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Innovation in Iranian Sports Companies through Digital Financial Services

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Abstract

This study investigates the role of digital financial services in enhancing innovation within Iranian sports companies. The research follows a descriptive survey method with a quantitative approach and employs Structural Equation Modeling (SEM) for data analysis. The statistical population includes senior managers, financial managers, and IT managers of sports companies, as well as financial and technology experts in sports clubs and startups. The sampling method was stratified random sampling, and the sample size was determined as 200 participants using Cohen's method, considering 10 latent variables in the model. Data collection was carried out through two standardized questionnaires with validated content and face validity confirmed by experts. Reliability was assessed using Cronbach's alpha. The first questionnaire, digital financial services assessment, consists of 15 items across five components (digital financial technology infrastructure, digital payment services, digital banking, digital investment, and digital financial innovation). The second questionnaire, Innovation Assessment in Sports Companies, includes 15 items across five components (product innovation, process innovation, organizational innovation, marketing innovation, and strategic innovation). The Cronbach's alpha scores were 0.899 for innovation and 0.794 for digital financial services. The findings reveal that digital financial services have a significant impact on various dimensions of innovation, including product, process, organizational, marketing, and strategic innovation. These services enhance transparency, reduce costs, and improve access to financial resources, thereby alleviating financial constraints and fostering innovation capabilities within sports companies.

Keywords: Digital financial services, Organizational innovation, Iranian sports industry, Financial transparency, New revenue models.

1 | Introduction

In the era of the digital economy, digital finance—resulting from the integration of information technology and financial services—has emerged as a key driver of high-quality and sustainable economic development

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[1]. This field, through enhancing the operational efficiency of financial industries, reducing transaction costs, and expanding service coverage, has created an innovative platform for transformation across various sectors, including the sports industry [2]. From a theoretical perspective, digital finance significantly impacts financial inclusion, consumption, and investment, directly accelerating economic growth and corporate innovation [3], [4]. However, this system also poses challenges, such as cybersecurity threats and data privacy concerns [5].

Despite its economic and social significance, the sports industry faces barriers such as a lack of innovation and limitations in business models, hindering its sustainable growth [6]. Studies have demonstrated that digital finance can effectively mitigate these limitations, providing greater access to financial resources for sports companies [7]. Thus, examining the role of digital finance in the sports industry can offer practical solutions to enhance innovation. Digital finance impacts corporate innovation through three primary channels: 1) reducing information asymmetry between companies and financial service providers, which improves resource allocation and facilitates innovation processes [8], 2) lowering the costs of financial services, thereby creating additional financial resources for innovation investments [9], and 3) increasing access to financial services, enabling new opportunities for inclusive innovation [10].

Moreover, digital finance, by alleviating financial constraints—particularly for small and medium-sized enterprises—creates greater room for innovation. Studies have emphasized that reducing these constraints not only enhances the level of innovation but also paves the way for capitalizing on market opportunities [11], [12]. Financial constraints are among the key factors limiting innovation in sports companies [13]. These constraints, by reducing access to financial resources and increasing investment costs, can hinder companies' ability to execute innovative projects. According to the pecking order theory, financial constraints can have a significant negative impact on the intensity and scale of innovation [14]. In this context, digital finance, by increasing transparency and reducing informational costs, is recognized as a tool to alleviate these constraints [15]. This study focuses on the Iranian sports industry, examining the role of digital finance in enhancing innovation and mitigating financial constraints. The primary objective of this research is to provide a theoretical and practical framework for better leveraging the innovation potential in the sports industry through the use of digital financial services.

2 | Methodology

This study is applied in terms of its objective and descriptive survey in terms of its nature and method. It is a cross-sectional study conducted with a quantitative approach and employs Structural Equation Modeling (SEM) for data analysis. The statistical population includes senior managers, financial managers, and IT managers of sports companies, as well as financial and technology experts in sports clubs and managers of sports-related startups across the country. The sampling method is stratified random sampling, and the sample size was determined using Cohen's method for SEM. Based on Cohen's recommendation of selecting 20 samples per latent variable and considering the presence of 10 latent variables in the model, the sample size was set at 200 participants. The criteria for selecting participants included having a minimum of three years of work experience, familiarity with digital financial technologies, and experience working in sports companies.

Data collection tools

The data were collected using two validated questionnaires, the digital financial services assessment questionnaire [16], consisting of 15 items and 5 components (digital financial technology infrastructure, digital payment services, digital banking, digital investment, and digital financial innovation), and the Innovation Assessment in Sports Companies questionnaire [17], comprising 15 items and 5 components (product innovation, process innovation, organizational innovation, marketing innovation, and strategic innovation). Both questionnaires included closed-ended questions measured on a Likert scale. Experts confirmed their content and face validity, and their reliability was assessed using Cronbach's alpha coefficient.

Data analysis

The data were analyzed using SPSS25 and SmartPLS3 statistical software. Descriptive statistics (mean, standard deviation) and inferential statistics (SEM) were used to examine the relationships among variables.

3 | Findings

Initially, descriptive statistical methods were used to analyze the data. Next, the normality test of the dependent variable was conducted. For model analysis, panel data regression was applied. It is important to note that the statistical data were analyzed using EViews 10 software.

Table 1. Demographic characteristics of participants (N = 200).

Demographic Factors	Frequency (n)	Percentage (%)
Gender		
Male	140	70.0
Female	60	30.0
Age		
25-35 years	60	30.0
36-45 years	85	42.5
46-55 years	40	20.0
Above 55 years	15	7.5
Education Level		
Bachelor's degree	70	35.0
Master's degree	90	45.0
Doctoral degree	40	20.0
Work Experience		
3-5 years	50	25.0
6-10 years	80	40.0
11-15 years	45	22.5
Above 15 years	25	12.5
Organization Type		
Sports clubs	60	30.0
Sports equipment companies	50	25.0
Sports federations	40	20.0
Sports startups	30	15.0
Others	20	10.0

Based on the demographic characteristics presented in *Table 1*, the highest percentages were observed in several categories. In terms of gender, males dominated the sample with 70% of participants. Age-wise, the 36-45 years age group represented the largest proportion at 42.5% of the total sample. Regarding educational background, 45% of participants held a Master's degree, making it the most prevalent education level. For work experience, the 6-10 years range accounted for 40% of respondents, indicating a mid-level professional experience group. Organizational representation showed that sports clubs were the most represented, comprising 30% of the sample. These percentages highlight the predominantly male, mid-career, highly educated professionals from sports-related organizations who participated in the study.

Table 2. One-sample kolmogorov-smirnov test (normality test).

		Digital Financial Services	Innovation
N		200	200
Normal Parameters[a,b]	Mean	3.4250	3.4750
	Std. Deviation	0.68051	0.79986
Most Extreme Differences	Absolute	0.094	0.089
	Positive	0.081	0.048
	Negative	-0.094	-0.089
Test statistic		0.094	0.089
Asymp. Sig. (2-tailed)		0.000[c]	0.001[c]

a. Test distribution is normal, b. Calculated from data, c. Lilliefors significance correction.

According to *Table 2* results of the Kolmogorov-Smirnov test, the distribution of variables revealed statistically significant findings. The test showed that all variables have a significance level (p-value) below 0.05, which indicates a non-normal distribution. Consequently, this means that the research data does not follow a normal distribution, and therefore, non-parametric statistical methods should be employed for further analysis. Non-parametric tests are more appropriate in this scenario as they do not assume a normal distribution of data and are less sensitive to outliers and extreme values.

Table 3. Construct reliability and validity.

	Cronbach's Alpha	Rho_A	Composite Reliability	Average Variance Extracted (AVE)
Innovation	0.899	0.901	0.925	0.712
Digital financial services	0.794	0.794	0.857	0.546

Table 3 shows acceptable reliability and validity for innovation and digital financial services, with Cronbach's Alpha, rho_A, and Composite Reliability values above 0.7. The AVE for Innovation (0.712) confirms strong convergent validity, while digital financial services (0.546) meets the minimum threshold. Overall, the constructs are reliable and valid for structural modeling.

Table 4. Fornell-larcker criterion.

	Innovation	Digital Financial Services
Innovation	0.844	
Digital financial services	0.703	0.739

Table 4, based on the fornell-larcker criterion, confirms discriminant validity as the square root of AVE for each construct (innovation: 0.844, digital financial services: 0.739) exceeds its correlation with the other construct (0.703). This indicates that the constructs are distinct and well-differentiated.

$$\mathrm{GOF} = \sqrt{\overline{\mathrm{Communatiy}} \times \overline{\mathrm{R}^2}} = \sqrt{0.629 \times 0.494} = 0.557.$$

The Goodness of Fit (GOF) value for the model is 0.557, calculated using the commonalities and R^2 values. A GOF value above 0.5 typically indicates a moderate to good model fit, suggesting that the *Fig. 1* adequately explains the data.

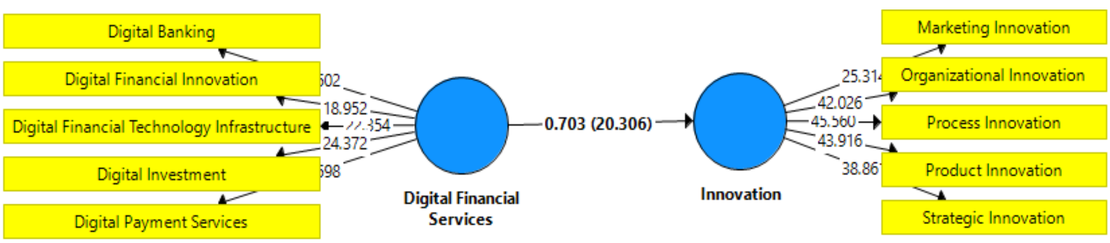

Fig. 1. The impact of digital financial services on innovation in iranian sports companies.

Table 5. Mean, STDEV, T-values, P-values.

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Digital Financial Services -> Innovation	0.703	0.706	0.035	20.306	0.000

Table 5 shows the relationship between digital financial services and innovation in Iranian sports companies. The path coefficient (original sample) is 0.703, indicating a strong positive effect. The T-value (20.306) is significantly higher than the critical value (typically 1.96 for 95% confidence), and the p-value (0.000) confirms statistical significance. This implies that digital financial services have a substantial and meaningful impact on fostering innovation in these companies.

4 | Conclusion

The utilization of digital financial services has a significant impact on enhancing the level of innovation in Iranian sports companies. Increased adoption of digital financial tools (such as online payment platforms, digital banking, smart investments, and intelligent financial management systems) in these companies leads to the expansion of their innovative capabilities in various areas, including management, marketing, customer services, and the development of sports products. In the current digital era, Iranian sports companies face numerous challenges regarding competition and innovation.

Digital financial services, as a strategic tool, can play a pivotal role in transforming these companies. These services enable intelligent financial resource management, transparency in transactions, and the creation of new revenue models, which can pave the way for innovation in organizational structures. From a managerial perspective, the use of digital financial tools helps sports companies allocate their resources more precisely. Intelligent financial dashboards and data-driven analytics facilitate more accurate decision-making, enabling managers to identify and manage potential risks. This approach can lead to the creation of innovative solutions in various areas, including sports marketing, attracting sponsors, and developing new products.

In the realm of marketing and customer relations, digital financial services create new opportunities for sports companies. Online payment platforms, digital fan cards, and smart loyalty systems can significantly enhance the customer experience and create opportunities for generating new revenue streams. This innovative approach not only increases fan loyalty but also enables the analysis of customer behavior and the provision of personalized services. On the other hand, the implementation of digital financial services can act as a facilitator for innovative investments in sports clubs and companies.

The ability to attract small investors through crowdfunding platforms, enhance transparency in financial flows, and reduce transaction costs are among the benefits of this approach. Additionally, these services can help clubs manage their financial resources more intelligently and invest in areas of innovation. The results of the research indicate that digital financial services play a transformative role in the ecosystem of Iranian sports companies. These services, beyond being a mere financial tool, act as a strategic driver for innovation, expanding organizational capabilities in various dimensions. Digital transformation in the financial sector offers the potential for structural and behavioral changes within sports companies.

From a strategic perspective, the impact of digital financial services on innovation is so significant that it can challenge traditional business models. Financial transparency, data-driven analytics, and predictive capabilities lead to the creation of new approaches in management, marketing, and stakeholder relations. This highlights the strategic importance of digital transformation in the sports industry even more clearly. The results indicate that digital financial services are a catalyst for enhancing customer experiences and creating new revenue models. Personalization capabilities, ease of access, and transparency lead to increased fan loyalty and value creation within the sports service chain. This approach demonstrates that financial innovation, beyond its traditional concept, has become a strategic factor in organizational success.

Ultimately, the impact of digital financial services on innovation in Iranian sports companies represents a paradigmatic shift. These services act not only as a financial tool but also as a strategic driver for creativity, innovation, and competitiveness. The transformation in management approaches, marketing, and customer relations underscores the strategic importance of digital transformation in the current era. The innovation of this study in examining the relationship between digital financial services and innovation in Iranian sports companies can be explained through three key aspects: First, this study is the first to comprehensively and specifically explore the relationship between digital financial services and innovation in Iranian sports companies, whereas previous studies have generally addressed financial or sports innovation separately. Second, by presenting a novel framework, this research introduces digital financial services as more than just a financial tool, positioning them as a strategic driver for innovation in sports companies and challenging the traditional view of financial management in the sports sector. Third, this study is the first to examine the potential of digital financial services for strategic innovation in Iranian sports companies at the national level, offering a new perspective on digital transformation in this field.

In line with innovation in Iranian sports companies through the use of digital financial services, it is recommended that, first, the establishment of a comprehensive digital financial platform for sports clubs and organizations be prioritized. This integrated digital ecosystem should be capable of managing all financial processes, including online ticket sales, fan memberships, attracting sponsors, and managing ancillary revenues. The platform should be designed with advanced analytical capabilities to enable intelligent and transparent decision-making for senior club managers. Additionally, the creation of a digital fan card with a loyalty points system and incentive benefits is another essential feature of this platform. Second, it is advised that the development of digital micro-investment mechanisms in the sports sector be given serious attention.

This requires the establishment of legal and technical infrastructure for launching specialized crowdfunding systems in sports, allowing fans and enthusiasts to make small investments in sports projects and clubs. Such an approach, in addition to providing funding, has the potential to enhance fans' sense of ownership and attachment to the clubs, leading to the creation of sustainable revenues and broader public participation. The main limitation of the questionnaire in the present study is its inability to deeply assess the emotional, psychological, and mental states of respondents in relation to digital financial services. This tool is not capable of accurately recording emotional reactions, stress, anxiety, trust levels, or individuals' subjective perceptions during interactions with financial technologies, as it is limited to capturing superficial and quantitative information. Therefore, it is recommended that future studies adopt a phenomenological approach and semi-structured in-depth interviews to explore the lived experiences of managers and employees in sports companies interacting with digital financial services, allowing for a more comprehensive investigation of the psychological and emotional dimensions of these experiences.

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Author Contributions

Azim Salahi Kojour conceptualized the study, designed the methodology, and conducted the analysis. Abbas Barzegarinegad contributed to the data analysis and interpretation of results. Asiyeh Ahmadi Niyasani supported the preparation of data collection tools and participated in manuscript writing. All authors reviewed and approved the final manuscript.

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Data Availability

The datasets generated and analyzed during the current study are available upon reasonable request from the corresponding author. Access to specific data is subject to confidentiality agreements to protect participant privacy.

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