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Startup opportunities in the sports industry based on developing a conceptual framework for the sports ecosystem in Iran

Zeinab Mondalizadeh*

Department of Sport Management, Faculty of Sports Sciences, Arak University, Arak, Iran. Email: z-mondalizade@araku.ac.ir

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ABSTRACT

The present study aims to identify startup opportunities in the sports industry by developing a conceptual framework for the sports ecosystem in Iran. Despite increased interest by researchers in sports startup opportunities, few studies have examined these opportunities based on the sports ecosystem framework. The research approach was qualitative, with participants consisting of professors, experts in sports sciences, and entrepreneurs active in sports startups. Data was collected using review articles and Delphi techniques. The findings indicated that stakeholders, infrastructure, and processes such as support processes, policies, planning, and institutional factors, including the development of the public, championships, and professional and educational sports, could effectively achieve developmental goals. Hence, the challenges of each of these sectors can provide opportunities for developing sports startups. Therefore, recognizing sports startup opportunities can pave the way for investing and creating entrepreneurial potential in sports and make the sports economy more dynamic.

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1. Introduction

Sports are one of the biggest and fastest-growing industries globally (Ratten, 2020e). As the oldest leisure activity, sport is vital for health performance in society (Araújo Vila et al., 2019; Ratten, 2020b). One of the aspects of the sports industry in society is its economic effects, considering the goods and services produced in the economy or changes in Gross Domestic Product (GDP) (Davies, 2002; Hone & Silvers, 2006). Nowadays, changes in the sports industry are increasing because of accessibility to the Internet and growing technology. Therefore, there are values and consequences related to creativity, innovation, and entrepreneurship due to the increasing convergence between business, culture, and technology in sports (Jenny et al., 2017). New technological options, including electronic and informational infrastructure in sports, are being developed to create technological innovations. Regarding this matter, Ratten & Tajeddini (2019) highlighted the issues of sports entrepreneurship and innovation. Sports entrepreneurship has developed through technological innovations (such as social media, e-sports, and Information Technology), institutions, and organizations surrounded by stakeholders to co-create the entrepreneurial process. Indeed, technology is a way to define knowledge in sports to select the best new idea (Ratten, 2018). Technology and innovation can create opportunities for new firms and startups (Shane, 2001).

Startups play an essential role in the economy and are created by an individual's ability to start the risks related to business (Ratten, 2020e; Spender et al., 2017). A startup is a temporary organization looking for a repeatable, scalable, and profitable business model that can perform flexibly related to market circumstances (Blank & Dorf, 2012; Ratten, 2020e; Spender et al., 2017). Startups want to create new products and services to be seen and accepted in the market (Teberga & Oliva, 2018). Startups are important for the world economy due to innovation, digital solutions, and scalability (Ratten, 2020e; Teberga & Oliva, 2018). Based on the evidence, startups are a part of entrepreneurship strategies (Salamzadeh, 2018). There is a high potential for entrepreneurial opportunities, primarily through startup activities (Salamzadeh & Kesim, 2017).

In this regard, entrepreneurial opportunities are situations where a person creates a new framework or business model from valuable resources. Startup opportunities are a subset of entrepreneurial opportunities aiming to achieve entrepreneurship goals (Ratten, 2020e). Opportunities are needs or wants that exist in the environment (Davidsson & Honig, 2003). Recognizing entrepreneurial opportunities requires understanding the sports ecosystem (Ratten, 2020a).

Few studies have covered sports startups so far from a systemic perspective (Acs et al., 2014). As a result, identifying the sports ecosystem for recognition of the capabilities of sports startups from a systemic viewpoint has recently emerged. Many research projects have shown the importance of an entrepreneurial ecosystem and how a rich ecosystem related to entrepreneurship causes value creation (Acs et al., 2014; Autio et al., 2014; Ratten & Nanere, 2020; Tsvetkova, 2015).

The sports ecosystem framework, which considers developmental goals and involves all stakeholders in a comprehensive approach to sports categories, can offer a new perspective for implementing and launching new sports startups by recognizing the sports world. However, the sports industry and startups have yet to find their desired position in Iran. Nevertheless, identifying new opportunities and ideas and developing a new framework of the sports ecosystem that considers socio-economic situations related to Iran can facilitate innovation in the sports industry by attracting investment. Recognizing opportunities and understanding the sports ecosystem can enable startup owners to conduct more accurate business analyses. Moreover, the different natures of sports have prevented the development of a startup ecosystem framework based on the sports ecosystem.

Due to the importance of a holistic understanding of the connections among sports actors and value creation in the sports ecosystem, this research has scientific contributions to produce a framework for the relationships among multiple actors in sports. This framework provides insights for sport startup owners. Additionally, no studies have analyzed the sports ecosystem (including its dynamics, processes, and stakeholders) for achieving sports development goals from a business ecosystem perspective. Therefore, this research aims to fill this gap by developing the startup ecosystem framework. As a result, the research question is: 'What opportunities exist for sports startups based on the defined challenges in the sports ecosystem framework'?

This paper is organized as follows. Section 2 presents the literature review, highlighting key concepts related to entrepreneurial opportunities, startup ecosystems, and the sports industry. In

Section 3, we first develop a sports startup ecosystem framework, then identify the challenges of the sports ecosystem, and finally categorize sports startups. Section 4 presents our findings, identifying specific opportunities for sports startups based on the defined challenges in the framework of the sports ecosystem. The discussions and conclusions of our research are presented in Sections 5 and 6, respectively.

2. Literature Review

2.1. Sport Ecosystem

The cited studies, namely Farahmandmehr et al. (2019), Moradnezhadi et al. (2019), and Yarahmadi et al. (2021), have identified various components of the entrepreneurial ecosystem. These components include research institutions, universities, companies, infrastructures, governments, markets, human resource management, economic factors, and supporters. The startup ecosystem is a part of this broader ecosystem and comprises both bottom-up tactics and top-down strategies from the government, as discussed by Fernández Fernández et al. (2015). Moradnezhadi et al. (2019) have researched the ICT-based startup ecosystem, identifying seven components that significantly affect startups: policy, finance, culture, support, human capital, market, and environmental attractiveness.

The main part of a startup ecosystem is individuals or players who participate and involve in a variety of economic, political, ecological, technological, and social dynamics to provide value co-creation (Sammaknejad, 2017; Buser et al., 2022; Salamzadeh. Value co-creation is the different contributions of players or actors to create value in the interconnectedness situation of the whole startup ecosystem (Buser et al., 2022; Woratschek et al., 2014). The sports ecosystem describes the processes, policies, and practices considering stakeholders or actors that shape the integrated future of the sports industry where actors collaborate to co-create value in sports networks and startups, seeking to achieve entrepreneurial goals (Buser et al., 2022; Hylton, 2013). Accordingly, the players of the sports ecosystem are interconnected, and many resources, institutions, and even government organizations affect the sports startups within the sports industry. Based on the evidence from many types of research (Buser et al., 2022; Woratschek et al., 2014), the actors of sports networks are mentioned as follows (The elements of the sports ecosystem are shown in Figure 1):

- Sports Actors: Athletes, fans, spectators, coaches, and volunteers, as part of the sports actors, are interested in participating in championship activities or enjoying the game. Athletes integrate resources to co-create value according to sporting activities. In addition, athletes lead to commercial purposes and create more marketing situations, including cooperation among sports sponsors, media, and sports businesses (Buser et al., 2022).
- Infrastructure and Technology: Infrastructure and technology are the bases of the sports ecosystem and include a competitive environment, sports industrial estates, professional services, and ease of doing business indicators (Farahmandmehr et al., 2019; Salamzadeh, 2018; Yarahmadi et al., 2021). Sports infrastructure affects the startup ecosystem and causes economic and social revival (Yarahmadi et al., 2021). Buser et al. (2022) state that sports actors co-create value through engagement infrastructure in a sports ecosystem.
- Sports Products: Sports products, which include sports services and goods, form the core of the sports industry and are the foundation of the products created by sports networks and sports economics within the sports startup ecosystem. The value of these products is created through the collaboration of sports actors in the sports ecosystem who purchase and consume them (Buser et al., 2022).
- Sports Colleges (Universities): The role of sports colleges is critical in creating and developing the sports ecosystem and, thus, in the sports startup ecosystem. Universities can create the growth of sports and sports startups (Farahmandmehr et al., 2019; Yarahmadi et al., 2021). As Salamzadeh (2018) pointed out, universities are a talent pool where learning individuals can happen to launch sports startups.
- Institutions: Institutions affect enterprises, customers, and suppliers (Vargo & Lusch, 2016), as well as the sports ecosystem (Buser et al., 2022). Institutions are described as various types of rules, norms, symbols, and practices and include social structure and social activities. Scott

(2013) categorizes institutions into three pillars: the regulative pillar (rules, laws), the normative pillar (norms, social value), and the cognitive pillar (societal beliefs, shared understanding).

- Sports Businesses: Sports businesses are a part of the widespread sports industry, and the success of sports businesses depends on the performance of businesses in the interrelated network of sports actors (Mondalizadeh, 2013).
- Media: Media, including social media, depict the success or failure of a sports team or game. This can attract sponsors due to the image of the team. Other sports actors, such as spectators, buy tickets to watch games on media platforms or in stadiums. Additionally, sponsors focus on sports business contacts (Buser et al., 2022). The importance of media in the startup ecosystem has been mentioned by many researchers (Basri & Siam, 2017; Gulati & Grover, 2022; Sajane & Gaikwad, 2022; Tajpour & Hosseini, 2021).
- Government and Policy: Governments play an essential role in shaping the sports ecosystem (Farahmandmehr et al., 2019; Salamzadeh, 2018). Favorable government policies can create an environment conducive to the success of sports startups, while a lack of support from the government and policymakers can lead to failure (Salamzadeh, 2018).

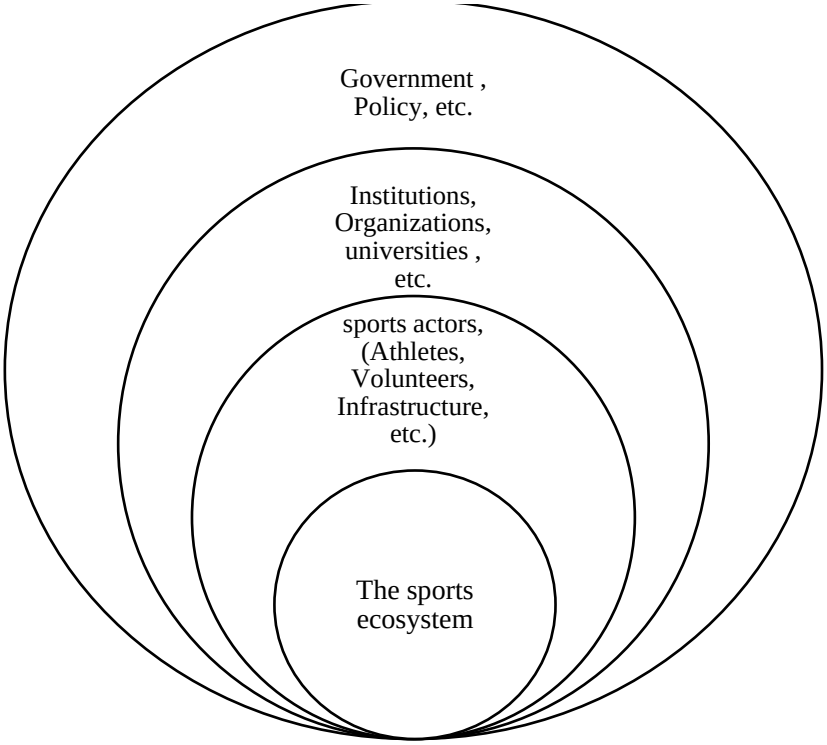

Fig. 1. The Sports Ecosystem (Source: Author's elaboration)

The Physical Education Organization (Youth and Sports Ministry) in Iran developed a comprehensive plan for sports in 2003 from the perspective of the sports ecosystem. The plan aimed to achieve sustainable sports development through main components, support, and strategic factors. It includes four main features: sport for all, community, championship, and professional sports, as well as 11 supporting elements: institutional development, management and planning, human resource development, scientific research, rules and regulations, sports facilities and infrastructure, sports equipment, standardization and evaluation, financial resources, sports culture development, and ICT development. The plan covers several categories of sports development concepts, including community-based sports, elite-based sports, sports industry development, sports as a tool for public education, and hybrid approaches that combine these four directions (Mondalizadeh et al., 2021). These categories represent some of the main challenges and problems in sports. Recognizing the difficulties stakeholders face in sports can inspire the launch of new businesses, especially sports companies and startups. The sports community encompasses many people, including staff, sports managers, cancer survivors, people with disabilities, children with learning disabilities, pregnant

women, the elderly, professional and championship athletes, teachers, the education system, physiotherapists, the media, and other sports-related institutions. All of these groups can benefit from the sports community.

2.2. Sport Startups

The sports industry has experienced significant growth, and technology innovation has played a vital role in creating value. Emerging trends in sports innovation have led to changes in business approaches. Digitalization and information technology provide new opportunities for sports startups to succeed (Ratten, 2019, 2020d, 2020e).

Startups are a new type of business that operates quickly without the need for time-consuming bureaucratic processes. They are flexible, responsive to social needs, and have launched a fast way to create value and become sustainable businesses in today's internet and online commerce world. This agility and flexibility make them well-suited to changing based on customer feedback, exploring new and niche markets, using technology to develop products rapidly, and maintaining a creative and up-to-date business model (Ratten, 2020d). Sports startups are a unique form of entrepreneurship that revolves around sports and leverages innovation to create value (Ratten, 2020d, 2020e; Salehian et al., 2021; Spender et al., 2017). Unlike other startups, they stand out because of the interdisciplinary nature of sports, emotional connection with society, competitive spirit, and focus on winning (Ratten, 2010, 2020d; Wemmer & Koenigstorfer, 2016).

Sports startups operate within the sports ecosystem, presenting challenges and opportunities within the sports sector. Understanding this ecosystem is crucial in identifying the factors that can impact the success of a startup. Despite its importance, only a few studies (Buser et al., 2022; González-Serrano et al., 2021) have explored the sports ecosystem from a business perspective. This ecosystem comprises institutions, infrastructure, human capital, research, market and business sophistication, knowledge, technology, and creativity, all of which are critical in shaping the success of a sports startup. According to Ratten & Nanere (2020), although the entrepreneurial and sports ecosystems have gained increased attention in recent years, most studies analyze them separately. Prior research has focused on the development model of sports startups (Salehian et al., 2021; Taghavi Rafsanjani et al., 2021), exploring factors that influence their success. However, these studies did not address the sports ecosystem framework to identify potential startup opportunities. Farahmandmehr et al. (2019) explained the entrepreneurship ecosystem in sports, identifying six critical elements related to the entrepreneurship ecosystem in sports: entrepreneurial environment, human capital, entrepreneurial leadership, sports equipment, products and services, financing, and infrastructures. Additionally, some existing literature has explored barriers to the growth and launch of sports startups, as well as factors that may affect the development of students' sports startups (Salehian et al., 2021; Taghavi Rafsanjani et al., 2021; Talebi et al., 2020). Other studies related to sports and the startup ecosystem are shown in Table 1.

3. Research Methods

The study utilized the Delphi technique, a qualitative approach involving sequential questionnaires and controlled feedback, to gain reliable consensus from an expert group. The quality of the expert panel was deemed more significant than the number of experts in this technique (Turoff & Linstone, 2002). The quality of the expert panel is emphasized to be more important than the number of experts, according to the Delphi technique used in this study. However, while Murphy et al. (1998) suggest that having more participants can be advantageous, there is no clear evidence of the impact of the number of participants on the reliability and validity of the Delphi technique. In this study, two types of agreement were used based on the perspectives Jones & Hunter (1995) pointed out. In the first step of the study, the agreement rate to the conceptual framework extracted from documental studies and literature reviews was used. For the second research phase, a literature review and open-ended questions (10-point scales) were used with the mentioned panelists to identify their views on the challenges of the sports ecosystem. The concepts extracted from the first step were then placed in a questionnaire, and the Delphi panel was asked to express their views on each concept. Finally, the recognized challenges and documents were considered, and the opportunities of the sport were categorized based on qualitative content analysis.

Table 1. Reviewing research related to sports startups and the ecosystem

Authors and the year of publication	Research	Key finding
Motoyama & Knowlton, (2017)	Examining the connections within the startup ecosystem: a case study of St. Louis	Social, cultural, and institutional elements influence the entrepreneurial ecosystem. These elements are interconnected through three layers: the first involves interactions among entrepreneurs, the second involves interactions between entrepreneurs and organizations, and the third involves interactions among key support organizations.
Da Silva & Casas, (2018)	Sports ecosystems: assumptions for incorporating marketing strategies in sports clubs	Various elements in the sports ecosystem influence marketing strategies in sports entrepreneurship, including environmental factors, marketing factors, and sports clubs.
Ratten, (2019)	Sport entrepreneurial ecosystems and knowledge spillovers	This study found that knowledge spillovers are crucial for shaping sports entrepreneurial ecosystems. Factors such as city amenities, cultural characteristics, and internationalization facilitate the flow of knowledge and ideas among entrepreneurs and support organizations. Creating an environment that fosters knowledge exchange and collaboration is essential for the growth and success of sports startups.
Ratten & Thompson, (2020a)	Digital sport entrepreneurial ecosystem	Stakeholders, social networks, infrastructures, financial providers, institutions, policies, high technology, and knowledge are elements to develop the digital business in sports.
Laukyte, (2020)	Disruptive technologies and the sports ecosystem: a few ethical questions	The effect of artificial intelligence, biotechnologies, and other disruptive technologies on the sports ecosystem represented by athletes, coaches, judges, and fans was addressed.
Ratten, (2020a)	Creating entrepreneurial opportunities through sports ecosystems	Entrepreneurial ecosystems are complex and evolved by sports network interactions. Many different layers influence the activities occurring in sports, including infrastructure, consumers, and other stakeholders.
González-Serrano et al., (2021)	Entrepreneurial ecosystems for developing the sports industry in European Union countries	The study concluded that creativity, knowledge, business, infrastructure, human capital, and research are among the most critical factors in an entrepreneurial ecosystem that impact sport-related GDP.
Buser et al. (2022)	Towards a sports ecosystem logic	The study presented a comprehensive view of how actors and engagement platforms are interconnected through sports networks and value co-creation.
Darooghe Arefi et al., (2022)	System dynamics model for the sports entrepreneurship ecosystem	Critical factors such as entrepreneurship opportunities, sports tourism, market opportunities, entrepreneurial infrastructure, and entrepreneurship-oriented environments influence the sports entrepreneurship ecosystem.
Mondalizadeh et al., (2022)	Identifying barriers to the sports and health startups' growth and providing solutions	The study identified several barriers to startups in the sports ecosystem, including managerial, cultural, and social factors, human capital, structural-commercial, legal barriers, and environmental conditions.
Parvaz & Eydi, (2022)	Identify and analyze the challenges of startups in the field of sports businesses with a content analysis approach.	The study's findings revealed that sports startups face several challenges, including a lack of financial support for business, strict rules and regulations, and a shortage of human resources.
Fenyves, (2022)	Analysis of the ecosystem of e-sport	The study's findings compared the models of the e-sport ecosystem with other ecosystems. They identified primary and secondary stakeholders, marketing, related tools or activities, and the operating systems as critical elements of the e-sport ecosystem. The study also highlighted the unique nature of the e-sport ecosystem, characterized by its attractiveness as a sport.

The study recruited a panel of experts consisting of ten sports science professors and four sports business managers who were selected based on their educational background and experience in sports startups. The purposeful and snowball sampling techniques were employed to select participants carefully based on their roles within the sports ecosystem.

The inclusion criteria for participants in this study required active involvement in sports startups and management. A purposive and snowball sampling technique was employed to recruit participants, with initial participants identified through personal connections and referrals from colleagues. Following each interview, participants were asked for additional referrals to other individuals involved

in sports startups. Each participant's expertise in the sports startup ecosystem was evaluated through conversations, with most of these discussions leading to a subsequent interview utilizing the interview procedure. Table 2 provides specific details of participants as the Delphi panelists.

Table 2. Demographic characteristics of Delphi panelists

	Gender	Field	Work Experience (years)	Education
1	Female	Academic Expert	5	Ph.D. in Sports Biomechanics
2	Female	Academic Expert	5	Ph.D. in Sports Management
3	Female	Academic Expert	5	Ph.D. in Corrective Exercise
4	Female	Academic Expert	10	Ph.D. in Sports Physiology
5	Male	Academic Expert	28	Ph.D. in Sports Management
6	Male	Academic Expert	14	Ph.D. in Sports Management
7	Male	Academic Expert	30	Ph.D. in Sports Management
8	Female	Academic Expert	13	Ph.D. in Corrective Exercise
9	Female	Academic Expert	5	Ph.D. in Sports Management
10	Male	Academic Expert	15	Ph.D. in Motor behavior
11	Male	Master of Science, Sports Engineer	7	Sports Entrepreneurs
12	Male	Bachelor, Sports Management	12	Sports Business
13	Male	Master of Science, Sports Physiology	11	Sports Business
14	Male	Bachelor, Sports Sciences	5	Sports Business

The research employed two data collection methods, namely, 14 in-depth interviews and a Delphi questionnaire. The interviews were audio-recorded and transcribed into a Microsoft Word document for subsequent data analysis. The data were analyzed using content analysis, which involved grouping the content into categories based on similarities (Khanifar & Moslemi, 2018, pp. 82). The Delphi questionnaire collected the expert panelists' views and opinions on the identified concepts. In cases where no consensus was reached among the participants, the researchers considered the average of 50% as the result of panel selection.

4. Findings

4.1. Sports Ecosystem from a Business Perspective

In the first round, 14 concepts related to sports ecosystem components were extracted from the first round. Then, in the second round, 13 concepts were achieved. Next, the Delphi panel members were asked to express their views about each extracted element. Finally, each component was included, approved, removed, added, or integrated with other elements and separated into two or more elements.

Table 3. The two Delphi rounds for developing a sports ecosystem framework

		Number of the initial components	Approved	Removed	Added	Integrated with other components	Separated into two or more components	Number of final components
Round 1	Concepts of sports ecosystem	14	2		1	2	-	13
Round 2	Concepts of sports ecosystem	13	-	-	-	-	-	13

Finally, the output of this study was a sports ecosystem framework that comprised 13 distinct items. These items were then categorized into three different groups based on the principles of systemic theory, as illustrated in Figure 2. The elements of this framework encompassed a wide range of factors, such as stakeholders, infrastructures, policies, plans, institutional factors, sports development, sport for all, educational sport, and championship sport.

Based on the systemic theory, institutional infrastructure theory, and stakeholder theory, the research findings revealed that the input factors for the sports ecosystem consist of various stakeholders, such as

athletes, volunteers, sponsors, fans, coaches, SMEs, sports businesses, and employees, as well as infrastructures. The processes include support processes, policies and programs, institutional factors, institutions, technology, sports markets, and industry. As a result, the challenges faced by each of these sectors can offer opportunities for developing sports startups. Furthermore, culture, policy, and macroeconomics can significantly impact sports development goals at a macro level.

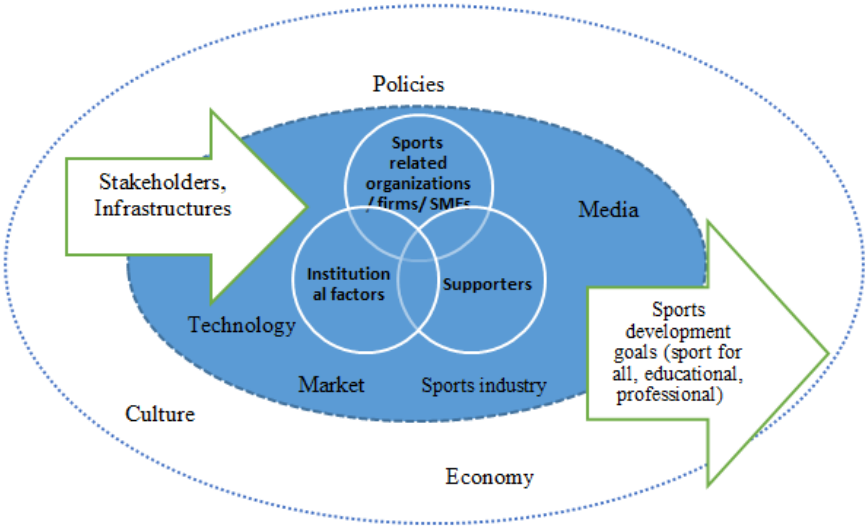

Fig. 2. Sports ecosystem from a business perspective

4.2. Challenges Related to Sports Ecosystem Framework

The challenges of the sports ecosystem framework were identified through the Delphi technique. Initially, challenges were extracted based on the literature review and interviews, followed by identifying challenges using a 10-point scale questionnaire. As a result, four main challenges were identified and presented in Table 4.

Table 4. Main challenges related to the sports ecosystem framework

Main challenges	Challenges
Services and Education	Challenges of education and presenting service in sports include: • Overweight and obesity in society, • Depression, • Musculoskeletal abnormalities, • Sedentary /Inactivity, • Lack of knowledge about legal rules and international law in sports, etc.
Sports Equipment & Technologies in Sport	Challenges of sports equipment and lack of standard technology include: • Lack of standards for sports equipment • Shortage of championship sports equipment • Shortage of children's sports equipment • Shortage of equipped gyms • Weak collaboration among scientific organizations for strengthening sports technologies, etc.
Sports Clubs' Development Process	The challenges related to processing in sports clubs include: • Inattention to native local games • Lack of information about active clubs and gyms • Lack of knowledge and information about active coaches and referees in cities • Absence of a coherent and comprehensive evaluation system in sports organizations • Lack of private sector media in sports, and so on.
Entertainment and Leisure	Challenges related to entertainment and leisure in society include: • Inadequate communication among sports and youth departments and sponsors/donors • Ineffective use of sports advertising capacity • Weak technical infrastructure • Inadequate support from the educational system • Insufficient utilization of sports capacities in the healthcare system.

After achieving consensus on the challenges related to the sports ecosystem, the challenges were categorized into their main components. As presented in Table 4, the main components of challenges for the sports ecosystem included education, sports equipment, processes of sports development in organizations, outdated technologies, and challenges related to entertainment and leisure.

4.3. Categorizing of Opportunities for Sports Startups

The Delphi technique was used to categorize opportunities based on the challenges identified in the previous results. Startups often arise from identifying challenges or problems within the sports ecosystem, so opportunities for sports startups were categorized based on the main challenges. Initially, 13 concepts related to sports startup opportunities were extracted in the first round, and 13 concepts were identified in the second round. The Delphi panel members were then asked to provide their opinions on each extracted element.

Table 5. The two rounds of Delphi for categorizing opportunities for sports startups

		Number of the initial components	Approved	Removed	Added	Integrated with other components	Separated into two or more components	Number of final components
Round 1	Opportunities for sports startups	15	1	-	1	3	-	12
Round 2	Opportunities for sports startups	12	-	-	-	-	-	12

The opportunities for sports startups are presented in Figure 3, categorized into four main elements: services and education, equipment and production of technological sports equipment, sport and club development process, and entertainment and leisure. Each primary element had several sub-elements. Opportunities in services and education included educational sports, sports for all, and championship and professional sports. Opportunities for equipment included safety equipment, skill development equipment (such as wearable gadgets), and referee equipment. The sport and club development process presented opportunities for talent identification and club skills. Finally, entertainment and leisure opportunities included talent identification, club skills, and intermediary services between clients and managers.

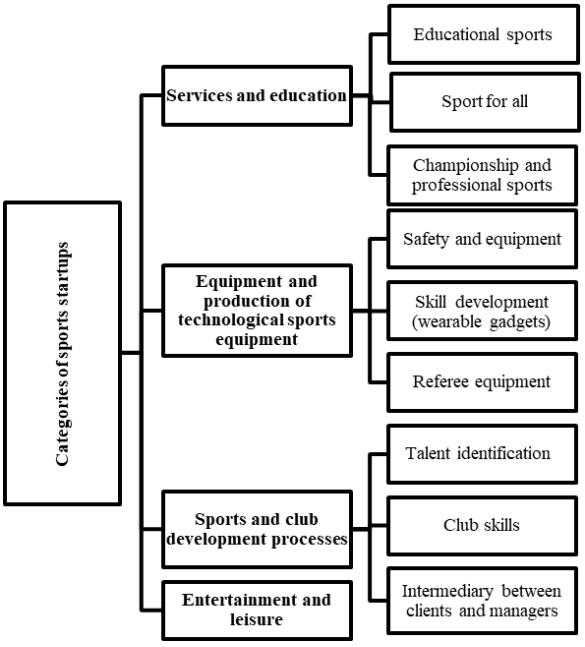

Fig. 3. Opportunities for sports startups based on the scope

5. Discussion

The findings of this study showed that developing a sports ecosystem through input and process factors considering the sport's developmental goals is possible through the systemic approach. In addition, institutional infrastructure theory and stakeholder theory could determine the sports ecosystem framework. Indeed, through the sports ecosystem framework, we aim to contribute to a holistic and comprehensive understanding of the cooperation of the stakeholders, infrastructures, and processes concerning the social, economic, and cultural environments to achieve sports developmental goals in society.

One critical issue that can be addressed systematically is the cooperation of stakeholders in sports. Bischoff (2021) emphasizes the role of stakeholder theory in the entrepreneurial ecosystem, which is related to a set of stakeholders in a local environment that provides the underlying infrastructure for entrepreneurial activities like startups (Binkley, 2015). Moreover, many studies (Bischoff & Volkmann, 2018; Buser et al., 2022; Erina et al., 2017; Ratten, 2020b) pinpoint stakeholder groups' importance and collaboration for the entrepreneurial ecosystem. Examples of stakeholder networks in sports include people with learning disabilities, autistic children, the elderly, employees, pregnant women, and people with musculoskeletal disorders, each of whom has challenges and problems. According to the findings of Gholizadeh & Mohammadkazemi (2022), there are similar concepts related to opportunities in many types of research, including evaluation and assessment. Therefore, we can use the term "opportunities" to refer to challenges or evaluations of situations for sports development. Concerning this issue, Ratten & Tajeddini (2019) acknowledge the challenges organizations face in understanding and predicting entrepreneurial opportunities in the digital era. However, by recognizing the entrepreneurial nature of sports, researchers can investigate innovations and develop better theories that link practical experience with impactful innovations. For example, one of the challenges related to stakeholders in the present study was the lack of sufficient time for employees to exercise, which could be an opportunity for a sports startup.

From an institutional infrastructure perspective, the main emphasis is collaboration among organizations based on rules, norms, and values. The concept of institutional infrastructure is correlated with institutions consisting of cognitive, normative, and regulative structures (Scott, 1995, 2013). For entrepreneurial ecosystems, institutions, as the rules of the game, are essential for their influence on the structure of financial incentives and the allocation of resources to their users (Sussan & Acs, 2017). Institutional infrastructure comprises dimensions/elements, including events, resources, and certification bodies related to broader institutional arrangements (Kapturkiewicz, 2021). In this regard, Kapturkiewicz (2021) mentions a list of institutional infrastructure elements, including policy, regulators, finance, resources, and culture. The list of entrepreneurial ecosystem elements can be traced to the more general list of features of institutional infrastructure. Buser et al. (2022) point out that many engagement platforms and institutions (formal and informal) are involved in the sports ecosystem.

The weakness in education for all stakeholders at all levels could be an opportunity for launching a startup. There are many challenges in sports at all levels, including schools and organizations (Duffy et al., 2011; Griffiths et al., 2018; McCardle et al., 2019; Rainer et al., 2012). For example, Rainer et al. (2012) reported challenges regarding the quality of sports education in primary schools, while Griffiths et al. (2018) showed difficulties in coaching education programs in England. Evidence of problems and challenges in sports at the educational level can also be observed in Iran, as demonstrated in Mohayya et al.'s (2021) and Salamzadeh & Kesim's (2017) research. Challenges at the educational level include academic, human resources, contextual, and individual factors (Mohayya et al., 2021). According to Sammaknejad (2017), a lack of training, education, and skills exists in startup ecosystems in Iran. Therefore, universities should consider plans and courses that future students can receive regarding knowledge and skills for launching sports startups.

The sports industry can be significantly impacted by technological innovation (Ratten, 2020c). For instance, wearable gadgets, nanotechnology, and artificial intelligence in sports equipment can significantly enhance athletes' performance. However, in developing countries like Iran, technological innovation in sports products and equipment is hindered by sanctions, weak industry-sports science relationships, and outdated sports technology. The inefficacy and lack of economic performance of old sports technologies create a need for innovation and new technologies in sports (Aghamohammadi et

al., 2021; Fernández Fernández et al., 2015; Mohammadkazemi et al., 2014; Ratten 2020c, 2020e; Spender et al., 2017; Taghavi Rafsanjani et al., 2021; Wemmer & Koenigstorfer, 2016). Therefore, developing new technologies in sports could be an opportunity for startups. For example, energy-saving technologies for sports venues could be promising for sports startups. Additionally, challenges such as lack of communication between insurers and club visitors to encourage participation in sports, lack of communication between federations, underdeveloped sports, and lack of standardized software in sports could also be opportunities for creating startups.

Weakness in the sports development process could be another challenge related to the sports ecosystem. The sports development process has been investigated by many researchers (Green & Collins, 2008; Ha et al., 2015; Sotiriadou et al., 2008; P. Sotiriadou & Shilbury, 2013). The process of sports development is different in different contexts. The studies of the sports development process have investigated who, in what ways, and at which level are involved in sports development (Sotiriadou et al., 2008). In the startup world, the sports development process surveys the challenges of this area. For example, the lack of systematic talent identification centers that can lead a person to a championship or professional sports from a long-term perspective is essential for sports development. In addition, raising awareness about sporting events and private sector participation can help create and develop startups in the sector. The inefficiency of government institutions, and consequently, coordination to use the private sector's potential in the strategic and targeted development of sports can be beneficial.

Finally, challenges in entertainment and leisure could be another weakness for all stakeholders. Sports include leisure and entertainment activities, and the marketing of sports leisure and entertainment involves a wide variety in the sports industry (Liao et al., 2021). The behavior of Iranians in this market depends on the market situationmarket, economy, and infrastructure situation. Entertainment and leisure activities are profitable businesses. Indeed, entertainment involves amusement or performances people are willing to spend their money and time on. One of the aspects of entertainment is the sport (Kaser & Oelkers, 2021). In this regard, technology, e-sports, software applications, and sports games have added new depth to marketing entertainment-related sports (Kaser & Oelkers, 2021).

Based on the recognized challenges, sports startups can be divided into four categories, including startups in the field of services and education, startups in the field of manufacturing and production of sports equipment and advanced sports equipment, startups in the area of sports and club development processes, and startups in the area of games, entertainment and leisure time. Indeed, the sport is a vast area with many opportunities to start a startup, doubling the need to hold startup events and students. The sports startup is a new activity incorporating digital technological innovations into new business ideas. Innovation is a kind of change reflected in startups. Behind a startup is an entrepreneurial idea that can quickly become a reality and lead to a sustainable business (Ratten, 2020e). Based on the sports ecosystem, startups are active in sports equipment and facilities, laboratory equipment, rehabilitation, biomechanics, sports software, sports nutrition, sports tourism, environment, media, promotion, and development of sports for all, improving the process of club management, intermediaries between athletes and service providers, providing sports gadgets and improving sports productivity (Elyasi et al., 2018). For example, regarding the role of media in business (Basri & Siam, 2017; Gulati & Grover, 2022; Navaei Zamharir et al., 2020), we see many uses from and through the media in sports startups.

6. Conclusion

The present research finding showed that based on system and institutional infrastructure theory, the input factors can be categorized into stakeholders and infrastructure, support processes, policies and programs, and institutional factors. Finally, the output factors include the goals of sports development, such as the development of sports for all, championships, and professional and educational sports. In this regard, Buser et al. (2022) showed the logic of the sports ecosystem based on the systemic view and the set of sports actors who cooperate for value co-creation in the network. Moreover, the sports ecosystem, from the viewpoint of the business environment, consists of organizations, institutions, and sports actors (Buser et al., 2022; Ratten, 2020a; Salehian et al., 2021).

The challenges of each of these sectors can provide opportunities for developing sports startups.

The challenges of the sports ecosystem included difficultiesservice and education, sports equipment and technologies, sports club development, and entertainment and leisure. Evidence suggests that these challenges can present new opportunities for sports startups (Duffy et al., 2011; Griffiths et al., 2018; Mohayya et al., 2021; Ratten & Jones, 2020; Ratten & Thompson, 2020b; Rein & Memmert, 2016). For example, the lack of a systematic talent identification process can be an opportunity to provide a platform for a long-term vision for the sport.

According to this conceptual framework, startups in this sector can be divided into four categories: startups in services and training, production of sports equipment, sports club development processes, and games, entertainment, and leisure. Each of these categories can provide awareness and insight into launching sports startups.

6.1. Managerial Implications

The research findings suggest practical implications for investors and sports entrepreneurs. Firstly, by developing a framework for the sports ecosystem, this research seeks to provide managers, politicians, and planners with guidelines to recognize sports backgrounds. The existence of different actors and stakeholders in a sports startup ecosystem offers help in accessing finance. As Buser et al. (2022); Ratten & Thompson (2020b), actors or stakeholders play a vital role in a sports entrepreneurial ecosystem. Therefore, investors and entrepreneurs should harness social networks and infrastructures to identify sports startup opportunities regarding the factors that compromise sports development goals. In addition, considering the centralized structure of Iranian sports, the synergy among institutions through this structure should be planned and organized.

Secondly, this research determined challenges in sports based on the widespread and diverse sports ecosystem framework. As such, the challenges of stakeholders, infrastructures, and planning and processes regarding social and environmental situations at the macro level can co-determine which opportunities are appropriate for launching sports startups. Accelerators should communicate with sports organizations based on the sports economy potential. The sports ecosystem should encourage all actors to co-create value by recognizing its challenges through sports startup events. In this regard, empowering stakeholders or actors to develop skills by engaging with relevant institutions can be a strategy for amplifying the sports startup ecosystem. Governments and policymakers should provide platforms for knowledge sharing to encourage the establishment and expansion of sports businesses. This can be accomplished through educational forums or training that encourage various entities in the startup ecosystem, such as investors, entrepreneurs, and coaches, to share their experiences and profit from the sports sector.

Finally, by identifying the four main types of sports startups based on the sports ecosystem, sports managers and entrepreneurs may improve their decision-making in launching a startup due to their holistic and comprehensive view of the sports startup landscape. Therefore, we aim to advise all relevant communities, such as sports organizations, investors, and policymakers, to understand the wider opportunities and interrelated factors that affect the goals of sports startups within the sports ecosystem.

6.2. Limitations and Areas for Future Research

Like any research, this study has some limitations that should be considered when interpreting the findings. First, the research approach was qualitative, so the generalizability of the findings to other industries or populations should not be overstated. Additionally, the research was conducted in Iran, which may have unique socio-cultural situations compared to other countries, both developed and developing. Future research could examine the challenges and opportunities of sports startups based on their specific contexts using a quantitative approach, as opportunities and challenges may vary across different countries.

Second, we comprehensively investigated the sports ecosystem framework and identified challenges and opportunities accordingly. However, using an alternative theoretical approach to develop a model instead of a framework may be beneficial.

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