

ORIGINAL ARTICLE**Identifying Factors Affecting the Development of Online Services in Sports Events****Seyedeh Tahere Mousavirad^{1*}, Jalil Mohammadi Komasi²**

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EXTENDED A B S T R A C T**Introduction**

In the digital era, online service platforms have undergone remarkable growth, driven by billions of users and rapid technological advancement. These innovations have reshaped business models, accelerated e-commerce expansion, and increasingly replaced traditional retail systems. By 2017, approximately 1.66 billion individuals had purchased services online. The sector's growth stems from internet penetration, heightened e-commerce awareness, and the migration of vendors toward digital marketplaces. Global e-commerce turnover was projected to exceed \$4 trillion by 2020, with online services accounting for over 40%. Perceived post-purchase benefits-such as price and service comparison, time efficiency, and convenience-further stimulate demand. Sustainable development depends on service quality, security, and customer satisfaction, which in turn foster loyalty and retention. In the sports industry, online services have transformed event management, fan engagement, and marketing. Nevertheless, adoption in Iran remains limited. This study investigates key drivers of online service development in sports events to enhance quality, user experience, and satisfaction, offering strategic insights for organizations, sponsors, and providers.

Methodology

The present study is applied in purpose and employs a mixed exploratory method, conducted through field research. In the qualitative phase, the population consisted of experts and university professors in sports event management with teaching, authorship, or publication experience. Sampling reached theoretical saturation at 12 participants and extended to 14 for greater credibility and comprehensive component coverage. This deliberate extension helped capture nuanced perspectives that might otherwise have been overlooked. In the quantitative phase, the population included managers, organizers, and expert staff of national and international sports events in Tehran. Using G*Power for sample size in structural equation modeling, 110 individuals were selected via cluster sampling. Qualitative data came from semi-structured interviews, analyzed through sequential exploratory thematic analysis. Validity and reliability followed Guba and Lincoln's (2000) criteria: credibility, transferability, dependability, and confirmability. Credibility was achieved via prolonged engagement, triangulation, peer debriefing, disconfirming evidence searches, and researcher reflexivity. Transferability relied on detailed interviewee demographics-gender, education, discipline, professional tenure, and operational domain. Dependability involved dual note-taking by the researcher and co-interviewer, with consented audio recordings transcribed verbatim. Confirmability

was maintained through systematic documentation of all data collection, interpretation, and analytical stages. Interview protocol reliability was assessed via inter-coder agreement, yielding an overall coefficient of 0.86 across three interviews (85%, 91%, and 81% agreement). Such rigorous inter-coder validation strengthened confidence in the thematic coding framework. The quantitative tool was a researcher-developed questionnaire with 36 items across six factors, drawn from qualitative results and prior literature, used to weight and validate the model. Construct validity was examined through exploratory factor analysis in SmartPLS, with internal consistency verified by Cronbach's alpha. All alphas exceeded 0.7, indicating strong reliability. Convergent validity was supported by AVE values above 0.4 for all constructs. Divergent validity, per Fornell-Larcker criterion, was confirmed as diagonal AVE square roots surpassed inter-construct correlations. Thus, the measurement model demonstrated robust validity and reliability, providing a solid foundation for structural analysis

Findings

The research findings revealed that in the qualitative section, all participants held doctoral degrees, while in the quantitative section, 80% of respondents had postgraduate education. In both groups, the majority were male; in the qualitative part, 100% were married, and in the quantitative part, over 75% were married, with the average age of all individuals in both groups falling between 31 and 50 years. Based on the interviews, 36 initial components were extracted and categorized into six key factors influencing the development of online services for sports events. These factors were subsequently refined by reviewing library resources and incorporating insights from managers and experts, with duplicates and similar items removed. The final factors encompassed customer experience improvement, electronic payment, communication and interaction development, electronic services development, infrastructure development, and electronic marketing. Customer experience improvement included components such as accurately understanding the target audience and consumer behavior, gathering customer feedback, ease of use, attractive user interface design, fast page loading, multilingual support, high security and speed, privacy protection, and site appeal. Electronic payment covered online transactions, bank card payments, electronic wallets, payments in various currencies, and financial security. Communication and interaction development focused on facilitating connections between spectators and athletes, online chat, social networks, surveys, online games, and website content quality. Electronic services development involved online ticket sales, ancillary products and services, enhancing online service quality, creating electronic content, online support, and sports tourism services. Infrastructure development comprised increasing internet speed, powerful servers, security enhancements, adopting cutting-edge technologies, utilizing artificial intelligence and the Internet of Things, and implementing blockchain. Electronic marketing addressed digital marketing, social marketing, advertising on social networks, digital branding, and value creation. In the structural equation model, relationships between latent and observed variables, as well as among latent variables, were examined.

In the measurement model, standardized coefficients for all sub-components exceeded 0.4, and t-statistics for all variables surpassed 1.96,

confirming significance at the 0.05 level. Factor loadings ranged from 0.174 for customer experience improvement to 0.186 for infrastructure development. Construct reliability was supported by Cronbach's alpha values and path coefficients above 0.2, indicating consistent respondent interpretations of the questions. The Q² predictive relevance criterion demonstrated strong model predictiveness; customer experience improvement scored the highest at 0.72, while electronic services development was lowest at 0.36. The average communality across constructs was 0.925, and the GOF value of 0.339 indicated a reasonably strong overall fit. The Friedman test yielded a chi-square of 330.94 with a significance level of 0.001, confirming meaningful differences in rankings. Customer experience improvement ranked first with a mean of 5.56, followed by communication and interaction development at 4.22 (second), electronic services development at 3.88 (third), infrastructure development at 3.56 (fourth), electronic marketing at 2.40 (fifth), and electronic payment at 1.38 (sixth). These results underscore the primacy of customer experience and interaction in advancing online services for sports events, with the proposed model exhibiting high validity and fit

Discussion and Conclusion

In recent decades, advancements in communication technologies have turned online services into an essential part of sports events. These services enhance interaction, draw larger audiences, and elevate user experience, greatly contributing to the sector's expansion. The present study analyzed 36 initial codes and identified six critical factors for developing online services in sports events: improving customer experience (1st) through precise understanding of user needs, engaging interfaces, high speed, robust security, and privacy protection; communication and interaction (2nd) using online chat, social networks, and interactive games; electronic services (3rd), including ticket sales, rich content provision, and online support; infrastructure development (4th) via high-speed internet, artificial intelligence, and blockchain technology; electronic marketing (5th) with digital advertising, branding efforts, and value creation to build audience loyalty; and electronic payment (6th) offering secure transactions through bank cards and digital wallets. The results are consistent with studies by Elahiyari, Kiani, and Tabaeian. Achieving success requires balanced focus on customer experience, interactions, and electronic services. Managers should develop long-term strategies and create professional websites and applications to increase revenue and enhance event attractiveness.

	Main Factors (Dimensions)	Operational Components of the Research
1	Enhancement of Customer Experience	Understanding the target audience and consumer behavior; customer feedback mechanisms; ease of use; aesthetically appealing user interface design; webpage loading speed; multilingual support systems; secure and high-speed accessibility; privacy protection measures; overall website attractiveness.
2	Electronic Payment Systems	Online financial transactions; bank card payments; utilization of electronic wallets; cryptocurrency-based payments; and financial security assurance.
3	Development of Communication and Interaction	Establishing communication between spectators and athletes; facilitating online user chats; creation of social network platforms; implementation of online surveys; development of interactive online games; and improvement of website content quality.
4	Development of Electronic Services	Online ticketing systems; online sales of auxiliary products and services; improvement of online service quality; production of digital content; online customer support; and provision of sports tourism services.
5	Infrastructure Development	Enhancement of internet speed; deployment of high-performance servers; strengthening cybersecurity measures; adoption of cutting-edge technologies; integration of artificial intelligence (AI) and the Internet of Things (IoT); and implementation of block chain technology.
6	Electronic Marketing Strategies	Digital marketing initiatives; social marketing approaches; advertising through social media platforms; digital branding processes; and value creation mechanisms.

KEYWORDS

Online Sports Services, Customer Experience, Electronic Payment, Fan Interaction, Digital Infrastructure, E-Marketing, PLS-SEM, Sports Events.

