



# Identifying Factors Influencing the Development of Sports Entrepreneurship with an Emphasis on Sports Startups

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## ABSTRACT

The aim of this research was to identify factors influencing the development of sports entrepreneurship, with an emphasis on sports startups in the country. The research employed a mixed-method approach and was applied in nature. In terms of data collection and information gathering, it was field-based and descriptive-survey research. The statistical population of this study included members of the board of directors of sports startups, experts in the field, and specialists. The research samples were selected purposefully, with 38 participants in the qualitative section and 208 in the quantitative section, based on the research objectives and reaching theoretical saturation. To analyze the interviews conducted and to enhance the accuracy and validity of the analysis, the interviews were fully recorded and then transcribed. The researcher then reviewed and coded each interview individually. Additionally, in the quantitative section, structural equation modeling (SEM) using PLS software was employed. The results of the coding process revealed that the factors influencing the development of sports startups include five components: supportive factors, advertising, technology, market awareness, and culture. In the quantitative section, the identified factors were presented to the research sample in the form of a closed questionnaire. The quantitative results also indicated that the five identified factors have a significant impact on the development of sports startups. The factors identified in this research should receive serious attention from sports managers to foster the growth of sports startups.

**Keywords:** Sports Entrepreneurship, Sports Startups, Development.

## 1. Introduction

Entrepreneurship in sports is a unique domain that encompasses the creation and management of businesses, innovations, and organizations within the sports industry (Ratten 2022, Ratten 2023). As Ratten (2023) explains, sports entrepreneurship involves identifying and exploiting opportunities within the sports context, where entrepreneurs leverage their knowledge and passion for sports to develop new products, services, or business models (Ratten 2023). This emerging field has been recognized for its potential to drive economic growth, enhance social inclusion, and promote innovation (Sánchez-Oliver, Ruíz et al. 2019, Cardella, Hernández-Sánchez et al. 2021). Additionally, sports entrepreneurship has increasingly been linked to sustainable development goals, as entrepreneurs within this sector often address environmental and social challenges alongside economic objectives (Aparicio, Turró et al. 2020).

Sports entrepreneurship is not limited to traditional business ventures but also includes social entrepreneurship, which aims to address social issues through sports-related initiatives (Chen and Lin 2021). Social entrepreneurs in sports often use the power of sports to foster social inclusion, community development, and health promotion (Chen, Chou et al. 2021). For example, Cardella et al. (2021) emphasize the role of sports in promoting social change, particularly among marginalized communities (Cardella, Hernández-Sánchez et al. 2021). This aligns with Ratten's (2019) argument that sports entrepreneurship plays a crucial role in public policy and social responsibility (Ratten 2019). As a result, sports organizations are increasingly incorporating entrepreneurial approaches to address social, environmental, and economic challenges (Constantin, Stănescu et al. 2020).

Innovation is a central theme in sports entrepreneurship, particularly as the sector adapts to the rapidly changing global environment. Innovation in sports can take various forms, including the development of new technologies, business models, and organizational structures (Gancarczyk 2020). Hammerschmidt et al. (2021) highlight the importance of innovation in professional sports organizations, particularly in response to the challenges posed by the COVID-19 pandemic (Hammerschmidt, Durst et al. 2021). The pandemic has accelerated the adoption of

digital technologies in sports, such as virtual events, e-sports, and online fitness platforms (Crespo, Botella-Carrubí et al. 2022). Moreover, Escamilla-Fajardo et al. (2020) argue that the pandemic has also fostered a more entrepreneurial mindset within the sports industry, as organizations and individuals seek new ways to generate revenue and engage with fans (Escamilla-Fajardo, Núñez-Pomar et al. 2020).

Startups in the sports sector are a key driver of innovation and entrepreneurship. These small and medium-sized enterprises (SMEs) often lead the way in developing new products and services, leveraging their agility and creativity to disrupt traditional sports markets (Ahonen 2019). According to Buyrukoğlu (2023), innovation and entrepreneurship are closely intertwined in the sports sector, with startups playing a critical role in driving both economic and social impact (Buyrukoğlu 2023). These startups are not only creating new opportunities for athletes and sports professionals but also addressing broader societal issues such as health, education, and social inclusion (Hammerschmidt 2023). For example, sports startups focused on fitness technology, mental health, and community engagement have gained significant traction in recent years, reflecting the growing demand for socially responsible and innovative solutions in the sports industry (Escamilla-Fajardo, Alguacil et al. 2021).

The sports entrepreneurship ecosystem is a complex network of actors, including entrepreneurs, investors, policymakers, and sports organizations, who collectively shape the development of the industry (Arefi, Bahrololoum et al. 2022). Arefi et al. (2022) emphasize the importance of a dynamic and supportive ecosystem for the growth of sports entrepreneurship, particularly in emerging markets such as Iran. This ecosystem provides the necessary resources, infrastructure, and institutional support for entrepreneurs to thrive. Additionally, government policies and regulations play a significant role in fostering or hindering sports entrepreneurship (Arefi, Bahrololoum et al. 2022). As Ratten and Ferreira (2017) note, the interaction between sports policy and entrepreneurship is critical for the development of new business models and innovations in the sector. Therefore, understanding the dynamics of the sports entrepreneurship ecosystem is essential for promoting sustainable growth and innovation (Ratten and Ferreira 2017).

One of the key challenges faced by sports entrepreneurs is access to funding and resources. Startups in the sports sector often struggle to secure the necessary capital to scale their operations and bring their products or services to market (Corthouts, Zeimers et al. 2021). Crowdfunding has emerged as a popular alternative financing mechanism for sports entrepreneurs, particularly during the COVID-19 pandemic when traditional sources of funding were limited (Crespo, Botella-Carrubí et al. 2022). Crowdfunding platforms allow entrepreneurs to raise funds directly from fans and supporters, providing a more democratic and accessible way to finance their ventures. However, as Crick and Crick (2016) argue, securing long-term funding remains a significant challenge for many sports entrepreneurs, particularly those in niche or emerging markets (Crick and Crick 2016). In addition to financial challenges, sports entrepreneurs must also navigate the competitive and rapidly changing nature of the sports industry. Innovation and adaptability are crucial for success in this environment, as entrepreneurs must continuously evolve their products and services to meet the needs of consumers and stay ahead of competitors (González-Serrano, Jones et al. 2019). The rise of digital technologies has further intensified competition, as sports entrepreneurs now face competition not only from traditional sports organizations but also from tech companies, media platforms, and e-sports (Kamyuka 2023). This has led to a blurring of boundaries between the sports industry and other sectors, creating new opportunities and challenges for sports entrepreneurs (Hammerschmidt, Eggers et al. 2019).

In conclusion, sports entrepreneurship is a rapidly evolving field that encompasses a wide range of business models, innovations, and social initiatives. The intersection of entrepreneurship, innovation, and sustainability in sports presents significant opportunities for economic growth, social inclusion, and environmental stewardship. However, sports entrepreneurs face numerous challenges, including access to funding, competition, and regulatory barriers. To overcome these challenges, a supportive ecosystem that includes government policies, educational programs, and financial resources is essential. The aim of this research was to identify factors influencing the development of sports entrepreneurship, with an emphasis on sports startups Iran.

## 2. Methods and Materials:

### 2.1. Study Design and Participants

This research was designed as an applied study with a mixed-method approach, incorporating both qualitative and quantitative data. The data collection process was descriptive-survey in nature and utilized interviews. The research strategy was field-based. Given the exploratory nature of the research topic, a sequential exploratory mixed-method design was employed, carried out in two phases: qualitative and quantitative. The use of this mixed-method approach, combining qualitative and quantitative elements, provided the flexibility necessary to identify the factors influencing the development of sports entrepreneurship, particularly focused on sports startups.

In the qualitative phase, participants included members of the board of directors of sports startups, experts in the field, and specialists. A purposive sampling technique was employed, using snowball sampling and selecting experts based on maximum variation sampling until theoretical saturation was reached. To identify suitable interviewees, a list of individuals with expertise in the sports startup field was prepared by the researcher, based on the advice of supervisors and advisors. These individuals were approached in person or via telephone, and interviews were conducted with those who expressed willingness to participate. In cases where interviewees recommended others with relevant expertise, those individuals were also interviewed. Efforts were made to include diverse groups to enrich the data and avoid bias. Ultimately, 38 participants were selected for interviews over time. After the 23rd interview, data repetition began to emerge, but interviews continued until the 38th to ensure reliability, as theoretical saturation was reached by the 30th interview. Each interview lasted between 45 minutes and two hours, with some requiring two sessions. All interviews were recorded and repeatedly reviewed to extract key insights.

In the quantitative phase, the statistical population included all managers, board members of sports startups, expert academics, as well as professional and semi-professional athletes in the Qazvin province, totaling 450 individuals. Using Cochran's formula, a sample size of 208 participants was selected for the quantitative analysis.

### 2.2. Data Collection Tools

Data were collected using both library research and interviews. In the qualitative phase, data collection was based on interviews with sports startup managers, board members, experts, and specialists until theoretical saturation was achieved. Interviews followed a semi-structured format, allowing flexibility in exploring participants' views while maintaining a focus on the key research objectives. The interview protocol was developed based on a review of the relevant theoretical studies and an initial research model. All interviews were recorded, and transcripts were coded to identify key themes, which were then summarized and refined. A Delphi technique was employed to validate the identified themes and develop the final list of key factors influencing sports entrepreneurship development.

For the quantitative phase, a researcher-designed questionnaire was developed based on the insights gathered from the qualitative phase. The questionnaire contained closed-ended questions to assess participants' views on the identified factors. Prior to full distribution, the preliminary questionnaire was tested on a sample of 30 participants to assess its validity and reliability. Ambiguous items were removed based on participant feedback, and the final version of the questionnaire was administered using a five-point Likert scale. Respondents were asked to indicate their level of agreement or disagreement with each statement on the scale, which ranged from strongly agree to strongly disagree. The scale was not initially numbered to minimize any influence on respondents' answers, but numerical values were assigned during data analysis.

### 2.3. Data Analysis

Data analysis was conducted in two stages, corresponding to the qualitative and quantitative phases of

the research. In the qualitative phase, interview data were transcribed and analyzed using thematic coding. Each interview was individually reviewed, and key themes were identified and coded systematically. The themes were then refined to produce a set of key factors. A Delphi method was employed to ensure the validity and reliability of the identified themes. In this process, a panel of experts reviewed the identified factors in multiple rounds, providing feedback and helping to refine the final list. The process continued until a consensus was reached on the key factors influencing the development of sports startups.

In the quantitative phase, the data collected from the questionnaire were coded and entered into statistical analysis software, including Excel, SPSS version 22, and Smart PLS version 4. For each item in the questionnaire, numerical values were assigned to participants' responses, with strongly agree receiving the highest score and strongly disagree receiving the lowest. The analysis used descriptive statistics, including frequency tables and bar charts, to summarize the data. To assess the validity of the model and the significance of relationships between variables, confirmatory factor analysis and structural equation modeling (SEM) were employed. Path analysis was used to measure the model's effectiveness and the significance of the identified relationships between the factors. This comprehensive data analysis approach ensured that the findings were both statistically robust and grounded in the qualitative insights gathered during the research process.

## 3. Findings and Results

The reliability of the questionnaire was assessed using Cronbach's alpha. [Table 1](#) displays the results for the five identified factors:

**Table 1**

*Reliability of the Questionnaire using Cronbach's Alpha*

Factors	Cronbach's Alpha	Sample Mean	Standard Deviation	t-statistic	Significance Level
Supportive Factors	0.745	0.732	0.043	17.121	0.000
Advertising Factors	0.765	0.760	0.046	16.542	0.000
Innovation Factors	0.848	0.790	0.052	15.013	0.000
Cultural Factors	0.861	0.860	0.021	41.491	0.000
Market Awareness	0.789	0.811	0.028	28.972	0.000

As shown in [Table 1](#), Cronbach’s alpha values for the five components range from 0.736 to 0.861, which indicates a good level of internal consistency. The overall Cronbach’s alpha for the questionnaire was 0.818, demonstrating a high level of reliability. All components exceed the acceptable

threshold of 0.7, confirming the internal consistency and reliability of the instrument.

Next, composite reliability (CR) was examined, and the results are presented in [Table 2](#):

**Table 2**

*Composite Reliability of the Questionnaire*

Factors	Composite Reliability (CR)	Sample Mean	Standard Deviation	t-statistic	Significance Level
Supportive Factors	0.762	0.820	0.024	34.674	0.000
Advertising Factors	0.779	0.849	0.025	34.119	0.000
Innovation Factors	0.862	0.858	0.030	28.054	0.000
Cultural Factors	0.871	0.893	0.014	63.750	0.000
Market Awareness	0.806	0.863	0.017	49.411	0.000

As seen in [Table 2](#), all CR values are above the recommended threshold of 0.7, indicating strong internal consistency for the constructs.

The factor loadings for each question, which reflect how well each item contributes to its respective construct, are shown in [Table 3](#):

**Table 3**

*Factor Loadings of Each Question*

Question	Advertising Factors	Supportive Factors	Market Awareness	Cultural Factors	Innovation Factors
a10	0.825				
a11					0.638
a13					0.716
a14					0.775
a15					0.800
a16					0.823
a17					0.656
a18					0.628
a19			0.775		
a1		0.549			
a2		0.663			
a20			0.792		
a21			0.590		
a22			0.817		
a23			0.689		
a24				0.778	
a25				0.637	
a26				0.584	
a27				0.778	
a28				0.630	
a29				0.839	
a3		0.784			
a30				0.713	
a31				0.738	
a4		0.833			
a5		0.813			
a6		0.459			
a7	0.653				
a8	0.719				
a9	0.860				

As shown in Table 3, all factor loadings exceed 0.4, indicating that the variance between the constructs and their indicators is greater than the measurement error, demonstrating good convergent validity.

Convergent validity was further assessed using Average Variance Extracted (AVE). The AVE results, which indicate the average amount of variance that a construct shares with its indicators, are presented in Table 4:

**Table 4**

*Convergent Validity (AVE) of the Questionnaire*

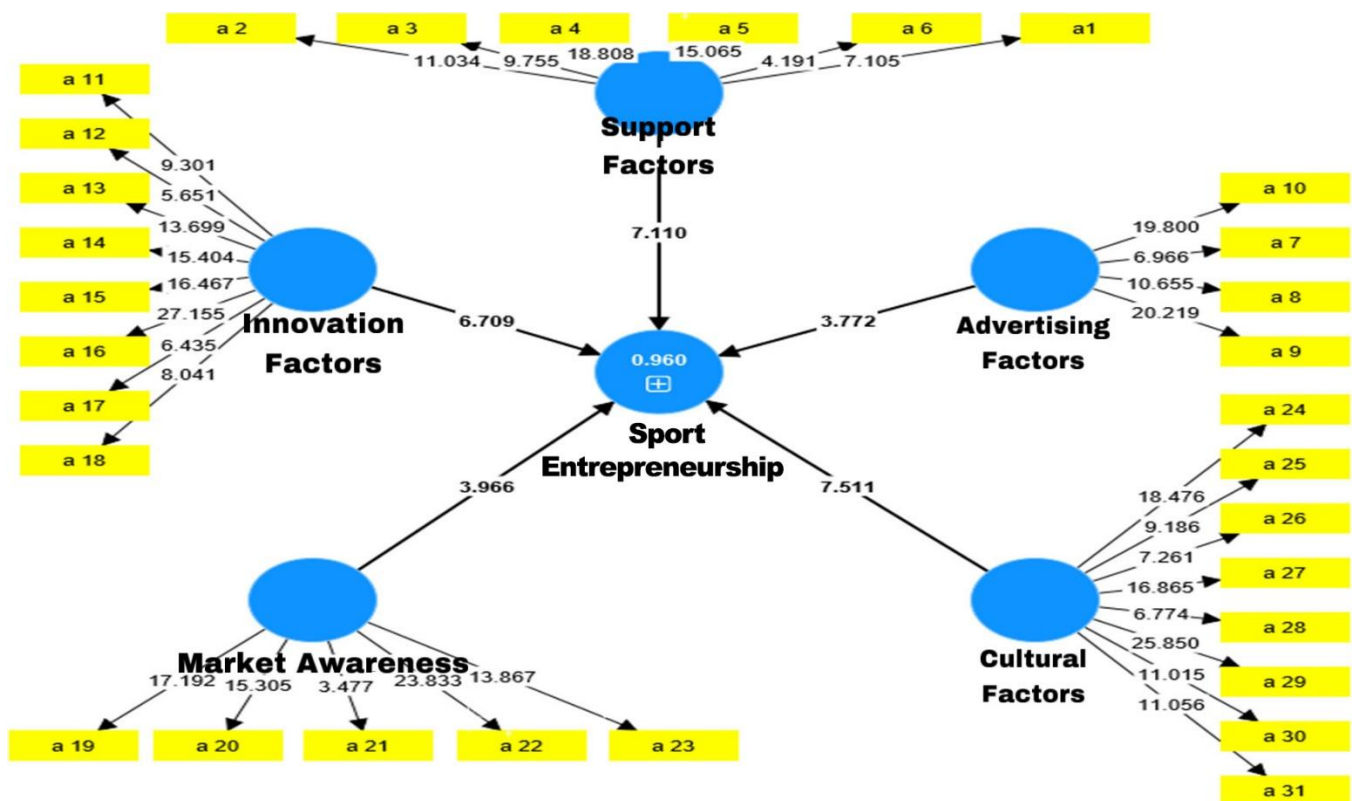
Factors	AVE	Sample Mean	Standard Deviation	t-statistic	Significance Level
Supportive Factors	0.591	0.681	0.054	12.740	0.000
Advertising Factors	0.602	0.716	0.048	15.077	0.000
Innovation Factors	0.544	0.504	0.052	12.696	0.000
Cultural Factors	0.514	0.651	0.053	9.412	0.000
Market Awareness	0.523	0.709	0.062	10.321	0.000

As seen in Table 4, all AVE values exceed the threshold of 0.5, confirming acceptable convergent validity for all constructs. This means that each construct explains more than half of the variance in its respective indicators, demonstrating adequate validity for the measurement model.

Based on the results from Cronbach's alpha, composite reliability, factor loadings, and AVE, the model was found to be statistically significant and had a satisfactory level of fit.

**Figure 1**

*Model with T-Values*



**4. Discussion**

The results of this study identify five key factors influencing the development of sports entrepreneurship with

a specific focus on sports startups: supportive factors, advertising, innovation, cultural factors, and market awareness. These findings align with previous research that underscores the complexity and multifaceted nature of sports entrepreneurship. By identifying these critical factors, the study contributes to the growing body of literature on the elements that drive success in sports entrepreneurship ecosystems.

The first significant factor identified in this study is supportive factors, which include government policies, financial resources, and institutional support. These findings resonate with Arefi et al. (2022), who argue that a dynamic and supportive sports entrepreneurship ecosystem is essential for fostering innovation and growth, particularly in emerging markets. Government policies and access to financial resources play a critical role in providing the foundation for entrepreneurial ventures to thrive (Arefi, Bahrololoum et al. 2022). Crick and Crick (2016) highlight the importance of cooperation and shared resources among sports organizations, which can mitigate the challenges faced by startups, such as limited funding and institutional support (Crick and Crick 2016). Similarly, Corthouts et al. (2021) found that organizational support and the availability of external resources are critical for the success of sports entrepreneurs, particularly those in sports federations and professional clubs (Corthouts, Zeimers et al. 2021).

The second factor, advertising, also plays a pivotal role in the development of sports startups. The study's results show that effective marketing strategies and brand promotion are crucial for raising awareness and generating interest in sports ventures. This finding aligns with the work of González-Serrano et al. (2019), who argue that sports entrepreneurs must strategically manage their brands and leverage digital marketing platforms to gain visibility in an increasingly competitive market (González-Serrano, Jones et al. 2019). Moreover, Kunkel and Biscaia (2020) emphasize the role of branding and consumer behavior in the success of sports brands, suggesting that entrepreneurs who effectively manage their brand's identity are more likely to succeed (Kunkel and Biscaia 2020). Advertising also ties into the idea of creating emotional connections with consumers, which is vital for sports businesses that rely on fan engagement and loyalty (Hua 2019).

Innovation is the third factor identified, reflecting its importance in shaping sports startups. The role of innovation in sports entrepreneurship has been widely discussed in the literature. According to Hammerschmidt (2023), innovation and creativity are crucial for the long-term success of sports enterprises, particularly as the industry adapts to global changes, such as digital transformation and environmental challenges (Hammerschmidt 2023). The findings of this study support the notion that innovation not only differentiates startups but also enables them to respond quickly to market changes. Escamilla-Fajardo et al. (2020) highlight how innovation has become even more critical during the COVID-19 pandemic, which forced sports organizations to adapt to new realities such as virtual events and digital platforms (Escamilla-Fajardo, Núñez-Pomar et al. 2020). This shift toward innovation-driven entrepreneurship was also observed by Crespo et al. (2022), who found that sports organizations increasingly rely on technological advancements and creative business models to survive and grow in the post-pandemic environment (Crespo, Botella-Carrubí et al. 2022).

The fourth factor, cultural factors, highlights the influence of local and global cultural trends on sports entrepreneurship. The findings indicate that cultural attitudes toward sports and entrepreneurship significantly impact the success of startups. This result echoes the work of Bjärsholm (2017), who emphasized the role of social and cultural entrepreneurship in promoting sports as a tool for social inclusion and community development (Bjärsholm 2017). Moreover, Ratten (2011) suggests that sports-based entrepreneurship is deeply intertwined with cultural values, as entrepreneurs leverage their understanding of local and international sports cultures to create innovative products and services that resonate with their target audience (Ratten 2011). The findings also align with Buyrukoğlu (2023), who found that cultural understanding is vital for sports entrepreneurs looking to tap into diverse markets and create culturally relevant offerings (Buyrukoğlu 2023).

Finally, market awareness emerged as a critical factor in the success of sports startups. Entrepreneurs who possess a strong understanding of market dynamics, consumer preferences, and emerging trends are more likely to succeed in a competitive environment. This finding is supported by González-Serrano et al. (2019), who argue that identifying

market opportunities and understanding consumer behavior are key drivers of entrepreneurship in the sports sector (González-Serrano, Moreno et al. 2019). Additionally, Hammerschmidt et al. (2019) found that market awareness is particularly important for sports clubs, which must continuously adapt to the changing needs of their fan base and explore new revenue streams (Hammerschmidt, Eggers et al. 2019). Market awareness also allows entrepreneurs to identify gaps in the market, which can be exploited through innovative solutions (Crick and Crick 2016).

Taken together, the results of this study highlight the complex and interrelated nature of the factors that drive sports entrepreneurship. The identification of supportive factors, advertising, innovation, cultural factors, and market awareness as key determinants aligns with the broader literature on entrepreneurship and innovation in the sports sector. These factors are not only essential for the success of individual startups but also for the overall development of the sports entrepreneurship ecosystem. The findings contribute to the ongoing discussion about the role of entrepreneurship in promoting economic growth, social inclusion, and innovation in the sports industry (Ratten 2020).

While this study provides valuable insights into the factors influencing sports entrepreneurship, it is not without limitations. One of the primary limitations is the geographic focus of the research. The study is based on data collected from sports startups and experts in a specific country, which may limit the generalizability of the findings to other regions or countries with different sports ecosystems. As sports entrepreneurship is a global phenomenon, future studies could benefit from a more diverse and international sample, allowing for cross-country comparisons and a better understanding of how cultural, economic, and regulatory contexts influence sports entrepreneurship.

Another limitation is the reliance on self-reported data through interviews and questionnaires, which may introduce bias into the findings. Participants may have exaggerated their entrepreneurial activities or downplayed challenges due to social desirability bias. Although measures were taken to ensure the reliability and validity of the data, future research could use longitudinal designs or observational methods to track entrepreneurial activities over time and

provide a more objective assessment of the factors influencing sports entrepreneurship.

Additionally, the study focused primarily on the perspectives of sports entrepreneurs and experts. However, other stakeholders, such as investors, consumers, and policymakers, also play a critical role in shaping the sports entrepreneurship ecosystem. Including a broader range of stakeholders in future research could provide a more comprehensive understanding of the factors that drive the development of sports startups.

Given the limitations of this study, several avenues for future research are recommended. First, as mentioned earlier, expanding the scope of the research to include an international sample would provide valuable insights into how different cultural, economic, and political contexts affect sports entrepreneurship. Comparative studies between countries or regions could shed light on the unique challenges and opportunities that sports entrepreneurs face in various parts of the world.

Second, future research could explore the role of emerging technologies in sports entrepreneurship, such as blockchain, artificial intelligence, and virtual reality. These technologies are rapidly transforming the sports industry, creating new opportunities for innovation and entrepreneurship. Investigating how sports startups are leveraging these technologies to enhance fan engagement, improve athlete performance, and create new business models would be a valuable contribution to the literature (Simbolon 2023). Furthermore, research could focus on the potential risks and challenges associated with adopting these technologies, particularly regarding data privacy, security, and ethical concerns.

Third, future studies could examine the long-term impact of the COVID-19 pandemic on sports entrepreneurship. While the pandemic has accelerated innovation and digital transformation in the sports industry, it has also created significant challenges, such as financial instability and disruptions to traditional business models. Investigating how sports entrepreneurs are navigating the post-pandemic landscape and adapting to new realities would provide valuable insights into the resilience and adaptability of the sports entrepreneurship ecosystem (Escamilla-Fajardo, Núñez-Pomar et al. 2020).



The findings of this study have important implications for sports entrepreneurs, policymakers, and other stakeholders in the sports industry. First, sports entrepreneurs should prioritize building strong networks and relationships with key stakeholders, including investors, government agencies, and other sports organizations. As the findings suggest, supportive factors such as access to financial resources and institutional support are critical for the success of sports startups. Entrepreneurs should also focus on developing their marketing and branding strategies, leveraging digital platforms to reach a broader audience and create emotional connections with consumers (Kunkel and Biscaia 2020).

Second, policymakers should consider creating a more supportive environment for sports entrepreneurship by offering financial incentives, reducing regulatory barriers, and promoting innovation through public-private partnerships. As Arefi et al. (2022) highlight, a dynamic and supportive sports entrepreneurship ecosystem is essential for fostering innovation and growth, particularly in emerging markets (Arefi, Bahrololoum et al. 2022). Policymakers should also invest in entrepreneurship education and training programs to equip aspiring sports entrepreneurs with the skills and knowledge needed to succeed (Matić, González-Serrano et al. 2022).

Finally, sports organizations should foster a culture of innovation and intrapreneurship within their teams. By encouraging employees to think creatively and experiment with new ideas, sports organizations can stay ahead of market trends and remain competitive in a rapidly changing industry (Escamilla-Fajardo, Alguacil et al. 2021). This is particularly important in the context of digital transformation, where sports organizations must continuously innovate to engage fans and explore new revenue streams.

In conclusion, this study identifies key factors that influence the development of sports entrepreneurship and highlights the importance of supportive ecosystems, innovation, marketing, and cultural understanding. By addressing these factors, sports entrepreneurs and stakeholders can contribute to the growth and sustainability of the sports industry, driving economic, social, and environmental impact.

### Authors' Contributions

P. S., M. N. N., M. T., and S. A. B. collaborated on the research aimed at identifying factors influencing the development of sports entrepreneurship with a focus on sports startups. P. S. led the conceptualization of the study and was actively involved in data collection, conducting interviews with board members, experts, and specialists within the sports startup ecosystem.

M. N. N. contributed significantly to the design and methodology of the research, overseeing the application of both qualitative and quantitative methods. He also played a key role in structuring the field-based and descriptive-survey approach used in the study.

M. T. handled the analysis phase, conducting the coding of interviews and leading the qualitative content analysis. He ensured that the key components—supportive factors, advertising, technology, market awareness, and culture—were accurately identified from the qualitative data.

S. A. B. was responsible for performing the quantitative analysis using structural equation modeling (SEM) in PLS software. He analyzed the closed questionnaire responses and verified the statistical significance of the identified factors, contributing to the quantitative validation of the research findings.

### Declaration

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

### Transparency Statement

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

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### Declaration of Interest

The authors report no conflict of interest.

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## Ethics Considerations

The study adhered to the ethical guidelines for research with human subjects as outlined in the Declaration of Helsinki.

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