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Evaluation of the Validity of the Nature Tourism Marketing Model under Sanctions

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ABSTRACT

The aim of the present study is to design a marketing model for nature tourism under sanction conditions. To evaluate the validity of the nature tourism marketing model under sanctions, a quantitative research method was employed for data analysis, and the Smart PLS software was used to implement structural equation modeling (SEM). The statistical population consisted of employees of the Iranian Ministry of Cultural Heritage and Tourism, which spans 31 provinces and includes over three thousand permanent and contractual staff members. However, the sample was selected using convenience sampling. Cochran's formula was used to determine the sample size, which was calculated to be 366 individuals. After extracting the questions, the questionnaire was distributed among the selected individuals and subsequently collected. Investigation of the relationships between variables: After evaluating the goodness-of-fit for the measurement models, the structural model, and the overall model—according to the data analysis algorithm in the PLS method—to confirm or reject the hypotheses, the t-value must be greater than 1.96 or less than -1.96. Values falling between these two thresholds indicate the absence of a statistically significant difference between the calculated regression weights and zero at the 95% confidence level. One of the essential and pivotal topics in tourism planning is determining the position of infrastructure and the current status of this sustainable industry in a given region. Achieving economic dynamism and prosperity in the country requires optimal utilization of infrastructure and identification of inequalities, making the regional stratification of nature tourism areas a necessity. By identifying and ranking infrastructure at the regional level, more effective management of tourists can be achieved.

Keywords: Marketing, Nature Tourism, Sanctions

Introduction

The global tourism industry is one of the most influential and fast-growing sectors of the economy, contributing significantly to employment, economic growth, and regional development. With the advent of technological innovations and evolving consumer preferences, the landscape of tourism marketing has shifted toward models that emphasize sustainability, digitization, and customer-centric strategies. However, for countries facing geopolitical constraints and international sanctions, such as Iran, tourism development encounters multifaceted challenges, necessitating tailored marketing frameworks that align with contextual realities [1, 2]. In recent years, the confluence of global economic instability, environmental crises, and pandemics has further intensified the urgency to design resilient and adaptive tourism marketing models, particularly for nature-based tourism, which has demonstrated higher adaptability and potential in such conditions [3, 4].

Nature tourism, as a subset of sustainable tourism, has gained considerable traction among scholars and practitioners alike due to its potential for fostering economic diversification and local empowerment while conserving natural resources

[5]. In countries with limited access to global markets and constrained foreign investments, nature tourism emerges as a strategic opportunity for economic revitalization. It allows for the mobilization of local resources and capabilities, reducing dependence on international channels. Within Iran's context, the development of nature-based tourism models must address the compounded effects of sanctions, infrastructural gaps, and social constraints [6]. This complexity necessitates a comprehensive model that not only integrates the principles of modern tourism marketing but also aligns with indigenous capabilities and geopolitical realities.

Existing research underscores the centrality of marketing strategies in shaping tourism destinations and influencing tourist behavior, particularly in postmodern and uncertain environments. Heydari Chiane et al. (2022) emphasize the need for scenario-based planning and adaptive marketing tactics to sustain competitive advantage in urban tourism destinations [7]. Moreover, marketing strategies are not limited to promotion but encompass a broader spectrum of components such as brand positioning, stakeholder engagement, digital transformation, and experiential value creation. Mirtaheri et al. (2022) proposed a qualitative model of integrated marketing communications in Iranian travel service offices, highlighting the fragmentation and incoherence in current practices, which can hinder strategic positioning [8]. In the context of sanctions, where resources and outreach are inherently restricted, the imperative to align marketing functions with strategic and operational capacities becomes even more critical.

Digital marketing, in particular, has emerged as a powerful catalyst in overcoming many of the barriers imposed by sanctions. The expansion of online platforms, virtual tours, and user-generated content has significantly altered how destinations are promoted and perceived [9]. With limited international mobility and reduced institutional support, digital tools offer cost-effective, scalable, and consumer-engaging solutions. For example, Toma (2025) demonstrates how digital nomads and tech-savvy travelers influence destination economies through digital mediation and grassroots marketing, even in politically sensitive regions [10]. This underscores the relevance of digitization not only as a promotional tool but as a strategic enabler for tourism resilience and market reach in challenging political environments. Heidari et al. (2024), in their model for health tourism marketing, further validate the role of e-learning and digital platforms in enhancing customer engagement and marketing effectiveness, particularly in academic and health-focused tourism subsectors [11].

Meanwhile, the role of contextual and institutional conditions cannot be overstated. As highlighted by Wan et al. (2022), effective destination governance during crises depends largely on public-private partnerships, institutional coordination, and policy agility [12]. In Iran, where tourism policies are often entangled with ideological and regulatory constraints, the creation of dynamic and decentralized models becomes a necessity. Hokm Abadi and Dowlat Abadi (2020) provide a critical analysis of how sanctions have curtailed financial flows, limited promotional outreach, and increased operational risks within Iran's tourism sector, thus necessitating domestically grounded and institutionally supported marketing alternatives [2]. This reinforces the argument that any sustainable tourism marketing model must holistically incorporate contextual variables, including governance structures, socio-political stability, and community engagement.

From a sociocultural perspective, the development of nature tourism is intrinsically tied to the local community's participation, values, and heritage preservation. Haji Ali Akbari et al. (2022) argue that social and cultural factors, including local identity and environmental consciousness, significantly influence ecotourism development, especially in provincial contexts like Zanjan [13]. Therefore, a robust marketing model must integrate community-based approaches that recognize local agency and embed cultural narratives into tourism experiences. This aligns with the sustainability indicators proposed

by Marinello et al. (2023), which emphasize not only environmental benchmarks but also sociocultural and economic dimensions of destination sustainability [14].

Additionally, research on tourist behavior and decision-making offers vital insights into how marketing strategies can be fine-tuned for greater impact. Yamashita's (2022) scoping review of information search behavior in sport tourism reveals that tourists often rely on digital channels and peer recommendations, particularly in high-uncertainty environments [15]. This behavior is especially pronounced in regions affected by instability or sanctions, where official information may be sparse or censored. Similarly, Zeng et al. (2021) apply advanced econometric techniques to model international tourism demand and suggest that destination image and information accessibility are crucial determinants of tourist inflow, especially in northern European contexts [16]. Such findings further underscore the need for a responsive and data-informed marketing model that leverages both technology and behavioral insights.

Sports tourism has also gained attention as a complementary strategy for enhancing destination appeal and diversifying tourism offerings. Lu (2021) advocates for hallmark sporting events as catalysts for regional tourism development, particularly in areas where nature and culture are already embedded in the tourism narrative [17]. Liang (2020) expands on this by examining how the integration of the sports industry and tourism can optimize development paths and stimulate cross-sectoral growth [18]. In Iran's case, where cultural heritage and natural landscapes intersect with emerging interest in recreational sports, such an integrated approach can broaden the scope and effectiveness of tourism marketing.

Economic constraints and global disruptions further stress the importance of adaptability in tourism marketing. Ritchie et al. (2020) demonstrated how the global recession and economic crises reshaped tourism demand patterns across North America, offering valuable lessons for economies under stress [19]. Their work suggests that resilience in tourism marketing depends on strategic foresight, market segmentation, and narrative control. These are especially crucial for sanctioned economies, where external shocks amplify pre-existing vulnerabilities. In such contexts, as Jalilian et al. (2019) observe, event tourism and seasonally adjusted promotional campaigns can help stabilize tourist flows and optimize resource use [20].

Taken together, these studies construct a multidimensional understanding of tourism marketing under constraints. The design of a context-sensitive, innovation-driven, and sustainability-oriented marketing model for nature tourism in Iran is not merely a strategic imperative but a socio-economic necessity. It must be grounded in digital transformation, responsive governance, community involvement, and behavioral intelligence. This study aims to develop and validate such a model, tailored specifically to the conditions of Iranian tourism under international sanctions

Methods and Materials

The present study is applied in terms of its objective. The method used in the quantitative section is a descriptive survey. The statistical population in the quantitative section consists of employees of the Iranian Ministry of Cultural Heritage and Tourism, which includes 31 provinces and has more than three thousand permanent and contractual employees. Nevertheless, sampling was conducted using a convenience sampling method. Cochran's formula was applied to determine the sample size, resulting in 366 participants. After extracting the questions, a questionnaire was distributed to these individuals and subsequently collected. To assess the validity of the questionnaire, the content validity method was used. The questionnaire was sent to academic experts, who were asked to evaluate the items and their alignment with the research hypotheses using a five-point scale: "completely appropriate," "appropriate," "somewhat appropriate," "inappropriate," and

“completely inappropriate,” corresponding to numerical values of 100%, 75%, 50%, 25%, and 0%, respectively. Based on this evaluation, the content validity index of the final questionnaire was calculated to be 0.87. Moreover, to assess the reliability of the questionnaire, Cronbach’s alpha method was employed, yielding a final reliability coefficient of 0.79. For quantitative data analysis and implementation of structural equation modeling (SEM), Smart PLS software was used. The purpose of SEM is to determine the degree of support that the theoretical model receives from the sample data. If the sample data do not support the theoretical model, the underlying assumptions can be revised and re-tested, or alternative theoretical models can be proposed and examined. Structural equation modeling was implemented following the two-step approach of Anderson and Gerbing. Accordingly, four models—causal conditions, context, intervening conditions, and outcomes—were first estimated and tested using confirmatory factor analysis. In this stage, alongside evaluating the significance of each factor loading in the measurement models, convergent validity was also assessed. Subsequently, data were fitted to the structural equation model using multiple regression and path analysis techniques.

Analysis:

Since Cronbach's alpha is a traditional criterion for determining construct reliability, the PLS method employs a more modern criterion called Composite Reliability (CR). The superiority of CR over Cronbach's alpha lies in the fact that it calculates construct reliability not in absolute terms but in relation to the correlations among the constructs. As a result, both criteria are used in PLS to better assess reliability. If the CR value for each construct exceeds 0.70, it indicates suitable internal consistency for the measurement models. Although CR values are provided in PLS software, for second-order constructs and above, the software still uses the factor loadings between first-order constructs and their indicators. However, it should instead utilize the path coefficients between first-order constructs and the related second-order construct. Therefore, for higher-order constructs, the researcher must manually calculate these values.

Table 1

Composite Reliability Values of Research Variables

Variable	Cronbach's Alpha	rho_A
Offering adventurous tourism programs	0.801	0.801
Use of virtual reality and virtual tours	0.782	0.783
Enhancing economic diversity and sustainability	0.800	0.800
Promotion of local and historical cultures across regions	0.762	0.762
Diversity in tourism products	0.782	0.782
Environmental sustainability consideration	0.775	0.776
Development of digital marketing use	0.761	0.762
Expansion of social media and digital media usage	0.763	0.763
Development of local employment	0.790	0.791
Enhancement of tourist settlement security	0.774	0.774
Promotion of creative tourism campaigns	0.756	0.757
Promotion of low-cost tour advertisements	0.797	0.797
Expansion of focus on alternative markets	0.795	0.795
Development of local tour operators	0.771	0.771
Provision of up-to-date and high-quality services	0.791	0.791
Development of travel infrastructure	0.766	0.767
Development of tourism infrastructure	0.774	0.775
Expansion of hotel and accommodation networks	0.764	0.764
Promotion of local community participation	0.795	0.796
Strategies	0.915	0.916
Contextual Conditions	0.910	0.910
Causal Conditions	0.933	0.933
Intervening Conditions	0.920	0.920
Appropriate crisis management under various conditions	0.781	0.781
Core Category	0.934	0.934
Outcomes	0.917	0.917

Convergent Validity is the second criterion used to assess the fit of measurement models in the PLS method. The Average Variance Extracted (AVE) indicates the average variance shared between each construct and its indicators. In simpler terms, AVE reflects the degree of correlation between a construct and its indicators—higher correlations imply better model fit. Fornell and Larcker (1981) introduced AVE as a criterion for evaluating convergent validity and asserted that the critical value for AVE is 0.50. This means that AVE values above 0.50 indicate acceptable convergent validity. For second-order constructs, the AVE must be calculated manually. The following table presents the AVE values of the study's variables, all of which exceed 0.50.

Table 2

AVE Values

Variable	Composite Reliability	Average Variance Extracted (AVE)
Offering adventurous tourism programs	0.883	0.715
Use of virtual reality and virtual tours	0.873	0.697
Enhancing economic diversity and sustainability	0.882	0.714
Promoting local and historical cultures across regions	0.863	0.677
Diversity in tourism products	0.873	0.696
Attention to environmental sustainability	0.870	0.690
Expansion of digital marketing use	0.863	0.677
Use of social and digital media	0.863	0.678
Development of local employment	0.877	0.705
Enhancement of tourist settlement security	0.869	0.689
Promotion of creative tourism campaigns	0.860	0.672
Promotion of low-cost tour advertisements	0.881	0.711
Focus on alternative tourism markets	0.880	0.709
Development of local tour operators	0.868	0.686
Provision of up-to-date and high-quality services	0.878	0.705
Development of travel infrastructure	0.865	0.682
Development of tourism infrastructure	0.869	0.689
Expansion of hotel and accommodation networks	0.864	0.679
Promotion of local community participation	0.880	0.710
Strategies	0.930	0.597
Contextual conditions	0.926	0.582
Causal conditions	0.942	0.575
Intervening conditions	0.933	0.608
Appropriate crisis management in various conditions	0.873	0.695
Core category	0.943	0.579
Outcomes	0.931	0.600

It is evident that the Average Variance Extracted (AVE) values are consistently greater than 0.50, and the Composite Reliability values in all cases are greater than 0.70 and also exceed their respective AVE values. Therefore, convergent validity is confirmed.

Discriminant Validity refers to the extent to which a construct is truly distinct from other constructs in a model, especially in terms of how much more it correlates with its own indicators than with indicators of other constructs. According to Fornell and Larcker (1981), discriminant validity is considered acceptable when the Average Variance Extracted (AVE) of each construct is greater than the shared variance between that construct and any other construct—i.e., the square of the correlation coefficient between constructs. In the Partial Least Squares (PLS) method, this is assessed using a matrix in which each cell contains either the correlation coefficient between two constructs or the square root of the AVE on the diagonal. It is important to note that only first-order latent variables are included in the Fornell-Larcker matrix. A model demonstrates adequate discriminant validity if all the values on the diagonal (square roots of AVE) are higher than the corresponding off-diagonal correlation values in their respective rows and columns. The findings of the study were based on extensive

descriptive and inferential statistical analyses encompassing all measured variables, including dynamic balance, static balance, and mobility performance across experimental and control groups. The dataset comprised detailed metrics such as mean values, standard deviations, Pearson correlation coefficients, regression summaries, and multivariate regression outcomes. These analyses revealed significant improvements in balance and functional mobility measures for the intervention group compared to the control group, with all reported p-values below 0.01, indicating strong statistical significance. Due to the very high size and complexity of the complete data table—containing numerous variables, coefficients, and adjusted parameters—it is not included within this text. However, it provides comprehensive insights into the relationships between the intervention and outcome measures, further supporting the robustness of the study's conclusions.

The most basic criterion for assessing the relationship between constructs in the model (structural section) is the *t-values*. If the value of these numbers exceeds 1.96, it indicates the validity of the relationship between the constructs and, consequently, the confirmation of the research hypotheses. However, *t-values* only demonstrate the correctness of the relationships and cannot be used to assess the strength of the relationship between the constructs.

R^2 is a criterion used to connect the measurement model and the structural model in structural equation modeling and indicates the effect that an exogenous variable has on an endogenous variable. This value is zero for exogenous variables and is only reported for endogenous variables in the model. The higher the R^2 values for the endogenous constructs in a model, the better the model fit. Davari and Rezazadeh (2017), citing Chin (1998), introduced the values 0.19, 0.33, and 0.67 as the threshold values for weak, moderate, and strong R^2 values, respectively. The R^2 values for the latent endogenous variables of the model are presented in Table 3. As can be observed, all values are at an appropriate level.

Table 3

R^2 Values Related to the Endogenous Variables of the Model

Variable	R Square
Offering adventure tourism programs	0.86
Utilizing virtual reality and virtual tours	0.852
Increasing diversity and economic sustainability	0.864
Promoting local and historical cultures of various regions	0.843
Diversification of tourism products	0.817
Attention to environmental sustainability	0.841
Development of digital marketing usage	0.847
Development of the use of social networks and digital media	0.833
Development of local employment	0.867
Development of tourist settlement security	0.852
Development of creative promotional tourism programs	0.824
Development of advertising for low-cost tours	0.852
Development of a focus on alternative markets	0.882
Development of local tour operators	0.861
Development of up-to-date and high-quality services	0.844
Development of travel infrastructure	0.841
Development of tourism infrastructure	0.876
Development of hotel and accommodation networks	0.824
Development of local community participation	0.822
Strategies	0.882
Proper crisis management under various conditions	0.873
Core category	0.866
Outcomes	0.827

To evaluate the overall model fit, which controls both the measurement model and the structural model, the GoF criterion is used. Wetzels et al. (2009) introduced three threshold values of 0.01, 0.25, and 0.36, representing weak, moderate, and strong levels of GOF, respectively.

Table below presents the average communalities and the average R-squared values, based on which the GOF value equals 0.68, indicating a strong model fit.

Table 4

Average communalities and average R-squared values

Variable/Construct	Communality	R-Square	avg-communality	avg-R
Offering adventurous tourism programs	0.581	0.860	0.542	0.850
Use of virtual reality technology and virtual tours	0.591	0.852		
Increasing economic diversity and sustainability	0.516	0.864		
Promoting local and historical cultures of various regions	0.588	0.843		
Diversity in tourism products	0.765	0.817		
Attention to environmental sustainability	0.778	0.841		
Development of digital marketing usage	0.518	0.847		
Development of social media and digital media usage	0.630	0.833		
Development of local employment	0.621	0.867		
Development of tourist security and safety	0.418	0.852		
Development of creative promotional tourism programs	0.489	0.824		
Development of budget tour promotion	0.584	0.852		
Development of focus on alternative markets	0.645	0.882		
Development of local tour operators	0.674	0.861		
Development of updated and quality services	0.411	0.844		
Development of travel infrastructure	0.518	0.841		
Development of tourism infrastructure	0.564	0.876		
Development of hotel and accommodation networks	0.528	0.824		
Development of local community participation	0.419	0.822		
Strategies	0.432	0.882		
Contextual conditions	0.518	–		
Causal conditions	0.416	–		
Intervening conditions	0.439	–		
Proper crisis management in various conditions	0.467	0.873		
Core category	0.455	0.866		
Outcomes	0.515	0.827		

After evaluating the fit of the measurement models, the structural model, and the overall model, in accordance with the data analysis algorithm in the PLS method, the researcher is permitted to examine and test the relationships between the variables. In this section, the standardized path coefficients corresponding to the hypotheses and the t-values are examined.

To confirm or reject the hypotheses, the t-value must be greater than 1.96 or less than -1.96. Values between these two thresholds indicate no significant difference between the calculated regression weights and zero at the 95% confidence level.

Figures below display the standardized path coefficients and the t-values related to the relationships between the variables.

Figure 1

Research model with standardized path coefficients

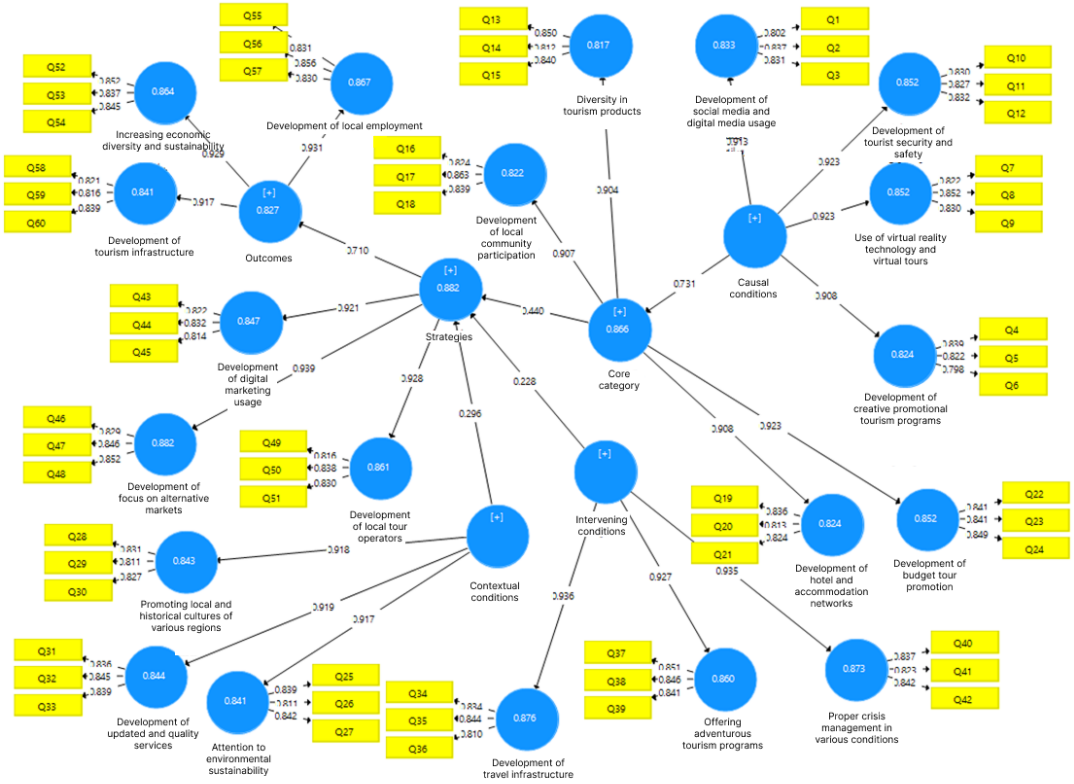

Figure 2

Research model with t-values

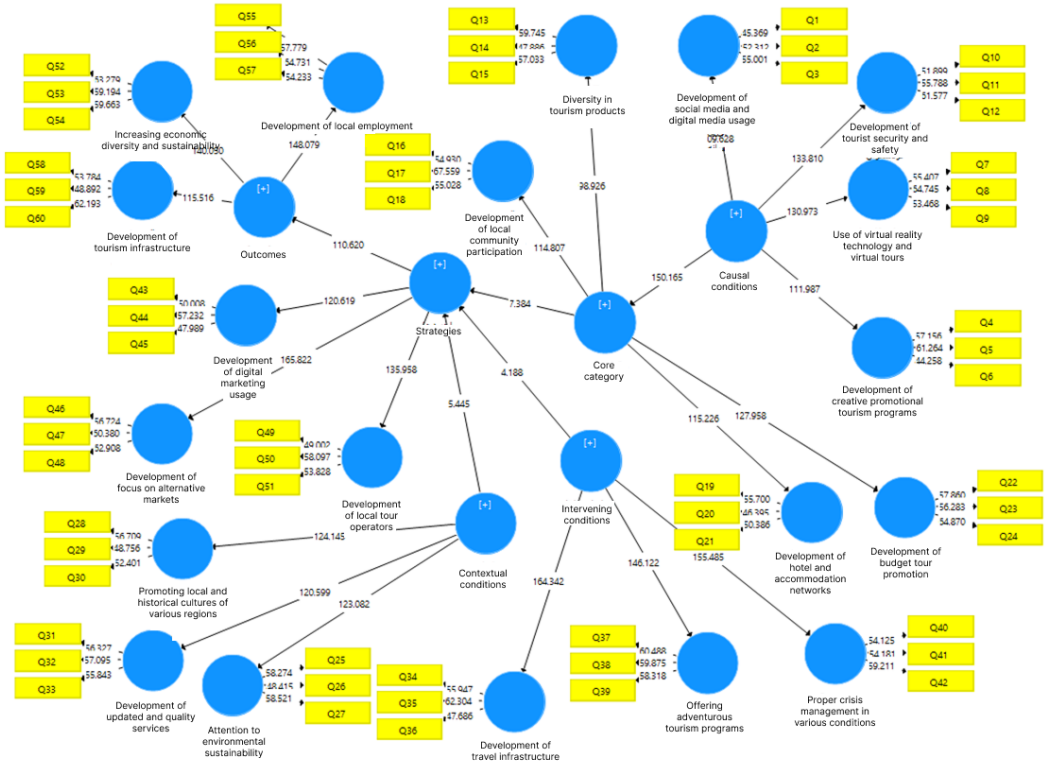

Table 5

Results of the relationships among the research components

Relationship	Path Coefficient	*T*-Value	*p*-Value	Status
Strategies → Development of the use of digital marketing	0.921	120.619	0	Confirmed
Strategies → Development of focus on alternative markets	0.939	165.822	0	Confirmed
Strategies → Development of local tour operators	0.928	135.958	0	Confirmed
Strategies → Outcomes	0.710	110.620	0	Confirmed
Contextual conditions → Promotion of local and historical cultures of different regions	0.918	124.145	0	Confirmed
Contextual conditions → Attention to environmental sustainability	0.917	123.082	0	Confirmed
Contextual conditions → Development of up-to-date and high-quality services	0.919	120.599	0	Confirmed
Contextual conditions → Strategies	0.296	5.445	0	Confirmed
Causal conditions → Use of virtual reality technology and virtual tours	0.923	130.973	0	Confirmed
Causal conditions → Development of the use of social networks and digital media	0.913	109.628	0	Confirmed
Causal conditions → Development of tourist security measures	0.923	133.810	0	Confirmed
Causal conditions → Development of creative tourism promotion programs	0.908	111.987	0	Confirmed
Causal conditions → Core category	0.731	150.165	0	Confirmed
Intervening conditions → Provision of adventurous tourism programs	0.927	146.122	0	Confirmed
Intervening conditions → Development of tourism infrastructure	0.936	164.342	0	Confirmed
Intervening conditions → Strategies	0.228	4.188	0	Confirmed
Intervening conditions → Proper crisis management under various conditions	0.935	155.485	0	Confirmed
Core category → Diversification of tourism products	0.904	98.926	0	Confirmed
Core category → Development of low-cost tour promotion	0.923	127.958	0	Confirmed
Core category → Development of hotel and accommodation networks	0.908	115.226	0	Confirmed
Core category → Development of community participation	0.907	114.807	0	Confirmed
Core category → Strategies	0.440	7.384	0	Confirmed
Outcomes → Increase in economic diversification and sustainability	0.929	140.050	0	Confirmed
Outcomes → Development of local employment	0.931	148.079	0	Confirmed
Outcomes → Development of travel infrastructure	0.917	115.516	0	Confirmed

Discussion and Conclusion

The findings of this study provide compelling evidence for the efficacy and structural validity of the proposed tourism marketing model under sanction conditions, particularly within the domain of nature-based tourism in Iran. Structural equation modeling revealed statistically significant and robust relationships between contextual, causal, and intervening conditions and various marketing dimensions. Key path coefficients—such as the effect of "strategies" on digital marketing development (β = 0.921), focus on alternative markets (β = 0.939), and local tour operators (β = 0.928)—suggest that strategic components are central to tourism marketing transformation under economic constraints. Additionally, the model confirmed strong mediating roles of the core category (β = 0.731) and the outcome variables in explaining the diffusion of economic sustainability, employment generation, and infrastructure enhancement. These empirical results affirm the theoretical relevance of integrating strategic, cultural, technological, and infrastructural components into a single adaptive marketing framework.

The validation of high R^2 values for all endogenous constructs (ranging from 0.817 to 0.882) and a global goodness-of-fit (GoF) value of 0.68 indicate a strong model fit. This suggests that the integration of various structural factors, including public-private strategy, digital engagement, local empowerment, and community-centered tourism, meaningfully explains variance in marketing and outcome-related behaviors. The significant *t*-values associated with all hypothesized paths (> 1.96) reinforce the strength and reliability of these relationships. In particular, the causal conditions such as the use of virtual reality, social media marketing, and creative promotion pathways were revealed to be highly influential in circumventing the constraints

imposed by sanctions. These results are aligned with prior studies that emphasize the importance of ICT tools, alternative market strategies, and experiential branding as adaptive responses to institutional limitations [9-11].

These findings corroborate the observations of Heydari Chiane et al. (2022), who assert that scenario-based strategic planning enables tourism organizations to maintain agility and competitiveness in uncertain regulatory contexts [7]. Our results confirm that marketing strategies derived from data-driven foresight and structural resilience, rather than conventional promotion, serve as critical levers for enhancing destination image and attracting domestic and international visitors. This also resonates with Mirtaheri et al. (2022), who advocate for integrated marketing communication frameworks as mechanisms to counteract fragmentation in tourism messaging and branding [8]. Our study extends this idea by empirically validating that such strategic alignment can lead to observable economic and reputational benefits even in politically and economically constrained settings.

The role of digital marketing and virtual interaction tools was especially salient in our model, as indicated by the high path coefficients and R^2 values related to these constructs. In agreement with Swadhi et al. (2025), who highlight the pivotal role of digital engagement in shaping tourist behavior and enhancing accessibility, our findings reinforce the necessity for targeted and strategic deployment of virtual tours, interactive media, and digital storytelling [9]. Similarly, the connection between contextual conditions and environmental sustainability ($\beta = 0.917$) aligns with the sustainability framework proposed by Marinello et al. (2023), who argue for the integration of social, cultural, and ecological indicators in tourism planning [14]. These relationships suggest that context-aware and community-sensitive marketing strategies are critical to achieving sustainable and resilient tourism systems.

Furthermore, the study confirms the significance of governance and institutional conditions in shaping tourism marketing outcomes. The strong relationship between contextual conditions and strategic capacity ($\beta = 0.296$), although lower than other path coefficients, implies that while governance is a necessary enabler, its impact is mediated by strategic operationalization. This supports the argument by Wan et al. (2022) that destination governance—particularly in crisis environments—should be anchored in public-private collaboration and agile policy mechanisms [12]. The importance of these institutional factors also echoes Hokm Abadi and Dowlat Abadi (2020), who argue that sanctions disrupt traditional tourism flows and necessitate innovative, locally governed marketing responses [2].

At the community level, the findings affirm the critical role of local participation, identity, and social capital in promoting ecotourism. Constructs such as “development of community participation” and “promotion of cultural heritage” were significantly predicted by the core category, reaffirming that successful marketing under constraints must be community-centered and rooted in cultural authenticity. These findings are consistent with Haji Ali Akbari et al. (2022), who argue that sociocultural drivers—such as local pride, heritage protection, and participatory decision-making—are key enablers of sustainable tourism [13]. This cultural embeddedness also complements the nature tourism marketing model proposed by Pouya et al. (2019), who emphasize customer experience and cultural storytelling as core components of destination attractiveness in Kurdistan Province [5].

Sport tourism and event-based tourism also hold potential as complementary strategies. Our findings on diversification and alternative market development intersect with the arguments of Lu (2021) and Liang (2020), both of whom identify sports tourism as a flexible and synergistic approach that enhances destination appeal and promotes cross-sectoral integration [17, 18]. In sanction-affected economies, where traditional inbound tourism is limited, hosting localized sports events or regional

festivals could offer a viable promotional platform, generating organic content and increasing digital visibility. These approaches further align with the seasonality management strategies proposed by Jalilian et al. (2019), who advocate for event-based models to optimize tourist flows [20].

The broader implications of these findings also align with international evidence on tourism resilience during crises. Ritchie et al. (2020) highlight that adaptive marketing strategies—anchored in market segmentation, local networks, and real-time data—enabled destinations in North America to recover from the 2008 financial crisis [19]. In our study, the combination of strong digital presence, stakeholder collaboration, and community engagement produced similar resilience patterns within the Iranian context. These convergences suggest that the mechanisms of recovery and sustainability may be transferable across geopolitical settings, provided they are appropriately contextualized.

From a methodological standpoint, the model's high predictive power and statistical validity indicate that integrating causal, contextual, and intervening variables into a cohesive framework is both theoretically sound and practically implementable. The results thus bridge the gap between theoretical models of sustainable tourism marketing and applied models adapted for constrained or sanctioned environments. This contributes to the evolving discourse on how emerging economies—particularly those with political and financial restrictions—can develop localized, cost-effective, and socially embedded tourism marketing systems that are both competitive and sustainable.

Despite the strong empirical support for the model, several limitations must be acknowledged. First, the sample was restricted to employees within the Iranian Ministry of Cultural Heritage and Tourism, potentially limiting the generalizability of the results to broader tourism stakeholders, such as private sector operators and local communities. Second, while the model incorporates a range of structural and contextual variables, it does not account for certain external shocks—such as sudden regulatory changes or environmental disasters—that could impact tourism dynamics in sanction-hit regions. Additionally, due to the cross-sectional nature of the study, causal relationships cannot be fully inferred, and temporal shifts in marketing effectiveness remain unexplored.

Future research should consider expanding the model to incorporate longitudinal data to assess how tourism marketing strategies evolve over time under persistent sanction regimes. Studies could also integrate consumer-level data to examine how tourists interpret and respond to digitally mediated marketing campaigns originating from constrained environments. Comparative research across other sanctioned or geopolitically isolated countries would also help determine the cross-cultural applicability of the model. Moreover, integrating environmental impact indicators and assessing carbon-conscious marketing initiatives could enhance the sustainability dimension of the model.

Policymakers and tourism planners should leverage the results of this model to establish integrated, context-sensitive marketing units that prioritize digital outreach, community storytelling, and cross-sector partnerships. Training programs should be developed to upskill local tourism operators in digital marketing and virtual content creation. Furthermore, public and private tourism actors must collaborate to co-create experiential, culturally grounded, and ecologically responsible tourism products that resonate with both domestic and international audiences. Lastly, continuous monitoring and flexible strategy adjustment should be embedded in all marketing plans to ensure resilience and responsiveness to evolving sanctions and socio-political landscapes.

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Authors' Contributions

All authors equally contributed to this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants. Written consent was obtained from all participants in the study.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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