



Factors Affecting the Failure of Sports Startups in Iran

Zeinab Khaleghi Arani ¹ | Mina Mostahfezian ² | Davood Nasr Esfahani ³

1. Ph. D Candidate on Sport Management, Department of Physical Education and Sports Science, Najafabad Branch, Islamic Azad University, Najafabad, Iran, khaleghizeinab8@gmail.com.

2. Corresponding Author , Associate professor on sport management, Sport Medicine Research Center, Najafabad Branch, Islamic Azad University, Najafabad, Iran, dr.mostahfezian@gmail.com.

3 . Assistant Professor on sport management, Department of Physical Education and Sports Sciences, Esfahan (khorasgan) Branch, Islamic Azad University, Esfahan, Iran, dane@vahoo.com.

ARTICLE INFO

Article type :

Original Article

Article history:

Received: 03 November 2024

Received in revised form: 09 March 2025

Accepted: 08 April 2025

Publish online: 21 August 2025

Keywords:

Content Analysis

Failure

Economic Growth Drivers

Sports Startups

Structural Interpretive Modeling

ABSTRACT

This study aimed to conduct a structural interpretive modeling of factors affecting the failure of sports startups in Iran. The research methodology employed a mixed-method approach, with qualitative content analysis in the qualitative phase and structural interpretive modeling in the quantitative phase. The participants were selected based on their expertise, experience, representation, diversity, and collaboration capability. The purposive sampling method was used and snowball sampling strategy was employed to conducting interviews with 25 individuals based on theoretical saturation. The data collection tools consisted of semi-structured interviews for the qualitative phase and a 13x13 matrix for the quantitative phase. To ensure the validity and reliability of the results, credibility, transferability, confirmability, process audit, and intra-subject agreement strategies were utilized. The qualitative data analysis was performed through three stages of open, axial, and selective coding, while the quantitative data analysis involved structural interpretive modeling and MICMAC analysis. The findings revealed 13 influential factors on the failure of sports startups, categorized into four levels of relationships based on structural interpretive analysis. Accordingly, a hierarchical relationship model was developed, indicating that in the process of sports startup failure, the neglect of tangible indicators of customers, which stems from fundamental variables such as financial problems, ecosystem weakness, legal issues, and market uncertainties, becomes evident. This result demonstrates that the failure of sports startups follows a complex four-level process, and sports startups need to address all levels of weaknesses as they are interconnected like a chain.

Introduction

The world today stands at the threshold of the fourth industrial revolution, the signs of which appeared in the last quarter of the 20th century. One of the pillars of this revolution, and perhaps its most important aspect, is the emergence of an exceptional type of company called startups, with a high capacity for value creation and advancing economic mechanisms (El-amine & Mohammed, 2023). Startups are job creators, drivers of economic growth (Göttel et al., 2024), and innovative entities that often operate on a small scale, focusing on innovation, creativity, and technology to provide new solutions or offer services that did not previously exist (Sikki et al., 2024).

Startups mainly evolved at the end of the 20th century and the beginning of the 21st century (Venczel et al., 2024). In 2020, according to the Global Startup Ecosystem Report, the global startup economy generated nearly three trillion dollars in value (Marcon et al., 2024). However, despite the role that startups play in value creation, investing in startups is often associated with high risk, and many investments in this area do not yield the necessary returns, with 92% of them

How to Cite: Khaleghi Arani, Z., Mostahfezian, M., & Nasr Esfahani, D. (2026). Factors Affecting the Failure of Sports Startups in Iran. *Journal of New Studies in Sport Management*, 7(2), 1-15. DOI: 10.22103/jnssm.2025.24288.1344



failing in the first 3 years of operation (Setty et al., 2024). There is also ample evidence that the startup failure rate is around 90% (Szathmári et al., 2024), and 3 out of every 4 startups fail (Elamine & Mohammed, 2023).

The mechanisms, assumptions, interventions, and practical prescriptions for startups and entrepreneurs are fundamentally different, and various classifications have been mentioned for them (Felin et al., 2024). One type of startup that has experienced increasing growth is sports startups. Sports startups are a new type of business that are rapidly developing in global markets. They are a means of incorporating digital innovations into new business ideas, and these ideas can quickly become reality and lead to sustainable businesses (Ratten, 2020). Prominent startups in the field of sports can contribute to various sectors, including the promotion and development of sports activities, improving the process of club management and sports administration, providing gadgets that enhance sports activities, and providing analysis, advice, and solutions to improve athletes (Parvaz & Eidi, 2023).

Despite the growing growth of sports startups in the world, in Iran this area faces numerous challenges. According to a report by the Finnova Innovation Center in 2022, the number of active startups in the field of sports in Iran is estimated to be around 50, which is a low figure compared to other areas such as e-commerce and FinTech. In addition to the general challenges that all startups face in Iran, sports startups also grapple with specific problems (Raeei et al., 2024). These challenges include the lack of specialized investors in the sports sector, the absence of sufficient support infrastructure such as accelerators and specialized growth centers, issues related to intellectual property in sports, and difficulties in obtaining licenses for innovative sports activities (Mandallizadeh & Kaviani, 2023). Studies show that the failure rate of sports startups in Iran is also high, and many of them cease operations in the early stages (Mandalizadeh et al., 2022).

However, studies show that the chance of success in these startups is low (Arora et al., 2021; Raeei et al., 2024), and they face significant challenges, from regulatory issues to competition, which is why a large part of the efforts of entrepreneurs in this field ends in failure (Mandallizadeh & Kaviani, 2023). This is especially true in the Iranian sports industry, where sanctions, lack of access to raw materials, unfavorable economic conditions, difficulties in starting businesses, shortage of skilled manpower, etc., not only increase the risk of starting this type of business but also challenge its activities (Mandalizadeh et al., 2022). Therefore, it is not surprising that failure has become a prominent topic in the startup literature (Virágh et al., 2024). Because a startup is not only the embodiment of entrepreneurial passion but also the embodiment of the ambition, creativity, and courage of people who come together to turn ideas into reality, but in many cases, these ideas are not implemented, and failure occurs (Kovalov et al., 2024).

There is a consensus in the startup literature that the failure of a startup is rarely attributed to a single factor (Cantamessa et al., 2018), and the reasons for their failure can be classified into two main groups: internal and external factors (Öndas & Akpınar, 2021). However, the distinction between these categories is not always simple, and studies conducted in this area often list one or more factors affecting failure without providing a clear theoretical framework (Szathmári et al., 2024). For example, Parvaz and Eidi (2023) in a study aimed at identifying and analyzing the challenges of startups in the field of sports businesses, showed that six sub-themes of finance and credit, legal and regulatory, business and marketing, organizational and administrative, hardware and software, and lack of training, within the framework of three main themes of lack of financial support for businesses, the existence of strict rules and regulations, and the lack of manpower, are the challenges of startups in the field of sports businesses. Mandallizadeh and Kaviani (2023) in a study aimed at feasibility study of launching sports startups, concluded that economic, financial, environmental, technological, team, and market factors are essential components for launching a sports startup, and based on the analytical hierarchy process (AHP) approach, economic feasibility, human resources, finance, market, technology, and environment are of higher importance, respectively. Raeei et al. (2023), by examining sports startup accelerators, showed that strengthening and distributing the value chain, senior management support, monitoring global trends in sports products, diversification of activities and financial resources, empowering

individuals and groups, and having a clear vision and mission are the key factors of sports startup accelerators. Also, Mandalizadeh et al. (2022), by examining the obstacles to the growth of startups in the sports sector, reported managerial, socio-cultural, financial-administrative, legal-regulatory, human, and environmental obstacles.

In addition, Kovalov et al. (2024) showed that the main factors of startup failure, based on the characteristics of the issues that the startup owner faces, include marketing, assets, finance, investment, skills, experience and attitude, legal and regulatory issues, and product and model-related issues. Szathmári et al. (2024), in response to the question of why startups fail, reported that the main factors of startup failure are the lack of two competencies: information seeking and customer service orientation. Venczel et al. (2024), by examining the challenges of project and risk management of startups, showed that the challenges of startups are in the areas of business models, product, environment, organization, and customer/user. Ma'aji et al. (2024), by examining the challenges that Cambodian startups face when scaling up their activities, showed that these challenges are limited access to capital, employee-related issues, obstacles to attracting customers, intense market competition, and regulatory barriers. Finally, El-amine and Mohammed (2023), by analyzing the factors of startup failure, showed that product/market mismatch, lack of capital, highly competitive power, problems with laws and regulations, and the business model are the most important reasons for startup failure.

A review of past studies shows that failure is an almost inseparable phenomenon from startups, and the high failure rate has sparked discussions among researchers about diagnosing the causes of this phenomenon. Understanding the factors affecting failure and how to reduce its likelihood is crucial. However, in the research conducted, more attention has been paid to the challenges and problems that startups face than to the root causes of failure. In other words, the focus has been more on the future than on the reasons for past failures. On the other hand, the reasons for failure, which are more focused on challenges and problems, do not have a coherent theoretical structure, and so far, no study has specifically addressed the interpretive structural modeling (ISM) of the factors affecting the failure of sports startups in Iran. Most previous studies have focused more on enumerating challenges than on in-depth analysis of root causes and relationships between these factors. This research, by presenting an interpretive structural model, not only identifies the key factors of failure but also explores the complex and hierarchical relationships between these factors. This systemic approach helps to understand the problem of failure more deeply and lays the groundwork for providing more effective solutions.

The failure of sports startups in Iran not only neutralizes their expected positive effects but also imposes losses on the country's economy, as startups are recognized as one of the economic drivers. Although there are no accurate statistics on the failure of sports startups in Iran, empirical evidence suggests a high failure rate in this area. Therefore, it is necessary to prevent the early demise of these startups with proper management. The prerequisite for this management is, first and foremost, an accurate diagnosis of the reasons for failure. Without sufficient knowledge of the problem and the reasons for failure, it is not possible to conduct a proper pathology and provide effective solutions. The failure of a startup is a complex and multidimensional issue that is affected by various factors. Analyzing and explaining the relationships between these factors is also complex. Therefore, it is necessary to delve deeper into the layers of failure and pay attention to the relationships between the effective variables and their leveling so that the reasons for the failure of sports startups can be analyzed more accurately.

This research can be useful for various stakeholders, including sports startups, investors, policymakers, and researchers. Sports startups can use this research as a roadmap to identify their strengths and weaknesses and plan more accurately for the future. Investors can rely on the presented model to better assess the risk of investing in this area and make more informed decisions. Policymakers, by understanding the factors affecting failure more deeply, will be able to develop more effective support policies and programs for the development of this sector. Researchers can also use this model as a theoretical basis for conducting further studies in the field of sports startup failure. Ultimately, this research, by presenting a comprehensive and localized

model, will significantly contribute to the enrichment of the existing literature on startup failure, especially in the field of sports and within the context of Iran.

Therefore, the purpose of this study is to answer the question: What is the interpretive structural model of the factors affecting the failure of sports startups in Iran?

Methodology

This study employs a mixed-methods approach (qualitative and quantitative). In the qualitative section, the research strategy is thematic analysis, and in the quantitative section, interpretive structural modeling (ISM) is used. Both methods fall under the interpretive paradigm (Habibi & Afridi, 2022) because thematic analysis is used to identify the factors affecting the failure of sports startups, while ISM is employed to interpret and analyze the interrelationships, influence, and dependence of these factors.

The participants in this study were experts in the field of sports startups. They were selected based on the following criteria:

Expertise and experience: Individuals with in-depth knowledge and practical experience in sports startups were chosen to provide precise insights into the factors contributing to startup failure. Their ability to offer specialized analysis and detailed understanding was essential.

Representation: Participants were selected to represent various groups and organizations within the sports startup ecosystem, including entrepreneurs, accelerator managers, and consultants. This ensured diversity in perspectives and experiences.

Diversity: Participants were chosen to ensure diversity in terms of gender, age, expertise, and roles within sports startups. This diversity enriched the research data and allowed for the analysis of factors from multiple angles.

Collaboration capability: Participants who could effectively collaborate in different stages of the research were chosen. They needed to actively participate in both qualitative and quantitative analyses and provide valuable insights.

The sampling method was purposive, with a snowball strategy applied, where initial participants introduced other experienced individuals. The interviews were conducted with 25 participants until theoretical saturation was reached. These same participants were then utilized for the ISM analysis in the quantitative section to provide a comprehensive evaluation of the research findings.

The data collection tool in the qualitative section was semi-structured interviews. The interview questions were framed based on the research objectives and questions. Both general and specific questions were asked. Subsidiary questions were asked to further align with the main questions and obtain more information. For example, under the main question section, one of the questions posed was: What factors have led to the failure of sports startups in Iran? In the subsidiary question section, the content of the question was: How have these factors contributed to this situation? Do these factors still play a decisive role? In the quantitative section, a 13x13 square matrix was utilized. To ensure the validity and reliability of the results in the qualitative section, the following actions were taken (see Table 1):

Table 1. Validity and Reliability of Results in the Qualitative Phase

Validity and Reliability	Strategy	Technique
Validity	Credibility	Validation of the research process by 3 experts Using two coders for coding several interview samples
	Transferability	Feedback from three stakeholders in the sports business industry who did not participate in the research
	Confirmability	Recording and documenting all interviews
Reliability	Process audit study	Providing information to 3 participants in the study
	Intra-coder agreement	Analysis of two interviews by the researcher and another analyst, identifying similar and dissimilar

codes (with an agreement rate of 88%)

However, no action was taken to assess the validity and reliability of the matrix. This is because the questionnaire used in interpretive structural modeling is a standard matrix and differs from attitude measurement questionnaires with Likert scales, so concepts such as validity and reliability do not apply to this matrix. For data analysis in the interview analysis section, the Attride-Stirling (2001) thematic analysis method was used, which is one of the common coding methods in thematic analysis and is based on three categories of basic themes, organizing themes, and global themes. Moreover, for data analysis, structural equation modeling method was used, and ISM software Warfield was used for this analysis.

Results

A total of 25 individuals participated in this study, the majority of whom were male (72%), had a Master's degree (56%), and had between 5 to 10 years of experience (36%). Notably, experts in the field of sports startups comprised 32% of the participants, a higher proportion compared to any other single group of participants (Table 2).

Table 2. Characteristics of Participants in the Research

Variable	Category	Frequency	Percentage
Gender	Female	7	28
	Male	18	72
Education	Bachelor	5	20
	Master	14	56
	PhD	6	24
Work Experience	Less than 5 years	4	16
	5-10 years	9	36
	11-15 years	8	32
	More than 15 years	4	16
Type of Experience	Active in the field of sports startups	5	20
	Owner of sports startups	7	28
	Expert in the field of sports startups	8	32
	University Professor	5	20

By analyzing the interviews conducted in the coding phase, 52 basic themes (important opinions/concepts that were repeated) were identified from the data. Subsequently, in the focused coding phase, concepts with the same foundational idea were organized into 13 organizing themes (marketing weaknesses, customer neglect, organizational conflicts, poor management, ineffective product, employee indifference, team building weaknesses, financial issues, competitors, ecosystem weaknesses, legal issues, market uncertainties, and lack of IT infrastructure) and in the axial coding phase, organizing themes were structured into 2 global themes (external factors and internal factors) (Table 3).

Table 3. Factors of Failure in Sports Startups based on Thematic Analysis

Global Themes	Organizing Themes	Basic Themes	Interview Code
External Factors	Weak Marketing	Weak Marketing	P1, P20, P21
		Absence of Business Model	P2, P10, P13, P15
		Insufficient Market Information	P3, P4, P9, P10, P16, P17, P18
		Inappropriate Pricing	P5, P11, P12, P14, P20
		Lack of Marketing and Sales Strategies	P1, P19, P22, P24
		Lack of Suitable Distribution Channels	P12
	Neglecting Customers	Failure to Respond to Customers	P4, P7, P8, P23
		Customer Dissatisfaction	P2, P7, P11, P21
		Neglecting Customer Needs and Desires	P7, P11
		Disregarding Customer Negative Feedback	P11

Global Themes	Organizing Themes	Basic Themes	Interview Code	
Internal Factors	Organizational Conflicts	Internal Problems	P6, P13, P17, P22, P25	
		Lack of Trust -	P1, P13	
		Conflict Among Partners	P7, P14, P15	
		Misalignment Between Team and Investors	P9, P13, P20	
		Lack of Effective Cash Flow Management	P3, P11	
	Poor Management	Strategic Changes and Lack of Alternative Strategy	Poor Financial Resource Management	P3, 11, P22, P25
			Leadership and Team Management Deficiencies	P15
	Ineffective Product	Inadequate Planning	Inadequate Planning	P7, P19, P11, P14, P16, P20
			Unfriendly Product for Users	P11, P21
			Low Product Quality	P3, P11
			Lack of Product Innovation	P10, P12
	Employee Indifference	Low Product Value Added	Low Product Value Added	P1, P6, P12, P13, P17
			Lack of Commitment	P4, P9, P13, P15, P19
			Lack of Enthusiasm	P9, P15, P25
	Team Building Weakness	Weak Focus	Weak Focus	P3, P9, P15
			Lack of Adequate Team	P2, P5, P10, P14, P15, P19, P23
			Low Industry Experience of Founding Team	P3, P15
			Wrong Team Member Selection	P7, P15, P20
	Financial Issues	Lack of Coordination Among Founding Members	Lack of Coordination Among Founding Members	P15
			Funding Shortage	P3, P4, P7, P16, P23, P24
			Lack of Investors	P1, P7, P16
	Competitors	Unpredictable Costs	Unpredictable Costs	P7, P19
			Startup Exit from Competition	P11, P18, P21
			Startup Exit from Competition	P2
			Strong Competitors	P2, P14
Failure in Competitor Defeat			P2	
Ecosystem Weakness	Lack of Market Demand Research	Lack of Market Demand Research	P14, P22	
		Lack of Government Support	P4, P8, P11, P14, P17, P21, P23, P24	
		Low Effort in Two-sided Market -	P10, P17, P21	
Legal Issues	Lack of Communication between Investors and Startup Ecosystem	Lack of Communication between Investors and Startup Ecosystem	P3, P6, P13	
		Lack of Intellectual Property and Copyright Protection	P1, P2, P6, P9, P14, P17, P18, P20, P21, P22	
		Limited Copying	P6, P13	
		Copying	P2, P15, P16, P20	
Market Uncertainties	Market Monopoly	Market Monopoly	P18	
		Market Volatility	P1, P14, P21	
		Potential Market Absence	P2	
		Lack of Market Demand	P8, P11, P15, P23	
Lack of Information Technology Infrastructure	Low Speed Internet with Inadequate Bandwidth	Low Speed Internet with Inadequate Bandwidth	P12, P24	
		Absence of Necessary Infrastructure in the ICT	P5, P12, P15, P17, P22	
		Inappropriate Access to the Internet	P2, P15	
		Affordable Use of Internet	P15	

After identifying the factors influencing the failure of sports startups, the correlation between organizing themes (i and j) was examined. Four symbols (O, X, A, V) were used to evaluate the correlation between the factors.

V = If factor i influences factor j.

A = If factor i is influenced by factor j.

X = If factors i and j influence each other.

O = If factors i and j do not influence each other.

Table 4 shows the structural self-interaction matrix. According to this table, it can be observed that the factor "Weak Marketing (S1)" can be increased by the factor "Poor Management (S4)". Therefore, the relationship of these factors with "A" for input (1, 4) is shown in the structural self-interaction matrix. While the factor "Weak Marketing (S1)" contributes to increasing the factor "Neglecting Customers (S2)". Hence, the relationship "V" for input (1, 2) is shown in the structural self-interaction matrix.

Table 4. Structural Self-Interaction Matrix

Factor	Identifier	S ₂	S ₃	S ₄	S ₅	S ₆	S ₇	S ₈	S ₉	S ₁₀	S ₁₁	S ₁₂	S ₁₃
Weak Marketing	S ₁	V	A	A	X	A	A	A	X	A	A	A	X
Ignoring Customers	S ₂		O	O	O	O	O	A	O	A	A	A	O
Organizational Conflicts	S ₃			X	O	X	X	A	O	A	A	A	O
Poor Management	S ₄				O	X	X	A	O	A	A	A	O
Ineffective Product	S ₅					A	A	A	X	A	A	A	X
Employee Indifference	S ₆						X	A	O	A	A	A	O
Team Building Weakness	S ₇							A	O	A	A	A	O
Financial Issues	S ₈								O	X	X	X	O
Competitors	S ₉									A	A	A	X
Ecosystem Weakness	S ₁₀										X	X	O
Legal Issues	S ₁₁											X	O
Market Uncertainties	S ₁₂												O
Lack of Information Technology Infrastructure	S ₁₃												

Once the Structural Self-Interaction Matrix (SSIM) was obtained, symbols (O, X, A, V) were assigned to each relationship between the factors in the matrix to indicate the type of relationship between them. For further processing, these symbols had to be converted into binary digits (0 and 1) to be used in Interpretive Structural Modeling (ISM). The result of this conversion is the Initial Reachability Matrix, which represents the relationships between the factors in binary form.

The conversion process is as follows:

- Conversion of the V symbol: If the entry (i, j) in the SSIM is V, it indicates that factor i influences factor j. In the Initial Reachability Matrix, the entry (i, j) is converted to 1, indicating that i affects j. However, the entry (j, i), representing the reverse influence, is converted to 0, as j does not affect i.
- Conversion of the A symbol: If the entry (i, j) in the SSIM is A, it means that factor j influences factor i. In the reachability matrix, the entry (i, j) is converted to 0, and the entry (j, i) is converted to 1, indicating the reverse influence.
- Conversion of the X symbol: If the entry (i, j) in the SSIM is X, it signifies mutual influence between factors i and j. Therefore, both entries (i, j) and (j, i) are converted to 1.
- Conversion of the O symbol: If the entry (i, j) in the SSIM is O, it indicates no relationship between factors i and j. As a result, both entries (i, j) and (j, i) are converted to 0.
- This process is carried out so that all the symbols in the SSIM are converted into binary digits (0 and 1) in the Initial Reachability Matrix. This conversion allows for a clearer modeling of the influence between factors and enables more accurate analysis of the power and dependence of each factor (Table 5).

Table 5. Initial Access Matrix

Factor	S ₁	S ₂	S ₃	S ₄	S ₅	S ₆	S ₇	S ₈	S ₉	S ₁₀	S ₁₁	S ₁₂	S ₁₃	Penetration rate
Weak Marketing	1	1	0	0	1	0	0	0	1	0	0	0	1	5
Ignoring Customers	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Organizational Conflicts	1	0	1	1	0	1	1	0	0	0	0	0	0	5
Poor Management	1	0	1	1	0	1	1	0	0	0	0	0	0	5
Ineffective Product	1	0	0	0	0	0	0	0	0	0	0	0	1	4
Employee Indifference	1	0	1	1	1	1	1	0	0	0	0	0	0	6
Team Building Weakness	1	0	1	1	1	1	1	0	0	0	0	0	0	6

Factor	S ₁	S ₂	S ₃	S ₄	S ₅	S ₆	S ₇	S ₈	S ₉	S ₁₀	S ₁₁	S ₁₂	S ₁₃	Penetration rate
Financial Issues	1	1	1	1	1	1	1	1	0	1	1	1	0	11
Competitors	1	0	0	0	1	0	0	0	1	0	0	0	1	4
Ecosystem Weakness	1	1	1	1	1	1	1	1	1	1	1	1	0	12
Legal Issues	1	1	1	1	1	1	1	1	1	1	1	1	0	12
Market Uncertainties	1	1	1	1	1	1	1	1	1	1	1	1	0	12
Lack of Technology Infrastructure	1	0	0	0	1	0	0	0	1	0	0	0	1	4
Dependency	12	6	8	8	10	8	8	4	7	4	4	4	4	

Then, in Table 6, the final accessibility matrix was calculated by combining transferability. Transferability means a textual relationship in which if variable A is related to B and B is related to C, then A is necessarily related to C. The measurement of transferability was calculated by performing repeat power analysis (Table 6).

Table 6. Final Accessibility Matrix

Factor	S ₁	S ₂	S ₃	S ₄	S ₅	S ₆	S ₇	S ₈	S ₉	S ₁₀	S ₁₁	S ₁₂	S ₁₃	Penetration rate
Weak Marketing	1	1	0	0	1	0	0	0	1	0	0	0	1	5
Ignoring Customers	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Organizational Conflicts	1	1*	1	1	1*	1	1	0	1*	0	0	0	1*	9
Poor Management	1	1*	1	1	1*	1	1	0	1*	0	0	0	1*	9
Ineffective Product	1	1*	0	0	1	0	0	0	1	0	0	0	1	5
Employee Indifference	1	1*	1	1	1	1	1	0	1*	0	0	0	1*	9
Team Building Weakness	1	1*	1	1	1	1	1	0	1*	0	0	0	1*	9
Financial Issues	1	1	1	1	1	1	1	1	1*	1	1	1	1*	13
Competitors	1	1*	0	0	1	0	0	0	1	0	0	0	1	5
Ecosystem Weakness	1	1	1	1	1	1	1	1	1	1	1	1	1*	13
Legal Issues	1	1	1	1	1	1	1	1	1	1	1	1	1*	13
Market Uncertainties	1	1	1	1	1	1	1	1	1	1	1	1	1*	13
Lack of Technology Infrastructure	1	1*	0	0	1	0	0	0	1	0	0	0	1	5
Dependency	12	13	8	8	12	8	8	4	12	4	4	4	12	

In the accessibility matrix, each factor has a set of dependencies and a set of influences. Subsequently, to find the level of each factor, leveling is performed, and then the cone matrix is generated. The communion between factors based on reachability (impact or output) and antecedents (sensitivity or inputs) was determined. The first variable where the communion of two sets is equal to the accessible set will be the first level. Therefore, elements of the first level will have the most sensitivity in the model.

Table 7. Dividing the Final Accessibility Matrix into Different Levels

Factor	(R _i) Reachability	(A _i) Antecedents	(C _i) Communion	Level
Weak Marketing	13 ∙ 9 ∙ 5 ∙ 1	13 ∙ 12 ∙ 11 ∙ 10 ∙ 9 ∙ 8 ∙ 7 ∙ 6 ∙ 5 ∙ 3 ∙ 1	13 ∙ 9 ∙ 5 ∙ 1	2
Ignoring Customers	2	13 12 ∙ 11 ∙ 10 ∙ 9 ∙ 8 ∙ 7 ∙ 6 ∙ 5 ∙ 4 ∙ 3 ∙ 2 ∙ 1	2	1
Organizational Conflicts	7 ∙ 6 ∙ 4 ∙ 3	12 ∙ 11 ∙ 10 ∙ 8 ∙ 7 ∙ 6 ∙ 4 ∙ 3	7 ∙ 6 ∙ 4 ∙ 3	3
Poor Management	7 ∙ 6 ∙ 4 ∙ 3	12 ∙ 11 ∙ 10 ∙ 8 ∙ 7 ∙ 6 ∙ 4 ∙ 3	7 ∙ 6 ∙ 4 ∙ 3	3
Ineffective Product	13 ∙ 9 ∙ 5 ∙ 1	13 ∙ 12 ∙ 11 ∙ 10 ∙ 9 ∙ 8 ∙ 7 ∙ 6 ∙ 5 ∙ 3 ∙ 1	13 ∙ 9 ∙ 5 ∙ 1	2
Employee Indifference	7 ∙ 6 ∙ 4 ∙ 3	12 ∙ 11 ∙ 10 ∙ 8 ∙ 7 ∙ 6 ∙ 4 ∙ 3	7 ∙ 6 ∙ 4 ∙ 3	3
Team Building Weakness	7 ∙ 6 ∙ 4 ∙ 3	12 ∙ 11 ∙ 10 ∙ 8 ∙ 7 ∙ 6 ∙ 4 ∙ 3	7 ∙ 6 ∙ 4 ∙ 3	3
Financial Issues	12 ∙ 11 ∙ 10 ∙ 8	12 ∙ 11 ∙ 10 ∙ 8	12 ∙ 11 ∙ 10 ∙ 8	4
Competitors	13 ∙ 9 ∙ 5 ∙ 1	13 ∙ 12 ∙ 11 ∙ 10 ∙ 9 ∙ 8 ∙ 7 ∙ 6 ∙ 5 ∙ 3 ∙ 1	13 ∙ 9 ∙ 5 ∙ 1	2
Ecosystem Weakness	12 ∙ 11 ∙ 10 ∙ 8	12 ∙ 11 ∙ 10 ∙ 8	12 ∙ 11 ∙ 10 ∙ 8	4
Legal Issues	12 ∙ 11 ∙ 10 ∙ 8	12 ∙ 11 ∙ 10 ∙ 8	12 ∙ 11 ∙ 10 ∙ 8	4
Market Uncertainties	12 ∙ 11 ∙ 10 ∙ 8	12 ∙ 11 ∙ 10 ∙ 8	12 ∙ 11 ∙ 10 ∙ 8	4
Lack of Technology Infrastructure	13 ∙ 9 ∙ 5 ∙ 1	13 ∙ 12 ∙ 11 ∙ 10 ∙ 9 ∙ 8 ∙ 7 ∙ 6 ∙ 5 ∙ 3 ∙ 1	13 ∙ 9 ∙ 5 ∙ 1	2

The cone matrix was then calculated. This matrix is determined based on the ranking of the identified factor levels in the leveling stage. Additionally, the levels of each factor are recorded at the end of the column and row of each level (Table 8).

Table 8. Cone Matrix Form

Factor	S ₂	S ₁	S ₅	S ₉	S ₁₃	S ₃	S ₄	S ₆	S ₇	S ₈	S ₁₀	S ₁₁	S ₁₂	Level
Ignoring Customers	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Weak Marketing	1	1	1	1	1	0	0	0	0	0	0	0	0	2
Ineffective Product	1*	1	1	1	1	0	0	0	0	0	0	0	0	2
Competitors	1*	1	1	1	1	0	0	0	0	0	0	0	0	2
Lack of Technology Infrastructure	1*	1	1	1	1	0	0	0	0	0	0	0	0	2
Organizational Conflicts	1*	1	1	1	1	1	1	1	1	0	0	0	0	3
Poor Management	1*	1	1	1	1	1	1	1	1	0	0	0	0	3
Employee Indifference	1	1	1	1	1	1	1	1	1	0	0	0	0	3
Team Building Weakness	1	1	1	1	1	1	1	1	1	0	0	0	0	3
Financial Issues	1	1	1	1	1	1	1	1	1	1	1	1	1	4
Ecosystem Weakness	1	1	1	1	1	1	1	1	1	1	1	1	1	4
Legal Issues	1	1	1	1	1	1	1	1	1	1	1	1	1	4
Market Uncertainties	1	1	1	1	1	1	1	1	1	1	1	1	1	4
Level	1	2	2	2	2	3	3	3	3	4	4	4	4	

Next, the cone matrix was used to obtain the first structural visual output in a hierarchical direction of the variables (Figure 1).

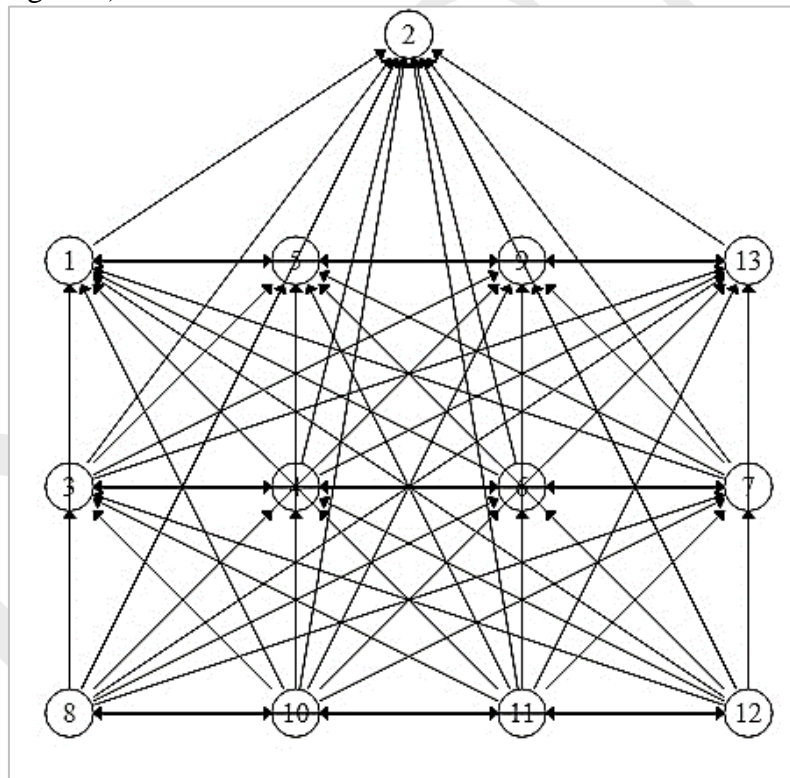


Figure 1. Initial Visual Structural Output Hierarchical Arrangement of Variables

The initial visual structural output, with numbers replaced by variable names and nodes displayed in rectangular shapes, was transformed into the final model in the reduced cone matrix stage. In this regard, for the improvement of model readability, additional paths were added while preserving levels and structures of factors and access to factors, and the final model was presented (Figure 2).

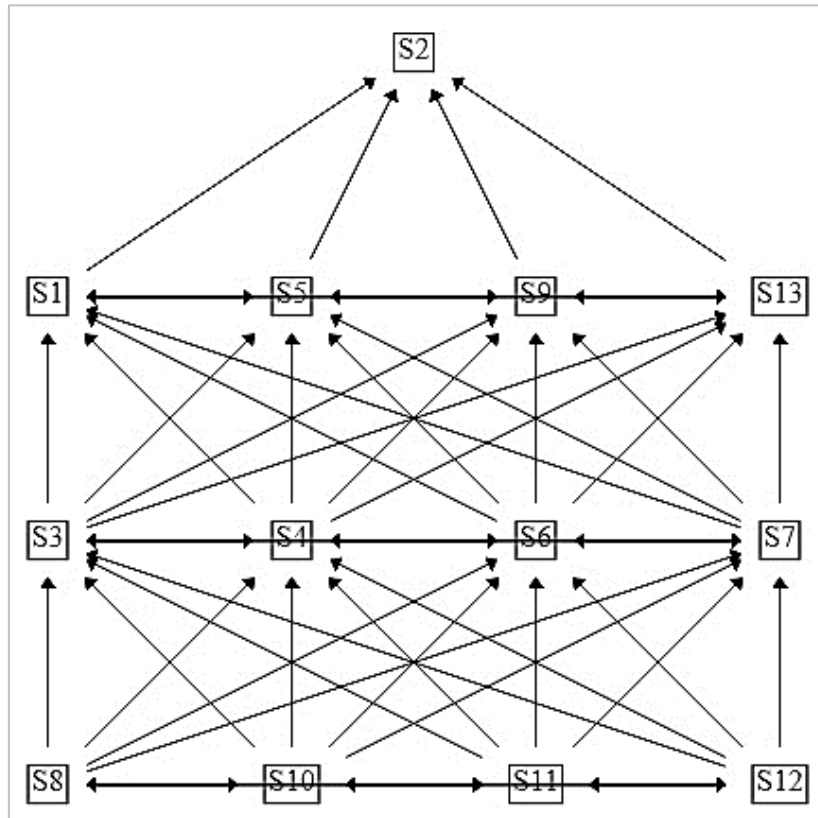


Figure 2. The Final Model of Factors Influencing the Failure of Iranian Sports Start-Ups

Finally, to determine the key variables, the Matrice d'Impacts Croisés Multiplication Appliquée a un Classement (MICMAC), created by Duperrin and Godet (1973) was used. Using the MICMAC analysis, factors can be classified into four clusters: (1) the autonomous cluster, consisting of factors with weak influence and dependence, (2) the dependent cluster, with low influence but high dependence, (3) the independent cluster, composed of factors with strong influence and weak dependence, and (4) the linkage cluster, including factors with strong influence and dependence.

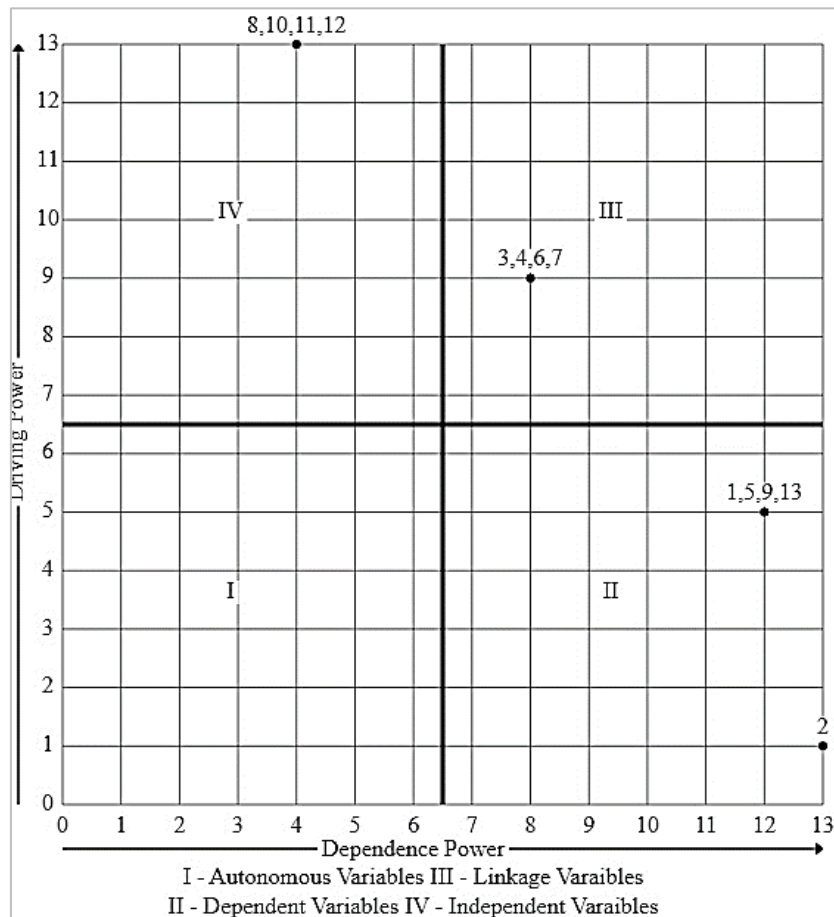


Figure 3. Results of MICMAC Analysis

Using the MICMAC analysis, the 13 factors influencing the failure of sports start-ups can be classified into three clusters based on their influence and dependence (Figure 3). The dependence-to-influence diagram shows that there are no factors in the autonomous cluster, meaning no factor is completely isolated from the system. The second cluster, the dependent factors, includes ignoring customers, weak marketing, ineffective product, lack of information infrastructure, and competitors. These factors have strong dependency and weak influence and are positioned at the higher levels of the hierarchical structural-interpretive model. Due to their strong dependencies, other factors are necessary to advance the dependent factors in achieving the system's goal. Additionally, it was revealed that factors like employee indifference, team building weakness, poor management, and organizational conflicts are in the linkage cluster. Furthermore, in the independent cluster, factors such as financial issues, ecosystem weakness, legal issues, and market uncertainties are identified. It is worth noting that these factors have strong influence and weak dependency, indicating they have a significant impact on other factors in the dependent cluster. Generally, these factors can be considered as the central issue for policymakers in setting strategies.

Discussion and Conclusion

The aim of this study was to model the structural-interpretive factors affecting the failure of sports startups in Iran. Through content analysis and interviews with experts, 13 factors related to the failure of sports startups were identified. The structural-interpretive analysis showed that these factors are classified into 4 levels and form a hierarchical model.

The results of this study are in line with the findings of previous research in some cases and not in line with them in others. For example, the findings of this research are not consistent with the results of the studies of Öndas and Akpınar (2021), who divide failure into internal and external factors, and Venczel et al. (2024), who examine the challenges of startups in the areas of business model, product and organization. Also, this study is not in line with the findings of Parvaz and Eidi

(2023), who point to the challenges caused by strict rules and regulations, and Mandalizadeh et al. (2022), who highlight managerial, legal and human resource barriers. In contrast, in the present study, the focus was on structural modeling and a deeper analysis of the relationships between factors.

The findings of this research are in contrast to the results of the study of Szathmári et al. (2024), because in this research it was found that the main factor in the failure of startups is not the lack of competence in information searching and customer orientation, and no evidence was found for them in this research.

In addition, the results of this study differ from the findings of Kovalov et al. (2024), who identified marketing, financial issues, investment, legal and regulatory issues, and product-related issues as reasons for startup failure, and Ma'aji et al. (2024), who reported challenges arising from limited access to capital, employee issues, and intense competition in the market, and El-amine and Mohammed (2023), who showed that product/market mismatch, lack of capital, high intensity of competition, and legal and regulatory issues are the reasons for startup failure. These differences can be due to the focus of this study on sports startups in Iran and the use of the structural-interpretive modeling method.

The results showed that "ignoring customers" is at the highest level of the hierarchical model, which indicates the influence of this factor on other factors of the system and in a way the goal of the system. This finding emphasizes the central role of customers in the success or failure of startups. Sports startups in Iran should pay special attention to the needs and preferences of their customers and design their products or services in a way that creates added value for customers. Failure to communicate correctly with customers and not being responsive to their needs can increase the probability of failure. This issue has also been emphasized in previous studies, such as the research of Parvaz and Eidi (2023).

Ignoring customers in the process of failure of sports startups is caused by factors such as inefficient products, poor marketing, lack of information technology infrastructure and competitors. This result shows that if a sports startup offers inefficient products, performs poorly in marketing, does not have sufficient information technology infrastructure, or is unable to compete with its competitors, its probability of failure increases. Therefore, focusing on customer needs and preferences, providing efficient products, appropriate marketing, developing information technology infrastructure, and accurately identifying competitors can help sports startups avoid failure.

The factors of the second level of the model, including employee indifference, poor team building, organizational conflicts and management weakness, are themselves influenced by lower-level factors and have a destructive effect on the life of sports startups. The employees of a sports startup should be enthusiastic and energetic and actively participate in the development and progress of the company. Employee indifference and lack of motivation can lead to a decrease in the performance and competitiveness of the startup. On the other hand, effective team building and the existence of positive relationships and high cooperation between team members are key factors in the success of a sports startup. Weakness in team building can lead to internal differences, incoordination and decreased employee motivation. Organizational conflicts can also reduce the efficiency and performance of individuals and teams in a sports startup. Inconsistencies and conflicts between team members, different parts of the organization, or different management strategies can hinder the progress and growth of the business. Finally, strong and intelligent leadership and management play a decisive role in the success of sports startups. If management fails to implement appropriate plans and strategies, it will have a negative impact on the company's performance and success. These findings emphasize the importance of internal factors of the organization and the key role of management and employees in the success of startups, a topic that has also been mentioned in the studies of Mandalizadeh et al. (2022), and Kovalov et al. (2024).

At the lowest level of the hierarchical model, factors such as financial problems, ecosystem weaknesses, legal issues, and market uncertainties affect the failure of sports startups. Financial problems, including lack of capital, inefficient financial management, high costs and low revenues, can lead to serious financial problems and ultimately the failure of the startup. On the other hand, the ecosystem is the space in which the startup operates and includes stakeholders, customers, competitors and other related factors. Ecosystem weakness can lead to startup isolation, lack of

cooperation with other members of the ecosystem, poor communication and activity in a non-competitive environment, which can lead to the failure of the sports startup. In addition, the sports market is affected by various factors such as changes in consumer trends, technological advances, etc., which can increase uncertainty in the sports market. Inability to anticipate and adapt to these changes can lead to the failure of sports startups.

MICMAC analysis showed that financial problems, ecosystem weaknesses, legal issues and market uncertainties are among the independent variables. The characteristic feature of these factors is the highest level of influence on the system, and the state and changes of the system depend on them, because their influence on other factors is relatively small, and a change in them leads to a change in other factors related to the failure of sports startups. Therefore, these forces should be recognized as key environmental forces affecting the activities and future interactions of sports startups, and their conditions should be constantly monitored for policy making and planning, because changes in these factors can lead to changes in other related factors.

It was also found that in the linkage cluster, there are factors such as employee indifference, poor team building, management weakness, and organizational conflicts. The characteristics of the factors of this cluster are that they have both high penetration power and high dependence power. These factors are located around the diagonal line of the matrix in the upper right area of the influence matrix, and their nature is mixed with instability, because any action or change on them will lead to reactions and changes in other indicators. They can be the subject of actions and reactions of policymakers and be given special attention in planning and action design. Therefore, these factors are sometimes called target variables or "risk variables", because due to their higher influenceability and uncertainty compared to influential and influenced variables, they are considered more suitable targets for focusing actions and plans.

The influence-dependence diagram showed that factors such as ignoring customers, inefficient products, poor marketing, lack of information technology infrastructure, and competitors are among the dependent factors. These factors have high dependence power and low penetration power and are placed at higher levels of the interpretive structural model. The characteristic feature of these dependent or influenced factors is that they are very sensitive to the evolution of the factors of the independent and linkage clusters. Since they have higher dependence, it is possible to strive and plan to achieve the desired future or reduce their negative effects by coordinating and influencing them. In this respect, these factors can be considered as output indicators for the failure of sports startups.

In general, the findings of the research show that the failure of sports startups is a complex process that is pursued at four levels. In this process, a tangible indicator is ignoring customers, which starts from fundamental variables such as financial problems, ecosystem weaknesses, legal issues, and market uncertainties. Based on this result, reasonable financial planning, reducing unnecessary costs and seeking financial resources to strengthen financial strength and prevent financial problems; cooperation and close communication with other members of the ecosystem, interaction with business partners, coaches, players and stakeholders; Communicating with lawyers and obtaining sufficient information about laws related to the sports industry, improving legal management, anticipating and solving legal issues, and finally analyzing the market and anticipating future changes to prevent failure are recommended for sports startups.

This study faced limitations that should be considered when generalizing the findings. One of the main limitations is the lack of focus on a specific sector among sports startups in Iran. Sports startups operate in various fields, including technology-based startups, sports media, and those related to sports equipment. Focusing on a specific sector can provide more accurate results. Therefore, future research can focus on a specific category of sports startups to better assess the impact of the identified factors. In addition, alternative methods, such as the analytical hierarchy process (AHP) or fuzzy DEMATEL, can be used to analyze the relationships between the identified factors.

Future research should be conducted with the aim of developing more comprehensive and accurate models that, in addition to economic and managerial factors, take into account cultural, social and emerging technologies such as artificial intelligence and blockchain in sports startups. These

technologies can have a direct impact on the success or failure of startups. In addition, comparative studies between sports startups in different countries can help identify region-specific factors. Finally, by identifying the key factors of sports startup failure, this study provides valuable insights for policymakers and managers in formulating support policies and programs. It is recommended that support policies for sports startups focus on creating information technology infrastructure, improving relevant laws and regulations, and providing specialized training in marketing and team building. Government support programs can also play a fundamental role in strengthening the sports startup ecosystem and increasing their chances of success.

Ethical Considerations

Compliance with ethical guidelines

Ethical points have been observed.

Funding

No specific financial resources have been used.

Authors' contribution

All authors have contributed to the design and implementation of this study.

Conflict of interest

There is no conflict of interest

Acknowledgment

We appreciate the assistance and cooperation of all the people who helped us during and completing this research. Thank you for devoting your time and expertise to advance scientific knowledge.

References

- Arora, A., Fosfuri, A., & Rønde, T. (2021). Waiting for the payday? The market for startups and the timing of entrepreneurial exit. *Management Science*, 67(3), 1453-1467.
- Attride-Stirling, J. (2001). Thematic networks: an analytic tool for qualitative research. *Qualitative research*, 1(3), 385-405.
- Cantamessa, M., Gatteschi, V., Perboli, G., & Rosano, M. (2018). Startups' roads to failure. *Sustainability*, 10(7), 2346.
- Duperrin, J. C., & Godet, M. (1973). Méthode de hiérarchisation des éléments d'un système: essai de prospective du système de l'énergie nucléaire dans son contexte sociétal (Doctoral dissertation, Centre national de l'entrepreneuriat. Paris, France.
- El-amine, N. M., & Mohammed, D. (2023). Analysing startups failure factors: evidence from CB Insights Tech market intelligence platform. *Journal of Economic Growth and Entrepreneurship*, 6(1), 10-30.
- Felin, T., Gambardella, A., Novelli, E., & Zenger, T. (2024). A scientific method for startups. *Journal of Management*, 2(1), 1-25.
- Finnova. (2022). Innovation Accelerators. Retrieved March 10, 2024, from <https://technovation.ir/workspace/finnova>
- Göttel, V., Lichtinger, Y., & Engelen, A. (2024). Rethinking new venture growth: A time series cluster analysis of biotech startups' heterogeneous growth trajectories. *Long Range Planning*, 57(2), 102427.
- Habibi, A., & Afridi, S. (2022). *Multi-criteria decision making*. Narvan Publications.
- Kovalov, B. L., Karepina, A. S., & Ponomarenko, I. O. (2024). The essence of startup: factors of success and failure. *Mechanism of an economic regulation*, 1(103), 9-16.
- Mandalizadeh, Z., Zohrevandian, K., & Azimi, M. (2022). Identifying Barriers to Startup Growth in the Sports Sector and Providing Solutions *Strategic Studies of Sport and Youth*, 22(62), 385-404.
- Mandallizadeh, Z., & Kaviani, E. (2023). Feasibility Study of Launching Sports Startups: A Case Study of the Sports Shoe Industry. *Journal of Business in Sports*, 3(2), 115-133.
- Ma'aji, M. M., Barnett, C., Han, K. T., Islam, M., & Haruna, A. A. (2024). Challenges Cambodian Startups Face when Scaling up their Operations. *Kurdish Studies*, 12(1), 600-613.

- Marcon, A., Ribeiro, J. L. D., Olteanu, Y., & Fichter, K. (2024). How the interplay between innovation ecosystems and market contingency factors impacts startup innovation. *Technology in Society*, 76, 102424.
- Öndas, V., & Akpinar, M. (2021). Applying the SHELL model to study the causes of high-tech start-up failures and finding ways to prevent them. *Finnish Business Review*, 1(8), 10-20.
- Parvaz, M., & Eidi, H. (2023). Identification and analysis of startup challenges in the field of sports businesses using thematic analysis. *Sport Management*, 15(2), 167-181.
- Raei, F., Safania, A., Farahani, A., & Ghasemi, H. (2024). Identifying accelerating factors for sports startups (a mixed approach). *Research in Sports Management and Motor Behavior*, 14(27), 183-201.
- Ratten, V. (2020). Sport Startups: What Does the Future Hold? In *Sport Startups: New Advances in Entrepreneurship* (pp. 105-116). Emerald Publishing Limited.
- Setty, R., Elovici, Y., & Schwartz, D. (2024). Cost-sensitive machine learning to support startup investment decisions. *Intelligent Systems in Accounting, Finance and Management*, 31(1), e1548.
- Sikki, N., Aripin, Z., & Fitrianti, N. G. (2024). Business innovation and critical success factors in digital transformation and challenging times: An econometric analysis of startup viability and success. *KRIEZ ACADEMY: Journal of development and community service*, 1(2), 1-15.
- Szathmári, E., Varga, Z., Molnár, A., Németh, G., Szabó, Z. P., & Kiss, O. E. (2024). Why do startups fail? A core competency deficit model. *Frontiers in Psychology*, 15, 1299135.
- Venczel, T. B., Berényi, L., & Hriczó, K. (2024). The Project and Risk Management Challenges of Start-ups. *Acta Polytechnica Hungarica*, 21(2), 151-166.
- Virágh, E. A., Tímár, G., & Pecze, K. (2024). Startup success from the founder's perspective. *Society and Economy*, 2(3), 1-19.