

# Designing an Electronic Model of Sports Entrepreneurship in Tourism Using the Business Model Canvas in Iran

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## ABSTRACT

In the contemporary era, the development and advancement of emerging technologies, along with the expansion of entrepreneurial domains across various economic sectors—including tourism and sport—have gained increasing importance. This study aims to propose an innovative and practical model that integrates digital technical knowledge, principles of sports entrepreneurship within tourism, and the management of this intelligent system. In this regard, the Business Model Canvas is employed as a strategic tool to achieve a clearer understanding and systematic organization of the key components of a smart sports business in the tourism sector. By conducting an in-depth analysis of Iran's tourism market, examining the interests of individuals in engaging with indigenous and global sports within tourism tours, and identifying existing opportunities and challenges, this research seeks to present an efficient and implementable model for entrepreneurs and practitioners in this field. This model not only has the potential to enhance efficiency and productivity in the sector but can also serve as a successful framework for other areas related to sports-based tourism processes. Given that Iran, with its rich culture and civilization, four-season climate, and deep-rooted ancient sports traditions, possesses substantial latent potential in both tourism and sport, this study represents an important step toward identifying and optimally leveraging these opportunities. To this end, after identifying the influential factors and main components (constructs and variables), a research questionnaire was developed. Following content validity assessment and data collection from a sample of 200 participants, the proposed model—based on hypotheses derived from the main components—was initially developed using MAXQDA software. Statistical analyses were then conducted using IBM SPSS software, and finally, based on the analyzed data and the proposed conceptual model, the structural model was designed and analyzed using SmartPLS software. The final research model, which reflects the approach of factors involved in designing an electronic model of sports entrepreneurship in tourism using the Business Model Canvas, was ultimately obtained. The novel contribution of this study lies in the fact that while most previous studies and projects have addressed sports tourism entrepreneurship, very few have specifically examined sports entrepreneurship within the tourism context. This research advances the field by conceptualizing sports entrepreneurship in tourism as a web-based intelligent system grounded in the principles of the Business Model Canvas.

**Keywords:** electronic model design (web-based system intelligitization); sports entrepreneurship in tourism; business model canvas



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## Introduction

In recent decades, entrepreneurship has increasingly been recognized as a central driver of economic growth, innovation, and social transformation across diverse industries, including tourism and sport. The convergence of these two sectors has created a dynamic interdisciplinary field commonly referred to as sports tourism entrepreneurship, which integrates physical activity, cultural experiences, and destination development within entrepreneurial business frameworks (1, 2). This convergence has been further intensified by the rapid diffusion of digital technologies, web-based platforms, and data-driven business models, which have fundamentally reshaped value creation, customer engagement, and competitive advantage in service-based industries (3, 4). As a result, the need for systematic, technology-enabled entrepreneurial models tailored specifically to sports tourism has become increasingly evident.

Sport entrepreneurship has evolved from a marginal research area into a recognized domain of inquiry encompassing innovation, creativity, social inclusion, and strategic management (5, 6). Scholars emphasize that sport-based entrepreneurial initiatives can generate not only economic value but also social, cultural, and community-oriented outcomes, particularly when embedded within tourism ecosystems (7, 8). Tourism, by its nature, is highly experiential, customer-centered, and sensitive to destination identity, making it an ideal context for entrepreneurial experimentation and digital transformation (9, 10). However, despite growing interest in sport tourism entrepreneurship, existing studies have largely focused on descriptive analyses, policy perspectives, or isolated success factors, rather than on integrative electronic models capable of guiding system-level implementation.

Digitalization has emerged as a structural force reshaping tourism demand, supply chains, and service delivery models. Web-based platforms, electronic business systems, and intelligent interfaces have enabled tourism entrepreneurs to reach global markets, personalize services, and optimize operational efficiency (3, 11). In the sports tourism context, digital tools facilitate online booking, virtual promotion, customer relationship management, and interactive engagement with consumers before, during, and after travel experiences. Nevertheless, the absence of coherent electronic frameworks that integrate entrepreneurship principles with digital infrastructure remains a critical gap, particularly in emerging economies where institutional complexity and market volatility are pronounced (12, 13).

The Business Model Canvas (BMC) has gained prominence as a strategic tool for conceptualizing, designing, and innovating business models across industries. Its visual and modular structure allows entrepreneurs to systematically analyze value propositions, customer segments, channels, relationships, key activities, resources, partners, cost structures, and revenue streams (14, 15). In sport-related ventures, the BMC has been successfully applied to assess sustainability, innovation capacity, and strategic agility (15, 16). However, its application in digitally enabled sports tourism entrepreneurship—particularly as a foundation for electronic system design—has received limited empirical attention.

From a theoretical perspective, sport entrepreneurship is increasingly viewed as a multidimensional phenomenon shaped by innovation, creativity, institutional context, and stakeholder interactions (5, 17). Innovation in sport entrepreneurship extends beyond product development to include novel service configurations, digital marketing strategies, and customer engagement mechanisms (18, 19). In tourism settings, these innovations must align with destination characteristics, cultural heritage, and consumer expectations, thereby increasing the

complexity of entrepreneurial decision-making (20, 21). Consequently, integrated models that capture these interdependencies are essential for both academic understanding and practical implementation.

The Iranian context presents a particularly compelling case for investigating electronic sports tourism entrepreneurship. Iran possesses a rich cultural heritage, diverse climatic zones, and a long history of indigenous and traditional sports, all of which constitute significant yet underutilized tourism assets. At the same time, Iranian tourism and sport enterprises face structural challenges related to organizational agility, digital readiness, marketing capabilities, and customer relationship management (12, 16). Recent studies emphasize that entrepreneurial success in Iranian tourism requires context-sensitive models that integrate organizational, technological, and cultural dimensions (13, 22). Despite this recognition, research offering operational electronic frameworks grounded in established business modeling tools remains scarce.

Marketing and customer-centricity constitute another critical dimension of sports tourism entrepreneurship. Digital marketing, online advertising, and customer relationship management systems play a decisive role in shaping tourist satisfaction, trust, and loyalty (5, 9). Entrepreneurial ventures that effectively leverage electronic communication channels are better positioned to create perceived value, enhance believability, and foster long-term customer relationships (17, 23). In this regard, integrating marketing and customer management components within an electronic entrepreneurial model is not merely desirable but essential for competitiveness.

Furthermore, sustainability and social impact considerations have become increasingly prominent in sport and tourism entrepreneurship research. Scholars highlight that entrepreneurial models should account for social inclusion, cultural preservation, and long-term destination resilience (6, 8). Digital platforms and electronic systems can support these objectives by enabling inclusive participation, transparent governance, and data-informed decision-making (7, 11). Therefore, an electronic sports tourism entrepreneurship model grounded in the Business Model Canvas has the potential to align economic performance with social and cultural value creation.

Despite the breadth of existing literature, several research gaps remain evident. First, most studies address sport entrepreneurship and tourism entrepreneurship as overlapping or parallel domains, rather than explicitly conceptualizing sports entrepreneurship within tourism as a distinct, system-oriented phenomenon. Second, the role of electronic and web-based systems is often treated as a supplementary factor rather than as the core infrastructure of entrepreneurial activity. Third, empirical research integrating the Business Model Canvas with variance-based structural modeling to validate complex entrepreneurial systems is limited, particularly in developing and transitional economies (1, 2). Addressing these gaps requires a comprehensive, data-driven approach that combines conceptual modeling with empirical validation.

Recent advances in entrepreneurial research emphasize the importance of resilience, adaptability, and digital competence in navigating uncertainty and crisis conditions (10, 11). These insights further reinforce the necessity of designing flexible electronic models capable of supporting sports tourism entrepreneurs in volatile environments. By embedding such models within the Business Model Canvas logic, researchers and practitioners can gain a structured yet adaptable framework for innovation and implementation.

In summary, the intersection of sports entrepreneurship, tourism development, and digital transformation represents a strategically important yet underexplored research domain. While prior studies have contributed valuable insights into individual components such as innovation, marketing, sustainability, and organizational factors, an integrative electronic model grounded in a validated business modeling framework remains lacking,

particularly in the Iranian context (12, 13, 20). Addressing this gap is essential for advancing both theoretical understanding and practical application in sports tourism entrepreneurship.

Accordingly, the aim of this study is to design and empirically validate an electronic model of sports entrepreneurship in tourism in Iran based on the Business Model Canvas using variance-based structural equation modeling.

## Methods and Materials

This study adopted an applied, cross-sectional design with a mixed qualitative–quantitative approach aimed at developing and validating an electronic model of sports entrepreneurship in tourism using the Business Model Canvas within the Iranian context. The research process began with conceptual modeling, reflecting the growing scholarly interest in conceptual modeling as a means of simulating and explaining complex systems over the past decade. Based on the proposed conceptual framework, the target population consisted of individuals with relevant experience or interest in tourism, sports entrepreneurship, digital business development, and related managerial fields in Iran. Sampling adequacy was determined using the Barclay ten-times rule within the partial least squares structural equation modeling (PLS-SEM) framework, which recommends that the minimum sample size be ten times the maximum number of indicators of the most complex construct or ten times the largest number of structural paths directed at a particular latent variable. According to this rule, the minimum required sample size was estimated at 80 respondents. To ensure robustness and enhance statistical power, data were ultimately collected from 200 participants, exceeding the minimum requirement. Participants were recruited through online channels, and demographic characteristics indicated diversity in gender, age groups, and educational attainment, supporting the representativeness of the sample for the study objectives.

Data collection was conducted using a researcher-developed questionnaire derived from the identified constructs and variables of the proposed electronic sports entrepreneurship model. Prior to large-scale administration, content validity was rigorously assessed, as content validity is a critical and complex step in the development of instruments designed to measure multidimensional constructs. The Lawshe method was employed to calculate the Content Validity Ratio (CVR), using a two-point expert judgment scale distinguishing between “essential” and “not essential” items. The questionnaire was evaluated by 25 subject-matter experts, and based on Lawshe’s criteria, items with CVR values equal to or greater than 0.37 were retained. All items met the required threshold, indicating satisfactory content validity. Following validation, the finalized questionnaire was administered online using a five-point Likert scale ranging from “strongly disagree” to “strongly agree.” The online format facilitated broad access and efficient data collection. Reliability analysis was subsequently conducted after data collection to ensure internal consistency of the measurement instrument.

Data analysis was carried out in several sequential stages using specialized software packages. Initially, qualitative data and conceptual relationships were organized and refined using MAXQDA, a qualitative analysis software widely applied for content analysis and thematic analysis of complex social and cultural phenomena. This stage supported the development and refinement of the proposed structural and conceptual model. Quantitative data were then transferred to IBM SPSS for preliminary analyses, including data screening, assessment of missing values, and detection of outliers. Both probability–probability and quantile–quantile plots were examined, and no univariate outliers were identified, confirming the suitability of the dataset for further analysis. Reliability of the questionnaire was assessed using Cronbach’s alpha, which demonstrated excellent internal consistency well above

the commonly accepted threshold of 0.90, indicating very high reliability. Sampling adequacy and factorability of the data were evaluated using the Kaiser–Meyer–Olkin (KMO) measure and Bartlett’s test of sphericity, both of which confirmed that the data were appropriate for factor and structural analyses. Finally, structural equation modeling based on partial least squares was conducted using SmartPLS software. PLS-SEM was selected due to its suitability for exploratory model development, its robustness with complex models and smaller sample sizes, and its ability to simultaneously assess measurement and structural models (24). Path analysis was performed to test the hypothesized relationships among latent constructs, with significance levels evaluated to confirm the validity of the proposed electronic sports entrepreneurship model in tourism.

## Findings and Results

This section presents the empirical findings derived from the analysis of the collected data and the testing of the proposed conceptual and structural model. The results are reported sequentially, beginning with descriptive statistics of the study constructs, followed by exploratory factor analysis, correlation analysis, nonparametric tests for ranking constructs, and finally the results of variance-based structural equation modeling using partial least squares, including mediation analysis and the final validated model. Together, these findings provide a comprehensive statistical foundation for evaluating the proposed electronic model of sports entrepreneurship in tourism based on the Business Model Canvas.

**Table 1. Descriptive Statistics of Research Constructs**

Construct	Mean (M)	Standard Deviation (SD)
BMC	3.84	0.61
SET	3.97	0.58
CSM	3.88	0.64
NSP	3.72	0.66
CRM	4.12	0.55
ACT	4.01	0.57
IAD	3.69	0.63
CLF	3.95	0.59
ECF	4.08	0.56
BLV	3.54	0.68
STF	4.06	0.54
TRU	4.10	0.52
EPD	3.90	0.60

BMC = Business Model Canvas; SET = Sports Entrepreneurship in Tourism; CSM = Consumer; NSP = Native Sport; CRM = Customer Relationship Management; ACT = Activities; IAD = Internet Advertisement; CLF = Cultural Factors; ECF = Economic Factors; BLV = Believability; STF = Satisfaction; TRU = Trust; EPD = Electronic Pattern Design (target construct).

The descriptive results indicate that the mean values of all constructs are above the scale midpoint, suggesting generally positive perceptions among respondents regarding the dimensions of sports entrepreneurship in tourism, the Business Model Canvas, and the electronic model design. Constructs related to customer relationship management, trust, and electronic configuration factors exhibited comparatively higher mean scores, reflecting their perceived importance in the studied context.

**Table 2. Exploratory Factor Analysis (Total Variance Explained)**

Component	Eigenvalue	% of Variance	Cumulative %
1	16.153	31.064	31.064
2	3.506	6.743	37.806
3	2.458	4.727	42.533
4	2.046	3.934	46.467
5	1.952	3.753	50.221
6	1.660	3.192	53.412

7	1.541	2.964	56.376
8	1.471	2.829	59.205
9	1.368	2.631	61.836
10	1.289	2.479	64.316
11	1.281	2.464	66.780
12	1.231	2.367	69.147
13	1.104	2.124	71.271
14	1.020	1.961	73.232

Exploratory factor analysis based on eigenvalues greater than one revealed that the measurement items could be meaningfully summarized into 14 underlying factors. These factors jointly explained 73.23% of the total variance, exceeding the commonly accepted cumulative variance threshold of 65%. This result indicates a strong dimensional structure and confirms that the extracted factors adequately represent the observed variables, making further rotation or dimensional adjustment unnecessary.

Following factor extraction, mean scores for the observed variables were aggregated to form latent constructs, and Pearson correlation coefficients were computed among these constructs. The results showed that all constructs were significantly and positively correlated with one another, with significance levels below 0.05. This finding confirms the existence of meaningful associations among the dimensions of the proposed model and supports proceeding to more advanced multivariate analyses.

**Table 3. Normality Tests (Kolmogorov–Smirnov and Shapiro–Wilk)**

Construct	KS Sig.	SW Sig.
BMC	0.000	0.000
SET	0.000	0.000
CSM	0.000	0.000
NSP	0.000	0.000
CRM	0.000	0.000
ACT	0.000	0.000
IAD	0.000	0.000
CLF	0.000	0.000
ECF	0.000	0.000
BLV	0.000	0.000
STF	0.000	0.000
TRU	0.000	0.000
EPD	0.000	0.000

The Kolmogorov–Smirnov and Shapiro–Wilk tests were used to examine the normality of the data distributions. Although the significance values were below 0.05, indicating deviations from strict normality, the results were considered acceptable given the large sample size and the robustness of variance-based PLS-SEM to non-normal data. Consequently, the use of nonparametric tests and PLS-SEM was justified.

**Table 4. Friedman and Kendall Tests**

Test	Statistic	df	Sig.
Friedman Chi-Square	320.167	12	0.000
Kendall's W	0.133	12	0.000

The Friedman and Kendall nonparametric tests were conducted to rank the relative importance of the constructs. The Friedman test yielded a significant chi-square value, indicating statistically significant differences among the ranked constructs. Kendall's coefficient of concordance ( $W = 0.133$ ) suggests that more than 13% agreement exists among respondents' rankings, which is acceptable in behavioral and managerial research. These findings confirm that respondents were able to meaningfully distinguish the relative importance of the constructs.

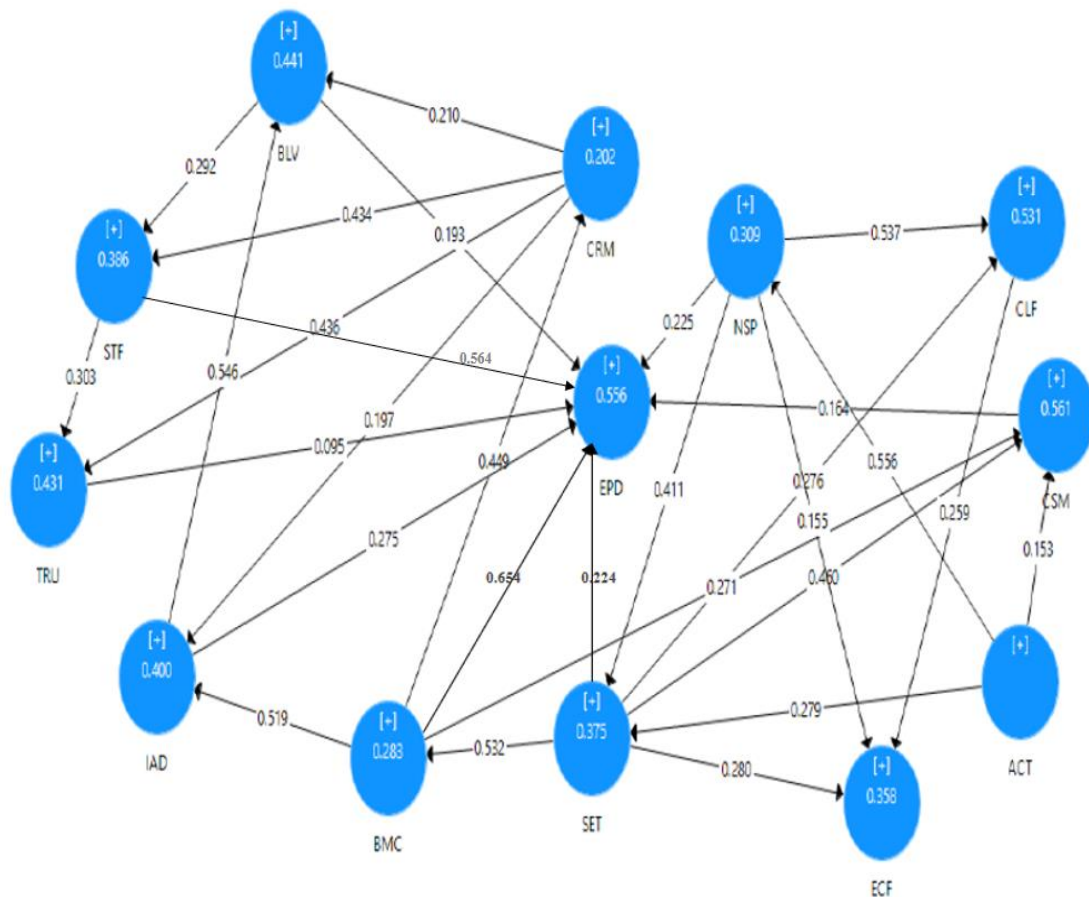
**Table 5. Mean Rank of Constructs**

Construct	Mean Rank
CRM	8.60
TRU	8.42
ECF	8.32
STF	8.18
CLF	7.86
ACT	7.74
SET	7.04
CSM	6.73
BMC	6.13
EPD	5.90
NSP	5.80
IAD	5.62
BLV	4.64

The ranking results show that customer relationship management achieved the highest mean rank, followed by trust, electronic configuration factors, and system technical features. This pattern highlights the central role of customer-oriented and relational dimensions in the successful design of an electronic sports entrepreneurship model in tourism.

Structural equation modeling using partial least squares was then performed to test the hypothesized relationships among constructs. The initial structural model included 38 hypotheses. Based on path coefficient thresholds, nine hypotheses with path coefficients below 0.10 were removed, and 29 hypotheses remained supported. The coefficient of determination for the endogenous constructs indicated that the model explained approximately 55% of the variance, demonstrating satisfactory explanatory power. All retained path coefficients were positive, indicating the absence of spurious or collinearity-driven effects.





**Figure 1. Structural Model with Beta Values**

The importance–performance matrix analysis further revealed that the advertising construct occupied the most critical position in terms of high importance relative to performance. This finding underscores the strategic role of web-based advertising and digital promotional content in electronic sports entrepreneurship within the tourism sector, particularly in competitive digital markets.

Mediation analysis showed that the Business Model Canvas played a significant mediating role between sports entrepreneurship in tourism and electronic model design. T-values for all direct and indirect paths exceeded the critical thresholds of 1.96 and 2.57, confirming mediation effects at the 95% and 99% confidence levels. This result validates the core theoretical premise of the study that the Business Model Canvas functions as a key transmission mechanism translating entrepreneurial activities into an effective electronic system design.



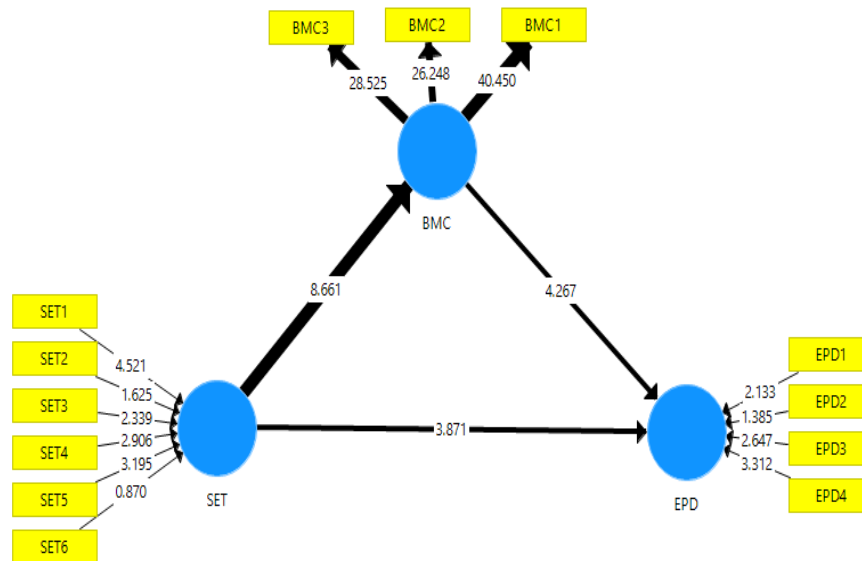


Figure 2. Mediation Model

Table 6. Supported Hypotheses in the Final Model

Path	T-Value	P-Value
ACT → CSM	2.073	0.038
ACT → NSP	10.251	0.000
ACT → SET	3.700	0.000
BLV → EPD	3.812	0.022
BLV → STF	4.089	0.000
BMC → CRM	7.216	0.000
BMC → CSM	3.639	0.000
BMC → EPD	4.672	0.000
BMC → IAD	8.980	0.000
CLF → ECF	3.937	0.011
CRM → BLV	2.130	0.006
CRM → IAD	2.697	0.000
CRM → STF	6.823	0.000
CRM → TRU	6.232	0.029
CSM → EPD	2.112	0.000
IAD → BLV	6.995	0.000
IAD → EPD	2.820	0.000
NSP → CLF	7.198	0.000
NSP → SET	5.684	0.000
SET → BMC	8.661	0.000
SET → CLF	4.595	0.000
SET → CSM	6.802	0.000
SET → ECF	3.891	0.000
SET → EPD	3.871	0.000
STF → TRU	5.495	0.000
TRU → EPD	2.299	0.000

In the final stage, two additional hypotheses failed to meet the minimum T-value threshold and were removed, resulting in a final model with 27 supported hypotheses. The strength, consistency, and statistical significance of these paths confirm the robustness, precision, and practical usefulness of the final electronic sports entrepreneurship model in tourism, providing a solid empirical basis for system implementation and managerial application.



The present study aimed to design and empirically validate an electronic model of sports entrepreneurship in tourism based on the Business Model Canvas (BMC) within the Iranian context. The findings provide strong empirical support for the proposed conceptual framework and demonstrate that sports entrepreneurship in tourism can be effectively operationalized as an integrated, web-based intelligent system when grounded in a coherent business model logic. Overall, the results confirm that the interaction among entrepreneurial activities, digital infrastructure, customer-oriented mechanisms, and the BMC creates a robust explanatory structure capable of capturing the complexity of contemporary sports tourism ventures.

The descriptive findings showed that all latent constructs achieved mean values above the scale midpoint, indicating a generally favorable perception of electronic sports entrepreneurship dimensions among respondents. In particular, constructs related to customer relationship management, trust, satisfaction, and economic and technical factors exhibited relatively higher mean scores. This pattern underscores the centrality of customer-centric and value-creation mechanisms in sports tourism entrepreneurship, which is consistent with the service-dominant nature of tourism and the experiential characteristics of sport-based offerings (5, 9). These findings align with prior

research emphasizing that entrepreneurial success in sport and tourism increasingly depends on the ability to build trust-based relationships and deliver consistent digital value to consumers (2, 6).

The exploratory factor analysis revealed a well-structured measurement model in which 14 underlying factors explained more than 73% of the total variance. This high cumulative variance indicates that the identified constructs comprehensively represent the domain of electronic sports entrepreneurship in tourism and confirms the adequacy of the conceptualization derived from the literature and expert validation. The successful dimensional reduction also supports the argument that complex entrepreneurial systems can be meaningfully decomposed into interrelated yet distinct components, as suggested in prior sport entrepreneurship and business model research (8, 15). Importantly, the absence of a need for further factor rotation suggests that the theoretical foundations of the model were sufficiently strong, reinforcing the methodological rigor of the construct development process.

Correlation analysis demonstrated that all constructs were positively and significantly associated with one another. This result indicates that the components of the electronic sports entrepreneurship system do not operate in isolation but rather function as a mutually reinforcing network. Such interconnectivity is consistent with systemic views of entrepreneurship, which conceptualize entrepreneurial ventures as dynamic configurations of resources, activities, relationships, and institutional contexts (1, 17). In the context of sports tourism, this interconnectedness is particularly salient, as value creation emerges from the simultaneous alignment of digital platforms, sport activities, cultural factors, and customer engagement mechanisms (3, 19).

The results of the Friedman and Kendall nonparametric tests provided further insight into the relative importance of the constructs. Customer relationship management emerged as the highest-ranked construct, followed closely by trust, economic factors, system technical features, and cultural factors. This ranking highlights that while technological infrastructure is essential, relational and perceptual dimensions play an even more decisive role in shaping the effectiveness of electronic sports entrepreneurship systems. This finding strongly corroborates earlier studies that emphasize the strategic role of relationship management, credibility, and trust in sport and tourism entrepreneurship (5, 9). It also aligns with research conducted in the Iranian context, which points to customer trust and relational capital as critical success factors in entrepreneurial tourism organizations (12, 13).

The structural equation modeling results provide the strongest empirical support for the proposed model. Using variance-based PLS-SEM, the study confirmed that the majority of hypothesized paths were statistically significant and meaningful, with the final model explaining approximately 55% of the variance in the target construct, electronic pattern design. This level of explanatory power is considered substantial in entrepreneurship and management research, particularly for complex, multi-construct models (1, 2). The absence of negative or spurious path coefficients further indicates that the model is free from serious multicollinearity or specification errors, enhancing confidence in its internal validity.

One of the most important findings concerns the mediating role of the Business Model Canvas. The mediation analysis demonstrated that sports entrepreneurship in tourism exerts both direct and indirect effects on electronic pattern design, with the indirect effect transmitted through the BMC being particularly strong. This result empirically validates the theoretical proposition that the BMC functions as a critical translation mechanism through which entrepreneurial intentions, resources, and activities are transformed into an operational electronic system. This finding extends prior conceptual work that has advocated the BMC as a strategic design tool in sport and tourism contexts but has rarely tested its mediating role empirically (14, 15). It also supports recent calls for integrating business model logic more explicitly into digital entrepreneurship research (4, 18).

The importance–performance matrix analysis yielded another noteworthy insight by identifying internet-based advertising as the most critical construct in terms of importance relative to performance. This finding highlights the pivotal role of digital promotion and online visibility in electronic sports tourism entrepreneurship. In highly competitive digital environments, advertising content, platform presence, and targeted communication strategies act as key drivers of customer acquisition and engagement. This result is consistent with earlier studies emphasizing the transformative impact of digital marketing and online platforms on tourism demand and entrepreneurial scalability (3, 11). In the Iranian context, where international visibility and market access can be constrained, effective digital advertising becomes even more crucial for entrepreneurial success (12, 23).

The final validated model retained 27 statistically supported hypotheses, indicating a high level of theoretical coherence and empirical robustness. The confirmed paths reveal a logical progression from entrepreneurial activities and system features to relational outcomes such as trust and satisfaction, and ultimately to effective electronic pattern design. This structure aligns well with contemporary views of sport entrepreneurship as an innovation-driven, customer-oriented process embedded within broader digital and institutional ecosystems (5, 7). Moreover, the results resonate with studies highlighting the importance of resilience, adaptability, and integrated strategic orientation in tourism entrepreneurship, particularly in uncertain or constrained environments (10, 20).

Taken together, the findings of this study contribute to the literature in several important ways. First, they provide empirical evidence supporting the conceptualization of sports entrepreneurship in tourism as an electronic, system-based phenomenon rather than a collection of isolated activities. Second, they demonstrate the central mediating role of the Business Model Canvas in linking entrepreneurial dynamics to digital system design. Third, they offer context-specific insights into the Iranian sports tourism sector while remaining theoretically relevant to broader international discussions on sport entrepreneurship, digitalization, and tourism development (1, 2). As such, the study advances both theory and practice by bridging gaps between entrepreneurship research, business model innovation, and electronic system design.

Despite its contributions, this study has several limitations that should be acknowledged. First, the research employed a cross-sectional design, which limits the ability to draw causal inferences or examine dynamic changes in sports tourism entrepreneurship over time. Second, data were collected through self-reported questionnaires, which may be subject to common method bias and perceptual inaccuracies. Third, although the sample size exceeded methodological requirements, the study was conducted within a single national context, which may constrain the generalizability of the findings to other cultural or institutional settings. Finally, the model focused primarily on managerial and system-level factors, leaving out potential macro-level influences such as regulatory changes or geopolitical dynamics.

Future research could build on this study by adopting longitudinal designs to examine how electronic sports entrepreneurship models evolve over time and respond to environmental shocks or technological change. Comparative studies across different countries or regions would also be valuable in assessing the contextual robustness of the proposed model. Additionally, future studies could integrate qualitative methods, such as in-depth interviews or case studies, to gain deeper insight into the lived experiences of sports tourism entrepreneurs. Expanding the model to include sustainability, environmental impact, or artificial intelligence capabilities may further enrich understanding of next-generation electronic entrepreneurship systems.

From a practical perspective, policymakers and entrepreneurs can use the validated model as a strategic blueprint for designing and implementing electronic sports tourism ventures. Emphasis should be placed on

strengthening customer relationship management, trust-building mechanisms, and digital advertising strategies. Tourism and sport organizations are encouraged to adopt the Business Model Canvas not only as a planning tool but also as a continuous monitoring and innovation framework. Investing in digital skills, integrated platforms, and data-driven decision-making can enhance competitiveness and resilience, particularly in complex and volatile market environments.

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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

All ethical principles were adhered in conducting and writing this article.

### 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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