after interviews to record contextual observations, emerging interpretations, conceptual questions, relationships between categories, and ideas requiring further examination. Relevant policy and strategic documents concerning Iranian tourism, cultural heritage, smart tourism, destination development, and digital transformation were used as supplementary contextual sources to enrich interpretation and support source triangulation; however, expert interviews constituted the principal empirical data source.

The trustworthiness of the qualitative data and emerging interpretation was addressed according to the criteria of credibility, transferability, dependability, and confirmability. Credibility was strengthened through prolonged engagement with the interview material, iterative comparison of evidence across participants, member checking, peer examination, and triangulation between interviews, documentary materials, field notes, and analytical memos. Preliminary interpretations, coding summaries, and the emerging conceptual structure were returned to five interview participants to assess whether the findings accurately reflected their experiences and intended meanings, and their comments were incorporated where appropriate. Peer examination was conducted by two academics with expertise in tourism management and information technology, who critically reviewed selected coding procedures, category definitions, conceptual relationships, and the developing paradigm model. Transferability was enhanced through detailed documentation of the research setting, participant expertise, sampling logic, and contextual characteristics of Iranian cultural tourism. Dependability was addressed by maintaining a systematic audit trail of interview transcripts, coding decisions, category revisions, analytical memos, and successive versions of the conceptual model. Portions of the interview material were independently reviewed and coded to examine consistency in interpretation, and intercoder agreement was assessed using Cohen's kappa as an additional indicator of coding consistency. Confirmability was strengthened by retaining raw transcripts and analytical documentation and by using reflexive memo writing to identify and minimize the potential influence of researchers' prior assumptions on interpretation.

Qualitative data analysis was conducted concurrently with data collection using the systematic grounded theory procedures of open coding, axial coding, and selective coding. MAXQDA 2020 was used to organize interview transcripts, manage codes, retrieve coded segments, compare participants' accounts, develop category structures, and maintain analytical memos throughout the analysis. The analysis followed a constant comparative logic whereby each new segment of data was compared with previously identified concepts, codes, and categories. This iterative process enabled the researchers to refine conceptual boundaries, identify similarities and differences among participants' experiences, examine variation across professional backgrounds, and progressively determine the properties and dimensions of the emerging categories. Data collection therefore did not constitute a separate stage preceding analysis; instead, preliminary findings informed subsequent interviews and enabled theoretically relevant issues to be explored until category saturation was achieved.

During open coding, interview transcripts were examined line by line and meaningful segments related to artificial intelligence, cultural tourism, city branding, foreign tourist attraction, destination image, technology adoption, institutional conditions, tourist experience, and implementation challenges were identified. Initial codes were kept as close as possible to participants' meanings while also allowing conceptually similar statements from different interviews to be compared. More than 320 initial codes were generated at this stage. Repetitive and conceptually overlapping codes were progressively compared, merged, differentiated, or reorganized, and higher-order concepts were developed through continuous comparison. Special attention was paid to identifying the properties and dimensions of each concept and to distinguishing structural conditions from actions, interactions, implementation strategies, and anticipated consequences.

In axial coding, the open codes were systematically reorganized into broader categories and subcategories by examining the relationships among them. Following the Strauss and Corbin paradigm, categories were interpreted in terms of causal conditions, contextual conditions, intervening conditions, the central phenomenon, strategies, and consequences. Causal conditions represented the forces and developments encouraging the use of artificial intelligence in city branding for international cultural tourism. Contextual conditions reflected the cultural, technological, infrastructural, organizational, and destination-specific circumstances within which the phenomenon operated. Intervening conditions captured factors capable of facilitating or constraining implementation, including technological, institutional, regulatory, economic, human-resource, and organizational barriers. The central phenomenon represented the substantive process through which artificial intelligence becomes integrated into the management and communication of the brand of a cultural city. Strategies encompassed the technological, managerial, marketing, informational, and collaborative actions through which destinations could operationalize AI-based branding. Consequences represented the perceived outcomes of those strategies for international destination image, tourist attraction, tourist experience, competitiveness, cultural sustainability, economic benefits, and destination-brand performance. Relationships among categories were repeatedly checked against the original interview material to ensure that the developing structure remained empirically grounded rather than being imposed solely by existing theoretical frameworks.

Selective coding constituted the final integrative stage of analysis. At this stage, the researchers identified and refined the core category capable of conceptually integrating the major categories of the study and explaining the overall process of AI-based city branding in Iranian cultural destinations. Relationships between the core category and the categories generated during axial coding were examined through constant comparison, theoretical memoing, repeated review of interview transcripts, and examination of discrepant or contradictory cases. Categories that lacked sufficient conceptual clarity were revisited, and their properties, boundaries, and relationships were refined until the emerging theoretical structure was coherent and adequately supported by the data. The resulting paradigm model was therefore developed as an integrated qualitative explanation of how technological capabilities, cultural-destination characteristics, institutional conditions, implementation barriers, intelligent branding strategies, and expected tourism outcomes interact in the development of AI-based city branding for attracting foreign tourists to Iran's cultural destinations. The final conceptual structure was further assessed through member feedback, peer examination, comparison with the relevant theoretical literature, and review of the audit trail to enhance the credibility, analytical consistency, and confirmability of the qualitative findings.

3. Findings and Results

The qualitative sample consisted of 17 experts selected purposively and subsequently through snowball sampling, with recruitment continuing until theoretical saturation was achieved. The participants represented diverse areas relevant to artificial intelligence-based city branding, including destination branding, cultural tourism, foreign tourist behavior, digital marketing, smart destination management, generative artificial intelligence, sentiment analysis, recommender systems, virtual and augmented reality, multilingual chatbots, heritage sustainability, intelligent reservation systems, destination image management, influencer marketing, and tourism technology policymaking. The sample was intentionally heterogeneous in order to incorporate academic, managerial, technological, and market-oriented perspectives. It included four university academics, five senior or middle-level professionals associated with cultural heritage and tourism organizations,

four managers or senior professionals from inbound tourism and travel businesses, and four founders or technical managers working in tourism technology and smart-tourism enterprises. Of the 17 participants, 12 (70.6%) were men and 5 (29.4%) were women. Ten participants (58.8%) held a master's degree and seven (41.2%) held a PhD. Professional experience ranged from 5 to 18 years, with a mean of 9.76 years. Eleven participants (64.7%) had 5–10 years of professional experience, five (29.4%) had 11–15 years, and one (5.9%) had more than 15 years of experience. This combination of disciplinary diversity, advanced academic qualifications, and substantial professional experience provided a broad empirical basis for identifying the technological, cultural, institutional, managerial, and marketing dimensions of AI-based city branding in Iranian cultural destinations. Data analysis continued alongside interviewing, and saturation was considered to have been reached at the seventeenth interview when further analysis no longer produced substantively new categories or relationships.

Table 1

Axial Coding of the Components of AI-Based City Branding for Attracting Foreign Tourists to Iran's Cultural Destinations

Main Category	Axial Subcategory	Representative Open Codes	Participant References (n = 17)
Causal Conditions	Competitive pressures	Increasing regional competition; emergence of smart destinations in the Middle East; growing influence of digital algorithms on destination choice	15
Causal Conditions	Changing behavior of modern tourists	Shift from conventional travel agencies to intelligent search tools; demand for personalized travel experiences; algorithm-mediated decision-making	14
Causal Conditions	Destination image gap	Discrepancy between Iran's cultural reality and its international media image; need for authentic narratives; correcting negative stereotypes	16
Causal Conditions	Ineffectiveness of traditional methods	Declining effectiveness of brochures and conventional exhibitions; inadequacy of traditional destination marketing in the digital environment	15
Causal Conditions	Necessity of heritage conservation	Vulnerability of historical sites to congestion; need for pre-visit and alternative digital experiences; balancing tourism development and preservation	12
Central Phenomenon	Adaptive city brand	Dynamic adjustment of brand identity and messages according to real-time feedback; continuously evolving destination branding	15
Central Phenomenon	Integrated intelligent destination-image management	Continuous brand monitoring; coordinated management across digital channels; real-time monitoring of international perceptions	14
Central Phenomenon	Immersive brand experience	Integrated interaction before, during, and after travel; cultural immersion through advanced digital technologies	14
Central Phenomenon	Authentic representation	Accurate representation of culture and history; avoidance of stereotyping and distortion; preservation of cultural authenticity in AI-generated representations	13
Contextual Conditions	Unique cultural assets	World Heritage resources; cultural and ethnic diversity; distinctive architecture; tangible and intangible cultural heritage	16
Contextual Conditions	Iranian hospitality culture	Hospitality as social capital; human dimension of the destination brand; differentiation from competing destinations	14
Contextual Conditions	Unequal technological infrastructure	Uneven Internet quality; limitations in access to cloud infrastructure; hardware and connectivity deficiencies	15
Contextual Conditions	Institutional and human capacities	Presence of technology start-ups; availability of talented young professionals; support from selected local tourism authorities	11
Intervening Conditions	International sanctions and restrictions	Restricted access to international APIs and cloud platforms; constraints on international advertising; limited access to advanced AI services	17
Intervening Conditions	Structural and institutional barriers	Absence of a nationally coordinated tourism-data system; fragmented databases; insufficient regulatory frameworks for privacy and data governance	15
Intervening Conditions	Cultural and organizational barriers	Resistance to technological change; traditional managerial attitudes; limited familiarity with digital and data-driven marketing	14
Intervening Conditions	Human-resource barriers	Shortage of interdisciplinary expertise combining tourism, branding, and AI; migration of specialized human capital	14

Intervening Conditions	Technical and infrastructural barriers	High cost of VR/AR content production; insufficient hardware; unstable Internet and electricity in some cultural destinations	13
Strategies	Technological strategies	Multilingual NLP-based chatbots; sentiment-analysis systems; generative AI; VR/AR experiences; personalized recommender systems	17
Strategies	Data-driven strategies	Tourism data consortiums; integrated tourist-behavior monitoring; unified systems for managing tourist experience and destination data	13
Strategies	Content-marketing strategies	Collaboration with international travel influencers; short-form video production; digital campaigns; market-specific personalization of destination narratives	15
Strategies	Institutional and managerial strategies	National tourism-data standards; privacy and data-governance frameworks; specialized smart-tourism working groups; coordinated destination-brand management	12
Strategies	Empowerment strategies	AI training for managers and employees; digital capability development for local tourism businesses; specialized tourism-AI accelerators	13
Consequences	Image and reputational outcomes	Improvement of international destination image; strengthening of brand reputation; enhancement of public diplomacy and soft-power potential	17
Consequences	Economic outcomes	Greater conversion of prospective tourists; more efficient tourist acquisition; foreign investment opportunities; increased tourism-generated foreign-currency revenues	16
Consequences	Tourist-experience outcomes	Greater tourist satisfaction; stronger loyalty and revisit intention; more favorable digital engagement and electronic word of mouth	14
Consequences	Heritage-sustainability outcomes	Reduced physical pressure on historical sites; more sustainable protection of cultural environments; better visitor-flow management	13
Consequences	Ecosystem-development outcomes	Growth of smart-tourism start-ups; specialized employment creation; development and potential export of tourism technologies	11

As shown in Table 1, axial coding transformed the initial interview codes into 28 subcategories organized within six interconnected components of the paradigm model. Among the causal conditions, the destination image gap received the greatest participant coverage (n = 16), followed by competitive pressures and the declining effectiveness of traditional destination-marketing approaches (n = 15 each). These findings indicate that the movement toward AI-based city branding was interpreted not merely as a technological modernization initiative but as a response to a more fundamental challenge involving the international representation and competitive positioning of Iranian cultural destinations. Within the central phenomenon, the adaptive city brand was the most frequently emphasized dimension (n = 15), suggesting that experts regarded responsiveness, continuous learning, and the dynamic adjustment of destination narratives as defining characteristics of AI-enabled branding. Among contextual conditions, unique cultural assets received particularly strong emphasis (n = 16), demonstrating that technological innovation was considered valuable primarily when it could amplify rather than replace the distinctive cultural resources, heritage, identity, and hospitality of Iranian destinations.

The intervening conditions revealed the strongest consensus in the entire coding structure. International sanctions and associated technological restrictions were mentioned by all 17 participants, while structural and institutional barriers were identified by 15. This pattern indicates that experts viewed the feasibility of AI-based branding as strongly dependent on the accessibility of technological infrastructure, integrated tourism data, institutional coordination, specialized human resources, and suitable governance arrangements. At the strategic level, technological strategies were mentioned by all participants, with particular emphasis on multilingual NLP-based chatbots, generative AI, sentiment analysis, recommender systems, and immersive technologies. Nevertheless, the findings showed that technological tools were not conceptualized as self-sufficient interventions. They were embedded within a broader set of data-driven, content-oriented, institutional, managerial, and capability-development strategies. With respect to anticipated consequences, image and reputational outcomes received the highest level of consensus (n = 17), followed by economic outcomes (n = 16). Thus, the participants primarily interpreted AI-based city branding as a mechanism for reconstructing and strengthening the international image of Iran's cultural destinations, with tourist attraction, economic benefits, improved visitor experiences, heritage sustainability, and ecosystem development emerging as interconnected consequences of that improved positioning.

Table 2

Selective Coding and Integration of the Paradigm Model

Paradigm Component	Integrated Axial Categories	Final Selective Category	Relationship with the Core Phenomenon
Causal Conditions	Competitive pressures; changing behavior of modern tourists; destination image gap; ineffectiveness of traditional methods; necessity of heritage conservation	Drivers of transformation in city branding	These conditions generate the need to move beyond conventional destination branding toward an adaptive and intelligent branding approach capable of responding to contemporary international tourism markets.
Central Phenomenon	Adaptive city brand; integrated intelligent destination-image management; immersive brand experience; authentic representation	AI-Based City Branding for Attracting Foreign Tourists to Iran's Cultural Destinations	This constitutes the core phenomenon around which all other categories are theoretically organized and integrated.
Contextual Conditions	Unique cultural assets; Iranian hospitality culture; unequal technological infrastructure; institutional and human capacities	Context and enabling environment for AI-based city branding	These conditions define the cultural, technological, organizational, and human setting within which the core phenomenon develops and determine how AI-based branding can be localized to Iranian cultural destinations.
Intervening Conditions	International sanctions and restrictions; structural and institutional barriers; cultural and organizational barriers; human-resource barriers; technical and infrastructural barriers	Constraints and implementation challenges of intelligent city branding	These conditions facilitate, restrict, or reshape the translation of the core phenomenon into operational strategies and influence the feasibility and scope of implementation.
Strategies	Technological strategies; data-driven strategies; content-marketing strategies; institutional and managerial strategies; empowerment strategies	Operational mechanisms for implementing AI-based city branding	These strategies translate the core phenomenon into coordinated technological, data, marketing, organizational, and human-capability interventions.
Consequences	Image and reputational outcomes; economic outcomes; tourist-experience outcomes; heritage-sustainability outcomes; ecosystem-development outcomes	Outcomes of AI-based city branding	These consequences represent the interconnected results expected from successful implementation of the proposed model at the destination, tourist, heritage, economic, and tourism-ecosystem levels.

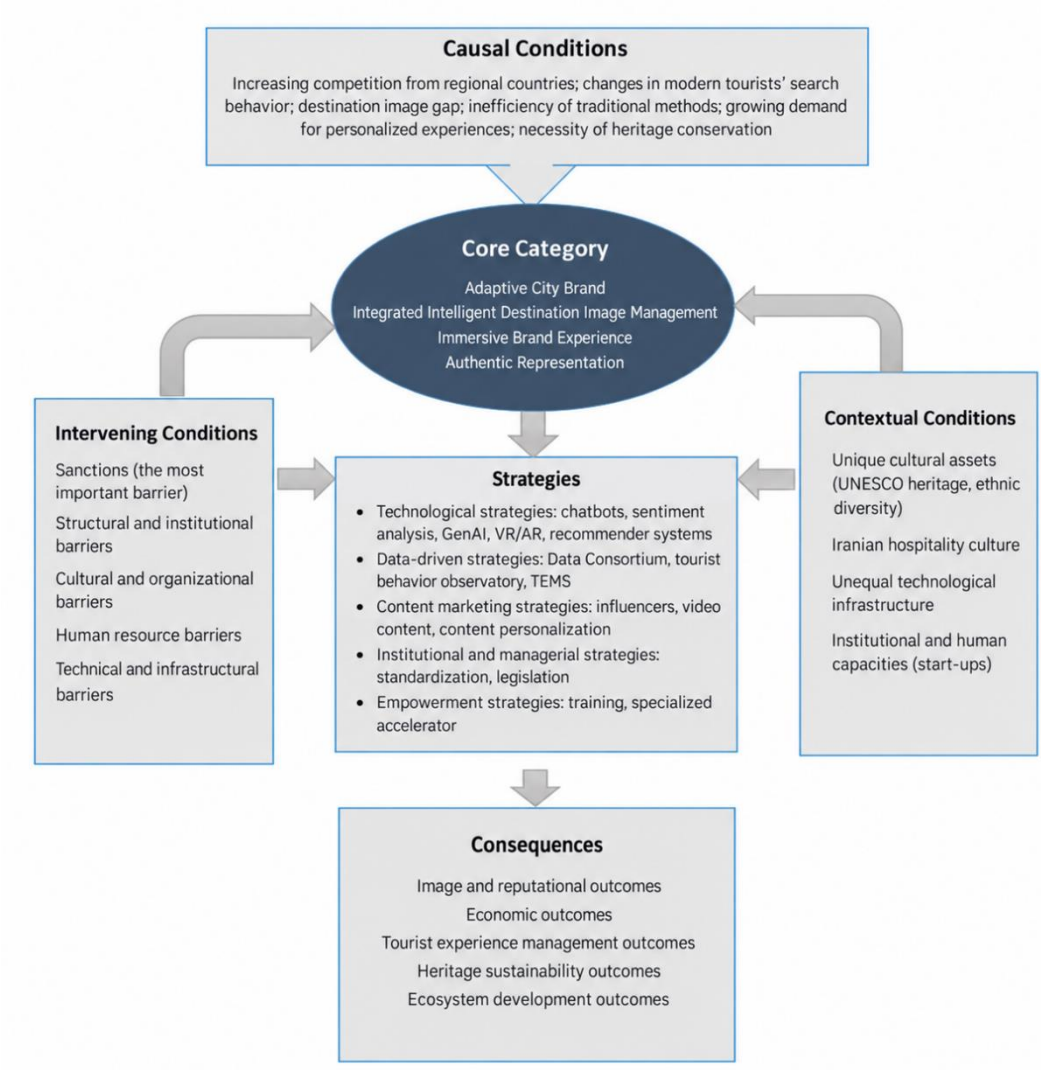
Selective coding, presented in Table 2, integrated the axial categories around the core phenomenon of **AI-Based City Branding for Attracting Foreign Tourists to Iran's Cultural Destinations**. The resulting theoretical structure indicates that the model begins with a set of transformation drivers arising from intensified destination competition, changes in foreign tourists' information-search and decision-making behavior, the perceived gap between Iran's cultural realities and its international image, the declining effectiveness of traditional marketing practices, and the need to protect vulnerable cultural heritage. These drivers create the need for an intelligent form of city branding characterized by adaptability, integrated destination-image management, immersive tourist experiences, and authentic cultural representation. However, the manifestation of this phenomenon is embedded in a distinctive contextual environment composed of Iran's rich cultural resources and hospitality traditions alongside uneven technological infrastructure and differing institutional and human capacities. At the same time, international restrictions, fragmented governance, organizational resistance, shortages of interdisciplinary expertise, and technical limitations act as intervening conditions that influence the extent to which the proposed branding approach can be implemented.

The selective coding process further demonstrated that the core phenomenon becomes operational through five mutually reinforcing strategic domains. Technological strategies supply the intelligent tools required for personalized and interactive destination communication; data-driven strategies provide the informational foundation necessary for learning and adaptation; content-marketing strategies translate cultural assets into targeted international narratives; institutional and managerial strategies create the governance mechanisms needed for coordination and responsible implementation; and empowerment strategies develop the human capabilities required to use AI effectively across the tourism ecosystem. Successful alignment of these strategies was associated with five categories of consequences: enhancement of destination image and international reputation, economic gains from foreign tourism, improvement of tourist experiences and loyalty, greater sustainability of cultural heritage, and development of a technology-oriented tourism ecosystem. Selective coding therefore revealed a coherent process in which external and internal pressures generate the need for AI-

based city branding; contextual and intervening conditions shape its implementation; coordinated strategies operationalize it; and successful implementation produces mutually connected reputational, economic, experiential, sustainability, and ecosystem-level outcomes. The final grounded model consequently conceptualizes artificial intelligence not as an isolated technological addition to destination promotion, but as an integrative capability through which the identity, image, communication, experience, and management of Iranian cultural destinations can become more adaptive, personalized, coordinated, and internationally competitive while preserving cultural authenticity.

Figure 1

Final Paradigm Model of Artificial Intelligence-Based City Branding for Attracting Foreign Tourists to Iran's Cultural Destinations



4. Discussion and Conclusion

The present study sought to identify the components of an artificial intelligence-based city branding model for attracting foreign tourists to Iran's cultural destinations. The qualitative findings produced an integrated paradigm comprising causal conditions, a central phenomenon, contextual conditions, intervening conditions, strategies, and consequences. At the center of the model was AI-based city branding, represented through four closely related dimensions: the adaptive city brand, integrated intelligent destination-image management, immersive brand experience, and authentic representation. The findings further showed that this central phenomenon emerges in response to competitive pressures, changing tourist

behavior, destination image gaps, the decreasing effectiveness of conventional branding methods, and the need to protect cultural heritage. Its implementation is shaped by Iran's cultural assets, hospitality culture, technological infrastructure, institutional capacities, sanctions, organizational barriers, human-resource limitations, and technical constraints. Finally, the model indicated that implementation depends on technological, data-driven, content-marketing, institutional, and empowerment strategies and can generate reputational, economic, experiential, heritage-related, and ecosystem-level outcomes.

One of the most important findings concerned the causal conditions driving the transition toward AI-based city branding. Competitive pressures, changing tourist behavior, the international image gap, the limitations of traditional promotional methods, and heritage conservation needs were identified as the principal forces encouraging destinations to adopt more intelligent branding approaches. This finding is consistent with the broader literature that conceptualizes city branding as a response to intensified competition among urban destinations and to the need for stronger differentiation in increasingly crowded tourism and investment markets. Studies of emerging cities have shown that urban competitiveness and branding are deeply interconnected and that cities must develop multidimensional strategies if they are to improve their relative position and international visibility (Abdelraouf, 2025). Similarly, strategic rebranding research has demonstrated that city brands must evolve in response to changing social, economic, and development conditions rather than remain fixed symbolic identities (Karasev & Matveieva, 2025). The present findings therefore suggest that AI can become a mechanism through which city brands respond more quickly to competitive changes and shifting international perceptions.

The finding concerning changing tourist behavior is particularly important. Participants emphasized that contemporary foreign tourists increasingly rely on intelligent search engines, online reviews, algorithmic recommendations, social media content, and digital assistants when selecting destinations and organizing travel. This result can be explained through the increasing complexity of destination and place branding in digital environments. Zenker and colleagues argue that city brands are cognitively complex because audiences encounter multiple and sometimes competing representations of the same place (Zenker et al., 2021). In such an environment, static promotional messages may have limited effectiveness because tourists continuously receive new information through diverse digital channels. AI-based systems can help destinations process these multiple information flows and develop more adaptive forms of communication. The results also align with studies of tourism branding in other destinations showing that successful destination branding requires strategic coordination between identity, visitor expectations, cultural resources, and contemporary communication practices (Prayudi et al., 2022a, 2022b; Tombeg et al., 2024).

The destination image gap emerged as one of the most strongly emphasized causal conditions. Participants perceived a meaningful discrepancy between Iran's cultural and historical richness and the images that may circulate in international media and digital environments. The importance of destination image in city branding has also been documented in previous Iranian research. Ahmadi and Rostami showed that city branding can improve the mental image associated with a city, highlighting the close relationship between branding activities and stakeholders' cognitive representations of place (Ahmadi & Rostami, 2022). Research on Iranian urban branding has similarly emphasized that coherent management of urban identity and image is essential for strengthening city brands (Ghorbani et al., 2022; Mokhtari Malekabadi et al., 2022). The current findings extend this literature by suggesting that AI-based sentiment analysis, digital monitoring, personalized content production, and rapid response mechanisms may provide new tools for identifying and addressing gaps between actual destination attributes and external representations.

The central phenomenon identified in the study consisted of an adaptive city brand, integrated intelligent image management, immersive brand experience, and authentic representation. The adaptive brand represents a departure from the traditional understanding of a brand as a relatively fixed set of messages. Instead, the findings indicate that AI enables a city brand to become dynamic, continuously informed by behavioral data, sentiment, digital engagement, and market-specific preferences. This interpretation aligns with the growing application of intelligent systems in urban governance. AI is increasingly used for real-time analysis, prediction, adaptive decision-making, and management of complex urban systems (Molina, 2022; Szpilko et al., 2023). The emergence of AI-supported "city brains" similarly illustrates a movement from static administrative systems toward anticipatory governance capable of responding to changing urban conditions (Xu et al., 2024). Applied to

branding, this logic suggests that destination identity should remain culturally stable at its core while its communication, personalization, and interaction mechanisms become more adaptive.

Integrated intelligent destination-image management was another major component of the central phenomenon. Participants emphasized the need to monitor and coordinate destination image across social media, travel platforms, reviews, influencers, and other digital contact points. This result is compatible with the view that city branding is not solely an advertising activity but an integrated governance and stakeholder-management process. Multi-level governance research has shown that branding performance depends strongly on institutional coordination and the alignment of diverse actors (Alsayel et al., 2023). Iranian research has likewise demonstrated that successful city branding requires coordinated urban management and systematic organization of branding activities (Mokhtari Malekabadi et al., 2022; Pakan et al., 2023). From this perspective, AI offers value not because it independently creates the brand, but because it can integrate fragmented data sources and provide managers with a more coherent representation of how the destination is perceived across different channels.

The immersive brand experience and authentic representation dimensions reveal another important contribution of the findings. Participants did not conceptualize AI-based branding solely in terms of data analysis or digital promotion. Instead, they associated it with immersive technologies such as virtual and augmented reality and with the preservation of cultural authenticity. This dual emphasis is highly consistent with research on heritage and city branding. Heritage is a central source of place differentiation because it links urban identity to historical continuity, cultural memory, and symbolic meaning (Kavaratzis & Ashworth, 2022). Studies in Iran have similarly shown that heritage landscapes can reinforce city branding by strengthening distinctive place identity (Zarehnejad & Mirzaei, 2023). International studies further indicate that cuisine, music, festivals, and other cultural elements can function as strong branding resources because they transform abstract identity into memorable experiences (Htet et al., 2024; Hutabarat, 2022). Therefore, the present finding suggests that AI-based city branding should not homogenize cultural destinations; rather, it should use technological capabilities to make culturally specific experiences more accessible, personalized, and engaging.

The emphasis on immersive experiences is also supported by developments in smart-city technologies. AI combined with IoT, virtual environments, and extended reality can create interactive systems that connect digital information with physical urban spaces (Alahi et al., 2023; Anjum et al., 2024; Bibri & Jagatheesaperumal, 2023). In cultural tourism, this technological integration can support virtual reconstructions, personalized heritage interpretation, multilingual guidance, interactive storytelling, and visitor-flow management. However, the finding that authentic representation must remain part of the core phenomenon is particularly important because the use of AI may generate distorted, stereotypical, or inaccurate cultural representations if not appropriately governed. Critical discussions of highly automated urban systems caution against treating AI as neutral or assuming that greater technological autonomy automatically improves urban life (Robak, 2025). The current study therefore indicates that authenticity should operate as an ethical and cultural boundary within which AI-based branding tools are designed and applied.

The contextual conditions identified in the study demonstrate that AI-based city branding in Iran cannot be understood independently of the cultural and institutional environment. Unique cultural assets and Iranian hospitality were identified as major strengths, while uneven technological infrastructure and variation in institutional and human capacity shaped implementation possibilities. This is consistent with the literature emphasizing that city branding must be grounded in genuine place-based attributes rather than artificially constructed identities. Sustainable city-branding narratives depend on the alignment of promotional narratives with actual cultural, environmental, and social characteristics (González & Gale, 2022). Similarly, the success of branding in creative cities is influenced by the ability to convert distinctive cultural resources into coherent strategic identities (Foudian et al., 2023). The present results indicate that Iran's cultural heritage and hospitality culture provide strong substantive foundations for differentiation, but AI can only enhance these assets when local infrastructure and institutional capacity support their digital translation.

The intervening conditions constituted one of the most significant parts of the model. International sanctions and technological restrictions were identified as the most prominent barriers, alongside fragmented governance, organizational resistance, shortages of interdisciplinary specialists, and infrastructural weaknesses. These findings

correspond with research showing that AI adoption in local government is shaped by organizational readiness, managerial perceptions, institutional resources, skills, governance structures, and implementation constraints (Yigitcanlar et al., 2023). Broader smart-city research also indicates that effective AI implementation depends on technological integration, reliable infrastructure, interoperability, and competent human resources (Alahi et al., 2023; Szpilko et al., 2023). In the Iranian context, these general requirements are intensified by restricted access to some international technologies and platforms. Thus, the participants' emphasis on local and open-source alternatives, capacity development, institutional coordination, and domestic technological ecosystems is understandable.

The five strategic categories identified in the study further demonstrate that AI-based branding requires a systemic rather than purely technological approach. Technological strategies included multilingual chatbots, generative AI, sentiment analysis, recommender systems, and immersive technologies. Data-driven strategies focused on tourism data integration and behavioral monitoring, while content-marketing strategies emphasized personalized narratives and influencer-oriented communication. Institutional strategies addressed governance, data standards, and regulation, and empowerment strategies emphasized training and capability development. These results align with previous work showing that successful branding depends on integrated strategic, managerial, communication, and institutional mechanisms (Ghaffari & Hoveyda, 2023; Pakan et al., 2023). They also reflect the smart-city literature, in which the value of AI emerges from its integration with data infrastructures, governance systems, and human decision-making rather than from isolated technological deployment (Molina, 2022; Xu et al., 2024).

The findings also identified multiple anticipated consequences. Image and reputational outcomes received the greatest emphasis, followed by economic outcomes, tourist-experience improvements, heritage sustainability, and ecosystem development. This ordering is theoretically meaningful because city branding first influences how a destination is perceived and positioned; subsequent economic and behavioral outcomes depend partly on this reputational foundation. Research on city branding and urban competitiveness supports this interpretation, showing that a coherent urban brand can strengthen attractiveness and competitive differentiation (Abdelraouf, 2025). Likewise, destination branding studies suggest that effective branding can stimulate visitor interest and strengthen tourism positioning (Tombeg et al., 2024). The anticipated economic benefits of AI-based branding are also plausible given broader evidence that AI can improve efficiency and resource allocation in urban systems (Li et al., 2024). In tourism branding, greater personalization and more precise targeting may similarly reduce inefficient promotional expenditure and improve conversion from interest to visitation.

The sustainability-related consequences are equally important. Participants believed that intelligent visitor management, virtual tourism, and digital interpretation could reduce physical pressure on vulnerable heritage sites while improving access to cultural experiences. This finding reinforces the need to integrate branding with heritage conservation rather than treating tourist growth as the only indicator of success. Heritage-based branding literature has long emphasized the importance of preserving the meanings and physical integrity of heritage resources while incorporating them into city identity (Kavaratzis & Ashworth, 2022). Sustainable branding research also argues that destination narratives should be evaluated according to long-term social and environmental outcomes rather than immediate promotional returns alone (González & Gale, 2022). Therefore, one of the major implications of the present model is that AI-based city branding can potentially function simultaneously as a marketing system, a visitor-experience mechanism, and a heritage-management instrument.

Overall, the findings indicate that the incorporation of AI into city branding should be understood as an organizational and cultural transformation rather than simply a digital marketing upgrade. The value of AI lies in its capacity to connect data, personalization, cultural storytelling, real-time monitoring, immersive experience, institutional coordination, and adaptive decision-making. This interpretation bridges two bodies of scholarship that have largely developed separately: city-branding research focused on identity, heritage, competitiveness, and governance, and smart-city research focused on AI, IoT, predictive systems, and urban management (Bibri & Jagatheesaperumal, 2023; Kavaratzis & Ashworth, 2022; Szpilko et al., 2023). The model developed in this study therefore contributes by showing how these domains can be integrated specifically for cultural tourism destinations in Iran.

This study has several limitations that should be considered when interpreting its findings. First, the model was developed from interviews with 17 experts, and although sampling continued until theoretical saturation, the

findings reflect the professional interpretations of a relatively specialized group rather than the full diversity of actors involved in city branding and cultural tourism. Foreign tourists themselves, local residents, community organizations, cultural producers, and smaller tourism enterprises were not directly represented as independent participant groups. Second, the study focused on Iranian cultural destinations and was therefore shaped by the country's particular cultural, technological, institutional, economic, and regulatory conditions; consequently, some categories, especially those relating to international technological restrictions and infrastructural barriers, may not transfer directly to other national contexts. Third, artificial intelligence technologies are developing rapidly, meaning that specific applications currently regarded as emerging or constrained may become more accessible or be replaced by new technological solutions. Finally, as a qualitative grounded-theory study, the research was designed to generate conceptual understanding and theoretical integration rather than to estimate the magnitude of relationships among categories or determine the relative causal strength of individual factors.

Future studies should examine the proposed model in a wider range of cultural destinations and include multiple stakeholder perspectives to assess how the conceptual categories change across different tourism environments. Researchers could conduct separate qualitative investigations with foreign tourists from major source markets, local residents, tour guides, cultural-heritage managers, technology developers, and tourism entrepreneurs to determine whether these groups prioritize the same dimensions of AI-based branding. Comparative research across Iranian cities with different heritage profiles, levels of technological readiness, tourism intensity, and international visibility would also be valuable. Cross-national comparative studies involving culturally rich destinations in neighboring countries could clarify which components of the model are context-specific and which have broader applicability. Future research should also examine ethical issues such as algorithmic bias, authenticity, data ownership, privacy, cultural representation, and the governance of generative AI in heritage communication. Longitudinal studies could explore how destination brands evolve after the introduction of intelligent branding tools and how tourists' perceptions, local participation, and heritage-management practices change over time.

For practice, destination managers should treat AI-based city branding as an integrated governance program rather than as the acquisition of individual technologies. Initial implementation should prioritize applications that are relatively feasible and directly connected to foreign-tourist interaction, particularly multilingual chatbots, generative multilingual content, sentiment analysis, personalized cultural recommendations, and coordinated monitoring of destination image. These initiatives should be supported by shared tourism-data standards, clear rules for privacy and data ownership, and collaboration among tourism authorities, municipalities, heritage organizations, universities, hotels, travel agencies, and technology start-ups. Managers should also invest in interdisciplinary training so that tourism professionals understand AI capabilities and technology specialists understand cultural heritage, destination identity, and branding principles. Cultural authenticity should function as a non-negotiable design principle, and AI-generated narratives should be reviewed by cultural and heritage specialists before dissemination. Finally, technology should be used to strengthen human hospitality rather than replace it, with digital tools supporting more accessible, personalized, and culturally meaningful encounters between foreign visitors and Iranian cultural destinations.

Authors' Contributions

Authors contributed equally to this article.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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Declaration of Interest

The authors report no conflict of interest.

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Ethics Considerations

In this research, ethical standards including obtaining informed consent, ensuring privacy and confidentiality were considered.

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