

Investigate the mediating role of entrepreneurial passion in the impact of digital innovation on the performance of new sports businesses

ABSTRACT

Purpose: The purpose of this research was to investigate the mediating role of entrepreneurial passion in the impact of digital innovation on the performance of start-up sports businesses from the perspective of sports science students of Mohaghegh Ardabili University.

Methodology: The research method was applied in terms of purpose and descriptive-survey in terms of collection. The statistical population of the present study was 524 undergraduate, master's and doctorate students of sports sciences at Mohaghegh Ardabili University. Cohen's method was used to determine the sample size, That 240 people were determined, and due to the existence of some incomplete questionnaires, 224 questionnaires were approved and the random sampling method was simple. The measurement tools included the job enthusiasm questionnaire (Kardon and Kirk, 2017), the digital innovation questionnaire (Kianfar and Mousavi, 2014) and the performance questionnaire of the new sports business (Zia and Totifar Tehranpour, 2017). The validity of the questionnaires was measured using diagnostic, convergent and divergent validity criteria and to determine the reliability of questionnaires of entrepreneurial enthusiasm, digital innovation and the performance of start-up sports businesses, Cronbach's alpha coefficient was obtained as 0.83, 0.88 and 0.76, respectively, which shows that all three questionnaires have good reliability. Structural equation model was used to analysis the research hypotheses using SPSS version19 and AMOS version23 software.

Findings: The findings of the research showed that the beta coefficient of digital innovation on the performance of start-up sports businesses was 0.98, entrepreneurial enthusiasm was reported as 0.30 on the performance of start-up sports businesses, and digital innovation on entrepreneurial enthusiasm was reported as 0.47. Therefore, based on Baron and Kenny's table, it can be concluded that entrepreneurial passion plays a partial mediating role in the effect of digital innovation on the performance of new sports businesses.

Originality: The originality of the article is that sports science students, especially post-graduate students, if they have an entrepreneurial passion, can start new businesses in the field of sports science by using digital innovations in today's era.

Keywords

Entrepreneurship Passion; Digital Innovation; Business Performance; Ardabil.

بررسی نقش واسطه اشتیاق کارآفرینی در تأثیر نوآوری دیجیتال بر عملکرد کسب و کارهای نوپای ورزشی

چکیده

هدف: هدف از انجام این تحقیق بررسی نقش واسطه اشتیاق کارآفرینی در تأثیر نوآوری دیجیتال بر عملکرد کسب و کارهای نوپای ورزشی از دیدگاه دانشجویان علوم ورزشی دانشگاه محقق اردبیلی بود.

روش: روش تحقیق از نظر هدف کاربردی و از لحاظ گردآوری توصیفی-پیمایشی بود. جامعه آماری پژوهش حاضر، دانشجویان کارشناسی، کارشناسی ارشد و دکتری علوم ورزشی دانشگاه محقق اردبیلی به تعداد ۵۲۴ نفر بودند. برای تعیین حجم نمونه از روش کوهن استفاده شد که در نهایت ۲۴۰ نفر تعیین شدند که به دلیل وجود برخی از پرسشنامه های ناقص ۲۲۴ پرسشنامه مورد تایید قرار گرفت و روش نمونه گیری به صورت تصادفی ساده بود. ابزار اندازه گیری شامل پرسشنامه اشتیاق شغلی (کاردون و کیرک، ۲۰۱۷)، پرسشنامه نوآوری دیجیتال (کیانفر و موسوی، ۱۴۰۰) و پرسشنامه عملکرد کسب و کار نوپای ورزشی (ضیا و طوطی فر تهرانیپور، ۱۳۹۷) بود. روایی پرسشنامه ها با استفاده از معیارهای روایی تشخیصی، همگرا و واگرا مورد سنجش قرار گرفت و برای تعیین پایایی پرسشنامه های اشتیاق کارآفرینانه، نوآوری دیجیتال و عملکرد کسب و کارهای نوپای ورزشی ضریب آلفای کرونباخ به ترتیب ۰/۸۳، ۰/۸۸ و ۰/۷۶ به دست آمد که نشان می دهد هر سه پرسشنامه از پایایی مطلوبی برخوردار هستند. برای تجزیه و تحلیل فرضیه های تحقیق از مدل معادلات ساختاری و به وسیله نرم افزار SPSS ورژن ۱۹ و AMOS ورژن ۲۳ استفاده شد.

یافته ها: یافته های تحقیق نشان داد که ضریب بتای نوآوری دیجیتال بر عملکرد کسب و کارهای نوپای ورزشی ۰/۹۸، اشتیاق کارآفرینانه بر عملکرد کسب و کارهای نوپای ورزشی ۰/۳۰ و نوآوری دیجیتال بر اشتیاق کارآفرینانه ۰/۴۷ گزارش گردید. بنابراین با توجه به یافته های تحقیق می توان نتیجه گرفت که براساس جدول بارون و کنی، اشتیاق کارآفرینانه در تأثیر نوآوری دیجیتال بر عملکرد کسب و کارهای نوپای ورزشی نقش میانجی جزئی دارد.

اصالت و ابتکار مقاله: اصالت مقاله این است که دانشجویان علوم ورزشی خصوصاً دانشجویان تحصیلات تکمیلی اگر اشتیاق کارآفرینی داشته باشند با استفاده از نوآوری های دیجیتال در عصر حاضر، باعث راه اندازی کسب و کارهای جدید در حیطه علوم ورزشی شوند.

کلید واژه

اشتیاق کارآفرینی، نوآوری دیجیتال، عملکرد کسب و کار، اردبیل

1. Introduction

Digital innovation refers to the use of new technologies to improve products, services, and processes, and it plays a vital role in the world of sports. This type of innovation can include the development of new applications to enhance interaction between fans and teams, the use of analytical data to improve athletes' performance, or the design of engaging digital experiences for customers (Guo et al., 2022). The positive effects of digital innovation on business performance include increased customer satisfaction, improved operational processes, and the ability to attract new customers (Bhatnagar & Ramachandran, 2023). On the other hand, entrepreneurial enthusiasm plays a key role in the implementation of these innovations. Highly passionate entrepreneurs are more inclined to take risks and experiment with new technologies. These individuals not only seek to identify opportunities but are also actively engaged in creating and leveraging new innovations (Lakshmi et al., 2023). For example, an entrepreneur in the sports industry may use data analysis to identify new trends and, based on that, design services or products that meet customer needs. The mediating role of entrepreneurial enthusiasm in the relationship between digital innovation and the performance of sports startups is highly significant. When entrepreneurs are enthusiastic about creating innovations and adopting new technologies, their chances of successfully implementing these innovations increase. Therefore, fostering this enthusiasm in entrepreneurs can serve as a catalyst for the development and advancement of digital technologies in sports businesses. Ultimately, this process can lead to better business performance and a competitive edge in the intense market (Chesbrough, 2010).

Enthusiasm is generally an important behavioral driver and refers to a person's strong and positive desire for entrepreneurial activities. Passion is related to creative problem solving, it is a manifestation of creativity using available resources. Enthusiasm creates positive feelings, excitement and energy (Naghizadehbaghi et al., 2024). Entrepreneurial passion involves positive emotions and attitudes towards activities that are essential to an individual's personal identity (Hacklin et al., 2018). Passion is regarded as the core of entrepreneurship and can emerge as a vital element in measuring entrepreneurial behavior, as well as in the process of creating businesses and their outcomes (Crippa et al., 2021). Among various types of entrepreneurial passion, the passion for business development and the passion for innovation contribute significantly to the longevity of a company (Bernardus et al., 2024). Habibi et al. (2023) assert in their study that entrepreneurial passion significantly influences entrepreneurial self-efficacy and entrepreneurial intention. Consequently, individuals exhibiting high levels of entrepreneurial enthusiasm are more likely to embark on entrepreneurial ventures. Vallerand (2015) believes that the object of one's passion can encompass various aspects such as an activity, an object, another person, or even abstract concepts like ideas, causes, or goals. Cardon & Kirk., (2017) concluded that entrepreneurial passion stems from goals associated with growth, people, products or services, competition, innovation, and social mission, respectively. Although creating entrepreneurship causes innovation, job creation and improvement of human resources

(Van Praag & Vesloot, 2007). But past research reported that only a small percentage of people in the society engage in entrepreneurial activities (Bosma et al., 2008). Sports is one of the most important and essential factors for ensuring the happiness and vitality of the society and it is known as one of the fastest growing sectors and related to the main economic sectors in the world; Therefore, this has created extensive developments and job opportunities (Alizadeh et al., 2015). Sports is a unique and dynamic industry that can be entrepreneurial in various sectors (Ciletti, 2012). Start-up businesses are organizations established by entrepreneurs to develop new products and services in environments characterized by escalating uncertainty. (Henseler & Chin, 2014). Parent and Seguin (2017) also defines a start-up business as a business that is designed for rapid growth. When the term start-up business is used, the characteristics of value creation, opportunism, innovation, technologist, evolutionist and forward-looking are considered (Mushtaq et al., 2011). Sports startups face a unique set of challenges, including fierce competition, rapid change, and the need for continuous innovation (Xi et al., 2023). In addition, sports startups, known as innovators in entrepreneurship, have revolutionized the field in less than a decade (Bocken & Snihur, 2020). On the other hand, the sports industry, as the sixth most profitable industry in developed countries, has attracted the attention of many idea owners, entrepreneurs and innovation centers (Hattink & Wichers, 2021). Rodriguez et al. (2010) stated that there is a corporate entrepreneurship issue in a company when it deals with product and market innovation.

Allal-Chérif et al (2024) concluded in their research that entrepreneurs with characteristics such as courage, creativity, innovation, ability to transfer and adapt to problems can achieve success in this competitive industry, especially in areas that are still in the stages of development has overcome obstacles and progress in the evolving and fast field of electronic sports. Also, Paul et al (2023) found out in a research titled digital entrepreneurship research that research related to digital entrepreneurship is developing and various axes such as the use of new technologies, its effects on society and economy, as well as the role of governments and non-profit organizations in this field have been examined. Habibi et al (2023) In a study titled " Investigating the mediation of entrepreneurial awareness, entrepreneurial self-efficacy and entrepreneurial intention in the effect of entrepreneurial enthusiasm on entrepreneurial behavior", they concluded that entrepreneurial passion has an effect on entrepreneurial behavior. In addition, entrepreneurial awareness, entrepreneurial intention and entrepreneurial self-efficacy were found to mediate this relationship. Bostan and Ghorbanian (2023) in a research concluded that market performance has more effects on entrepreneurial motivation than entrepreneurship education. In this regard, Nematollahi et al. (2022) in a study came to the conclusion that Entrepreneurial leaders help promote creativity and innovation by strengthening employees' self-confidence in entrepreneurial skills. Also, Scillitoe & Birasnav (2021) about the effects of ease of entering the start-up market showed that university, culture of creativity, innovation and entrepreneurial passion have a positive relationship with the ease of entering the market by Indian start-up companies; but the government assistance related to the ease of entering the market is not significant. Also, in a research, Ratten (2020) reached

this conclusion in her research titled "Sports Innovation Associations and the Complexity of Issues in Sports Companies" that for the development of start-ups related to sports, it is necessary to understand the importance of the role of innovation, enthusiasm and creativity in the field of sports in the society. Kishani et al.(2020) showed in their research that strategic entrepreneurship and institutional environment have an effect on the performance of sports businesses. Spreading and improving the entrepreneurial culture, mentality and leadership along with the development of innovation through providing practical training to sports entrepreneurs and developing facilitating laws and improving environmental values can help the better performance of sports businesses. Zia and Toutifar Tehranpour (2019) In their study, it was found that there is a positive and significant correlation between entrepreneurial orientation and performance, as well as between electronic readiness and the performance of emerging sports businesses. Kim et al (2018) showed in their research that the enthusiasm and will of the entrepreneur is one of the important and useful factors for the success of start-up businesses. Kos et al.'s research (2018) showed that sports science students with the use of technological creativity as the ability to reach ideas and transform them into new phenomena in order to achieve human interests and goals in the context of sports, can be the factor of prosperity and progress of useful innovations in this field. Aminikhiabani (2016) concluded in the research that the approach of cultivating entrepreneurial people and developing entrepreneurial spirit and passion in this field is that people are trained to replace the old technology with new technology.

In today's era, with the increasing development of digital technologies, start-up businesses in the field of sports are also dependent on a close relationship with these technologies. For a deeper understanding of this relationship and its impact on the performance of these businesses, research on the mediating role of entrepreneurial passion in promoting digital innovation and its impact on improving the performance of these industries is necessary. Many entrepreneurs in the sports industry have been unable to identify the connection between entrepreneurial passion and innovation. Additionally, current social and economic challenges increase the necessity of finding new and sustainable solutions, and some areas have yet to fully leverage digital innovation. Therefore, this research can help identify and address existing shortcomings and improve the overall performance of the sports industry. Conducting this research is essential for several reasons. Firstly, identifying new opportunities for creating digital innovation-based products and services in the sports industry can help entrepreneurs attract and retain customers. Secondly, understanding the relationship between digital innovation and entrepreneurial enthusiasm can lead to improved business performance and the development of effective strategies. The novelty of this research lies in examining the relationship between digital innovation and entrepreneurial passion in the sports industry; dimensions that have received less attention in the existing literature. This research identifies emerging technologies such as artificial intelligence, big data analytics for personalized customer experiences, and social media, which can enhance customer experiences and improve the performance of sports businesses. Moreover, the research aims to develop new business models that

are shaped by evolving customer needs and digital innovations. The findings of this research can provide practical solutions for students, entrepreneurs, and sports managers to gain a competitive advantage and improve their performance by leveraging digital innovations. This study, therefore, aims to examine more closely how digital innovation impacts the performance of sports startups and the mediating role of entrepreneurial enthusiasm. The findings of this research could assist students, entrepreneurs, and industry practitioners in gaining a better understanding of these relationships, enabling them to adopt more effective strategies for implementing digital innovations in their startups. This research may provide a foundation for future studies in the areas of innovation, entrepreneurship, and the development of sports businesses. Ultimately, what is the mediating role of entrepreneurial passion in the effect of digital innovation on the performance of sports businesses?

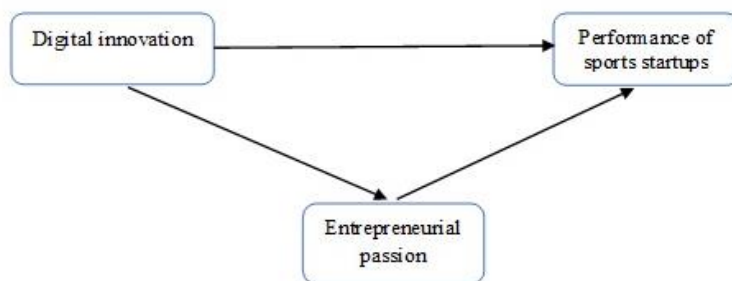


Figure 1. Conceptual framework of the research

2. Methodology

The present study was applied with a descriptive-survey research method. A quantitative research method that was carried out by means of field. The statistical population of the research consists of sports science students of Mohaghegh Ardabili University. According to the statistics and information center of the university, the total number of undergraduate, master's and doctorate students in sports sciences was 524. Various methods have been considered to determine the sample size that finally, the sample size was calculated using Cohen's formula based on statistical power analysis. To determine the sample size based on Cohen's formula, the power of the test was 0.80 and the effect size was 0.30 equal to 218 and 10% was added to the statistical sample size due to the possibility of incomplete questionnaires and finally, the total statistical sample size was determined to be 240 people, and due to the existence of incomplete questionnaires, 224 questionnaires were analysed. The sampling method was chosen by simple random sampling. Measuring tools included: 1- Entrepreneurial Enthusiasm Questionnaire (Cardon & Kirk, 2017), which consists of 15 items in 5 components of growth and development, social mission, products and services, competition and invention, 2- Digital innovation questionnaire (Kianfar and Mousavi, 2021), which consists of 14 questions in 3 components of digital innovation, digital capabilities and digital orientation and 3- Performance Questionnaire of New

Sports Businesses (Zia and Toutifar Tehranpour, 2018), which is made up of 20 questions in 5 components of innovation, risk-taking, pioneering, aggressive behavior and independence. The content and form validity of the questionnaires were confirmed by 10 management and entrepreneurship professors and Then, Cronbach's alpha reliability was reported as 0.83 for the entrepreneurial passion questionnaire, 0.88 for the digital innovation questionnaire, and 0.76 for the sports start-up business performance questionnaire. According to research findings, the normality of all components was confirmed. To analyze the statistical data, descriptive statistics methods such as calculating the mean, standard deviation, and other relevant measures were employed. In the inferential statistics section, the Kolmogorov-Smirnov test was used for the normality of the data, and all the components of the questionnaires were reported as normal. For analyzing the research hypotheses, a structural equation model (SEM) was employed using SPSS version19 and AMOS version23 software.

3. Results

The research findings have been analyzed in two parts that the first part is related to demographic findings, including gender, educational level, educational orientation and academic period and in the second part, the data related to the questionnaires were analyzed using structural equations with AMOS version23 software.

Table 1. . Demographic findings

Variables		Frequency	Frequency percentage
Gender	Men	129	57.6
	Women	95	42.4
Education level	Masters	117	52.2
	Senior	89	39.7
	Philosophiae Doctor Degree(Ph.D)	18	8.0
Academic orientation	Physical Education and Sports Science	88	39.3
	Sport physiology	66	29.5
	Sport Management	47	21.0
	Sports biomechanics	23	10.3
Study period	Daily	148	66.1
	at night	76	33.9

In Table 1, the demographic findings of male and female students are reported according to gender, educational level, field of study, and academic period. Descriptive analysis of research variables for the main research factors is presented in Table 2.

Table 2. Descriptive analysis of research variables

Variables		Num	Median	middle	St.D	Variance	Range	Min	Max
Enthusiasm entrepreneurship	Development	224	3.95	4.00	0.67	0.458	4	1	5
	Social mission	224	3.79	4.00	0.59	0.356	4	1	5
	Products and Services	224	3.47	3.67	0.66	0.438	4	1	5
	Competition	224	3.17	3.33	0.44	0.196	2	2	4
	invention	224	3.77	4.00	1.04	1.085	4	1	5
	Innovation	224	3.80	4.00	0.60	0.360	4	2	5

Digital innovations	Capabilities	224	3.64	3.75	0.45	0.297	4	1	5
	Orientation	224	3.69	3.75	0.73	0.544	3	2	5
Performance sports start-up business	Innovation	224	3.76	3.75	0.52	0.272	4	1	5
	risk taking	224	3.72	4.00	0.78	0.618	4	1	5
	pioneer	224	3.86	4.00	0.53	0.288	4	1	5
	Aggressive behavior	224	3.64	3.75	0.74	0.553	4	1	5
	freedom	224	3.74	3.75	0.53	0.285	3	2	5

Table 2 shows the descriptive analysis of the research variables including entrepreneurial passion, digital innovations and the performance of the new sports business.

First, the skewness and kurtosis of the data are tested. Skewness is a measure of symmetry or asymmetry of the distribution function.

Table 3. Skewness and kurtosis of the data

Research variables	Number	Skewness	Kurtosis
Entrepreneurship Passion	224	-1.204	1.783
Digital innovations	224	-1.278	1.993
Performance sports start-up business	224	-1.269	1.877

Generally, if skewness and kurtosis fall outside the range of (-2, 2), the data is considered non-normally distributed. According to the findings in Table 3, the skewness and kurtosis values for all three variables in the study were within an acceptable range, suggesting that the data follows a normal distribution.

Table 4. Fit indices of the final drawing model

Fit index	GFI	AGFI	TLI	IFI	NFI	CFI	RMSEA
Acceptable fit	Bigger than 0.8	Bigger than 0.8	Bigger than 0.9	Bigger than 0.9	Bigger than 0.9	Bigger than 0.9	Smaller than 0.08
Fit is obtained	0.854	0.804	0.922	0.841	0.932	0.907	0.053

According to Table 4, all absolute and relative fit indices are at a very good level. Also, the RMSEA fit index is equal to 0.053. Therefore, the fitted model has a good fit.

Table 5. KMO test results

Variables	KMO test	Condition	
Enthusiasm entrepreneurship	development	0.719	Suitable
	Social mission	0.823	Suitable
	Products and Services	0.785	Suitable
	Competition	0.844	Suitable
	Invention	0.719	Suitable
Digital innovations	Innovation	0.791	Suitable
	Capabilities	0.784	Suitable
	Orientation	0.801	Suitable
Performance sports start-up business	Innovation	0.763	Suitable
	risk taking	0.768	Suitable
	Pioneer	0.753	Suitable

Aggressive behavior	0.743	Suitable
Freedom	0.719	Suitable

Table 5 shows the results of the KMO test of the components of all three variables of entrepreneurial enthusiasm, digital innovations, and the performance of a start-up sports business, which according to the report made in this table, the status of all components were suitable, that is, they were greater than 0.7.

Table 6. Checking the reliability and validity of the structure

Research variables	CR	AVE	MSV	ASV
Enthusiasm entrepreneurship	0.837	0.509	0.454	0.316
Digital innovations	0.882	0.603	0.166	0.091
performance of a new sports business	0.768	0.560	0.454	0.244

Table 6 shows the reliability and construct validity of the variables of the research, the combined reliability of entrepreneurial passion was 0.837, the combined reliability of digital innovations was 0.882, and the combined reliability of sports start-up business performance was 0.768.

Figure 1. It shows the mediating role of entrepreneurial passion in the impact of digital innovation on the performance of start-up sports businesses in the standard mode.

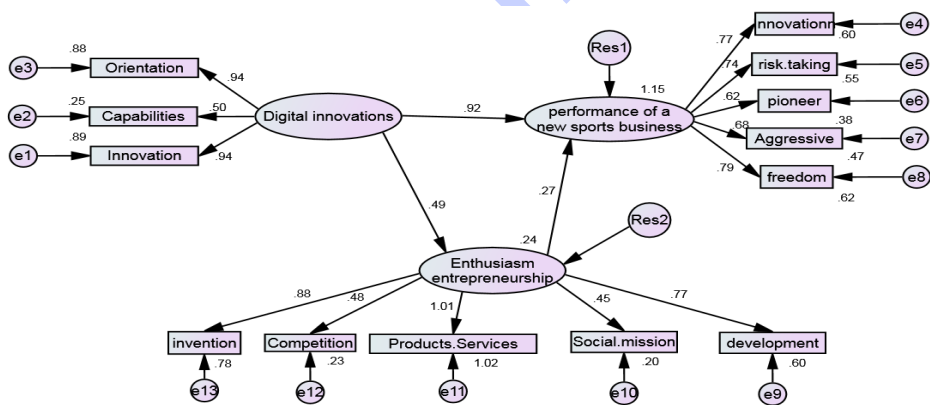


Figure 2. The mediating role of entrepreneurial passion in the effect of digital innovation on the performance of sports start-ups (in the standard case)

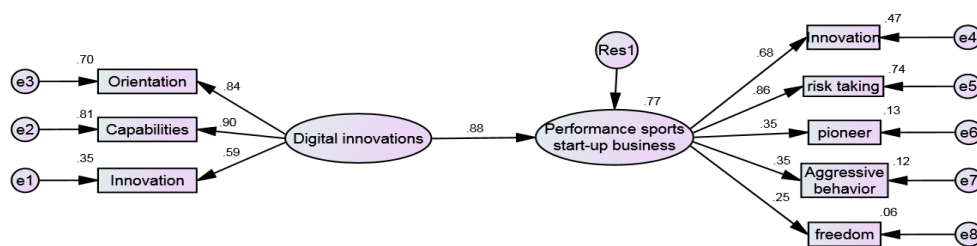


Figure 3. The effect of digital innovation on the performance of start-up sports businesses (without mediating variables)

Table 7. Structural model in standard path coefficient estimation mode

Research assumptions	B	T-VALUE	P	Result	Mediator type
The impact of digital innovation on the performance of new sports businesses	0.92	13.358	0.001	confirmation	
The effect of entrepreneurial passion on the performance of start-up sports businesses	0.27	6.437	0.001	Confirmation	partial mediator
The effect of digital innovation on entrepreneurial enthusiasm	0.49	7.133	0.001	Confirmation	
The effect of digital innovation on the performance of start-up sports businesses (without mediating variables)	0.88	7.494	0.001	Confirmation	

The results of structural model path analysis in Table 7 showed that digital innovations have an effect of 0.92 on the performance of start-up sports businesses, entrepreneurial enthusiasm has an effect of 0.27 on the performance of start-up sports businesses, and digital innovation has an effect of 0.49 on entrepreneurial enthusiasm, which is a significant level 0.001 was reported in all three hypotheses, which indicates the significance of the research hypotheses. On the other hand, because the t-value in all three hypotheses is outside (1.96 and -1.96), at the confidence level of 0.99, hypothesis H0 is rejected and hypothesis H1 is confirmed. That is, digital innovations have a positive and significant effect on the performance of new sports businesses, entrepreneurial passion on the performance of new sports businesses, and digital innovation on entrepreneurial passion.

According to Baron and Kenny's (1986) table, because in three hypotheses with the presence of a mediating variable, significant results were reported, as well as the effect of digital innovations on the performance of new sports businesses without the presence of a significant mediating variable. We conclude that the mediator of entrepreneurial passion in the effect of digital innovations on the performance of new sports businesses is a partial mediator.

4. Disclosure and Conclusion

The present study was conducted with the aim of investigating the mediating role of entrepreneurial passion in the impact of digital innovation on the performance of new sports businesses from the perspective of sports science students of Mohaghegh Ardabili University. It is one of the first attempts to pay attention to the performance of new sports businesses through entrepreneurial enthusiasm and digital innovation in the sports industry. In addition, using innovation in this field and explaining the concept of new sports businesses from the perspective of sports science students is a new and innovative phenomenon that in recent years, it has been recognized as a valuable approach in the field of entrepreneurship studies.

In examining the first hypothesis of the research, the results showed that digital innovation has a positive and significant effect on the performance of start-up sports businesses from the perspective of sports science Students University of Mohaghegh Ardabili. The findings of this hypothesis are consistent with the findings of Nematollahi et al (2022), Scillitoe & Birasnav (2021), Ratten (2020), Kishani et al (2020), Zia and Toutifar Tehranpour (2019) and Kos et al (2018). Kim et al. (2018) believe that the enthusiasm and will of the entrepreneur is one of the important and influential factors for success in new sports businesses. Aqbaei et al. (2022) assert that the rise of digital media in the media industry, coupled with the ease of content production and distribution, has led to the emergence of numerous start-up businesses in this sector. In their research, Rahimi et al (2023) believe that entrepreneurial enthusiasm and interest in micro-scale business can be a factor for the sustainability, growth and development of sports businesses. In this hypothesis, the researcher came to the conclusion that applying innovations and digital technologies and using tools and platforms based on these technologies can lead to improved performance, increased productivity, and the growth of sports businesses. Especially businesses that are in their initial stages and start-up. This hypothesis is based on the concept that digital innovation not only creates new tools and opportunities to improve processes and services in the sports industry, even, it can contribute to the overall performance of sports businesses by creating better connections with customers, increasing market access, and improving user experience. In addition, due to changes in consumption patterns and customer preferences towards technology and digital, applying digital innovation can improve sports businesses to become more competitive and respond to customer needs. As a result, it can be said that sports science students, as people who are familiar with the sports industry and the effects of technology in it, may perceive this connection between digital innovation and the performance of new sports businesses as an opportunity and advantage for both job creation and income and improving Self economic situation.

In examining the second hypothesis of the research, the results entrepreneurial enthusiasm has a positive and significant effect on the performance of new sports businesses from the perspective of sports science Students University of Mohaghegh Ardabili. The findings of this hypothesis are consistent with the findings of Habibi et (2023), Nematollahi et al (2022), Scillitoe & Birasnav (2021), Ratten (2020), Kishani et al (2020), Zia and Toutifar Tehranpour (2019). Habibi et al. (2023) it is stated that

individuals with a high level of entrepreneurial passion are more likely to pursue entrepreneurship and initiate new ventures. In their research, Darrochi & Tahansi (2023) showed that policy makers should try to time it by investing in the development of a positive personal attitude and mental norm towards entrepreneurship, considering the importance of entrepreneurial enthusiasm. In the same vein, Cardon & Kirk (2017) it has been suggested that entrepreneurial passion motivates individuals to identify innovative opportunities and foster intentions to create new businesses. Also, Karimi (2018) showed that entrepreneurial passion helps in forming entrepreneurial intentions and creating new business. In this hypothesis, the researcher came to the conclusion that Enthusiasm entrepreneurship, if considered as an important and influential factor in the entrepreneurial environment and new sports businesses, it can facilitate the improvement of performance and success of these businesses. In other words, it can be said that if sports science students consider Enthusiasm entrepreneurship as an essential factor for the development of start-up businesses in the field of sports. They can encourage and facilitate the improvement of performance and operations of these businesses. According to the findings, this hypothesis is based on the idea that Enthusiasm entrepreneurship stimulates ideation, creativity and innovation among sports science students. This enthusiasm can lead to the formation and development of new ideas for sports businesses. Also, entrepreneurial enthusiasm can act as a stimulus for the personal and professional development of sports science students and lead them to entrepreneurial experiences and launching new businesses in the field of sports. Therefore, it can be concluded that sports science students, considering their awareness of the importance and effects of entrepreneurship in the sports industry, may consider this enthusiasm as an effective factor in improving the performance and success of start-up businesses in the field of sports.

Examining the third hypothesis of the research, the findings indicated that, according to sports science Students at University of Mohaghegh Ardabili, digital innovation has a positive and significant impact on entrepreneurial passion. The findings of this hypothesis are consistent with the findings of Allal-Chérif et al (2024), Paul et al (2023), Nematollahi et al (2022), Scillitoe & Birasnav (2021) and Aminikhiabani et al (2017). Amini et al. (2017) pointed out that the result of the research approach of entrepreneurial people and the development of entrepreneurial spirit and passion in this field is that people are trained who innovate with their creativity and risk-taking. In this regard, Kos et al. (2018) believe that today in sports science, creativity in technology plays a valuable role in sports entrepreneurial activities. Also, Rahimi et al (2023) state in their research that entrepreneurial enthusiasm was recognized as a driving factor for technological creativity. In this hypothesis, the researcher concluded that digital innovation, by providing new technologies and tools based on these technologies, can act as a motivation and source of inspiration for entrepreneurial enthusiasm. In this regard, it can be said that digital innovation provides new possibilities and opportunities for creating sports businesses that Entrepreneurs get inspired by seeing the success and innovative ideas of others in this field and gain more enthusiasm to start or develop their businesses. Also, digital technologies provide easier access to educational and information resources in the

field of entrepreneurship and business development. These resources and trainings can strengthen entrepreneurs' enthusiasm for the next steps towards starting sports businesses and or it can be said that digital technologies provide the possibility of communication and networking with other people and companies in the field of sports. These connections can act as a source of information and support for entrepreneurs and increase their enthusiasm for the growth and development of their businesses. Therefore, it can be concluded that digital innovation can act as an important factor in creating and strengthening entrepreneurial enthusiasm. This enthusiasm can help grow start-ups and improve the sports industry, which is invaluable to the growth and development of the sports community.

According to the findings and results of this research, the following suggestions are made:

- Creating and developing platforms and applications that have the ability to provide diverse and innovative sports services and products can help create more enthusiasm in sports entrepreneurs.
- The use of virtual and augmented reality technologies in the sports experience, creating attractive and innovative experiences for the audience can be an acceleration for entrepreneurs in the field of sports.
- The formation of sports entrepreneurship networks is to create new opportunities for cooperation and exchange of ideas, resources and experiences, which can increase entrepreneurial enthusiasm in students and sports entrepreneurs.
- The utilization of sports management systems that leverage digital technologies and artificial intelligence can enhance the performance and administration of sports businesses, thereby bolstering entrepreneurial enthusiasm.
- Creating training and guidance programs for students and people interested in starting sports businesses can increase their enthusiasm to do these activities.
- Identifying and taking advantage of emerging market opportunities such as e-games and e-sports can help generate more passion for sports entrepreneurship.

Statement

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References

- Allal-Chérif, O., Guaita-Martínez, J. M., & Sansaloni, E. M. (2024). Sustainable esports entrepreneurs in emerging countries: Audacity, resourcefulness, innovation, transmission, and resilience in adversity. *Journal of Business Research*, 171, 114382.
- Alizadeh, N., Nikoei, A.R and Mokhtari, H.R. (2015). Content analysis of the constituent components of the entrepreneurial ecosystem. *Journal of Entrepreneurship in Agriculture*, 4 (5), 89-104.
- Aqbaei, M., Karimi, A and Labbafi, S. (2022). Identifying and prioritizing entrepreneurial opportunities for startups in the media industry, *Entrepreneurship Development Journal*, 56 (2), 283-299. DOI: doi.org/ 10.22059/JED.2022.310680.653463.
- AminiKhiabani, G. (2017). Explaining the role of strategic capabilities of environmental awareness and entrepreneurship-oriented on organizational performance. *Police Organizational Development Quarterly*, 63, 1-28.
- Baron, R. M., & Kenny, D. A. (1986). The moderator- mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51, 1173-1182
- Bernardus, D., Sufa, S. A., & Suparwata, D. O. (2024). Supporting Start-ups in Indonesia: Examining Government Policies, Incubator Business, and Sustainable Structure for Entrepreneurial Ecosystems and Capital. *International Journal of Business, Law, and Education*, 5(1), 236-259.
- Bhatnagar, N., & Ramachandran, K. (2023). 7 Influence of Next-Generation Family Champions on New Venture Creation by Business Families: An Indian Perspective. *De Gruyter Handbook of Business Families*, 135.
- Bocken, N., & Snihur, Y. (2020). "Lean Startup and the business model: Experimenting for novelty and impact". *Long Range Planning*, 53(4), 1-30.
- Bosma, N., Acs, Z., Autio, E., Coduras, A., & Levie, J. (2008). *Global Entrepreneurship Monitor. 2008 Executive Report.* available at: from <http://www.gemconsortium.org/>
- Bostan, R and Ghorbanian, M.R. (2023). Investigating the effect of market performance and entrepreneurship education on entrepreneurial intention with the mediating role of entrepreneurial motivation (case study: Azad Islamic students of central Tehran branch). *Encyclopaedia of Management Sciences*, 1 (1), 90-103.
- Cardon, M. S., Gregoire, D. A., Stevens, C. E., & Patel, P C. (2013). Measuring entrepreneurial passion: Conceptual foundations and scale validation. *Journal of business venturing*, 28 (3), 373-396
- Cardon, M.S., & Kirk, C.P. (2017). Entrepreneurial passion as mediator of the self-efficacy to persistence relationship. *Entrepreneurship Theory and Practice*, 39, 1027–1050.
- Chesbrough, H. (2010). Business model innovation: opportunities and barriers. *Long range planning*, 43(2-3), 354-363.
- Ciletti, D. (2012). Sports entrepreneurship: A theoretical approach *Sport entrepreneurship. theory and practice*, 1-14.
- Crippa, M.; Solazzo, E.; Guizzardi, D.; Monforti-Ferrario, F.; Tubiello, F.N.; Leip, A. Food systems are responsible for a third of global anthropogenic GHG emissions. *Nat. Food* 2021, 2, 198–209. [CrossRef]
- Darrochi, H and Tasavvori, M. (2023). Examining the influencing factors on entrepreneurial intention in Iran and England by examining the mediating role of passion. *Industrial management perspective*, 13 (1), 79-104.

- Guo, H., Guo, A., & Ma, H. (2022). Inside the black box: How business model innovation contributes to digital start-up performance. *Journal of Innovation & Knowledge*, 7(2), 100188.
- Habibi, R., Asadi Darestani, Z and Malaki Taleghani, F. (2023). The role of entrepreneurial passion on entrepreneurial behavior: the mediating role of entrepreneurial awareness, entrepreneurial self-efficacy and entrepreneurial intention (case study: Master's students of Payam Noor University, Rasht Center). *Entrepreneurship and innovation research*, 2 (2), 1-19. Doi: 10.22034/eir.2023.181632.
- Hacklin, F., Björkdahl, J., & Wallin, M. W. (2018). Strategies for business model innovation: How firms reel in migrating value. *Long range planning*, 51(1), 82-110.
- Hattink, B., & Wichers, J. (2021). "Sports and entrepreneurship. In *World Encyclopedia of Entrepreneurship*". Edward Elgar Publishing, 1-512.
- Henseler, j. & Chin, w. A comparison of approaches for the analysis of interaction effects between latent variables using partial least squares path modeling". *Structural equation modeling*. 2014; 17(1): 82-109.
- Karimi, S. (2019). The role of entrepreneurial passion in the formation of students' entrepreneurial intentions. *applied economics*, 52 (3), 331-344.
- Kerdpitak, C. (2022). The effects of innovative management, digital marketing, service quality and supply chain management on performance in cultural tourism business. *Uncertain Supply Chain Management*, 10(3), 771-778.
- Kianfar F., & Mousavi S. F. (2021). The role of digital innovation in knowledge management systems. *Scientific Journal of New Research Approaches in Management and Accounting*, 5(17), 158-186
- Kim, B., Kim, H., & Jeon, Y. (2018). Critical Success Factors of a Design Startup Business, *Sustainability*, 10 (9), 2981.
- Kishani, P., Mandalizadeh, Z and Khosravizadeh, E. (2020). The effect of institutional environment and strategic entrepreneurship on the performance of sports businesses. *Explorations in business management*, 12 (24), 291-317.
- Kos, A., Wei, Y., Tomazic, S., & Umek, A. (2017). The role of science and technology in sport, *International Conference on Identification, Information and Knowledge in the Internet of Things*, 128, 489-495.
- Lakshmi, D. V., Saradha, M., Karthik, R., Kumar, S., Babu, J. C., & Vilcekova, L. (2023). Parameters Describing Student Learning Environments Through Experiential Learning Technologies for Entrepreneurial Creativity: A Study From a B School. *Journal of Cases on Information Technology (JCIT)*, 25(1), 1-15.
- Mushtaq, H.A., Niazi, C.S.K., Hunjra, A.I. & Rehman, K.U. Planned behavior entrepreneurship and intention to create a new venture among young graduates. *Management & Marketing Challenges for the Knowledge Society*. 2011; 6(3):437-456.
- Naghizadeh Baghi, A., Aziziankohan, N and Mahdavi Gareh Agaj Olya, A. (2024). Investigating the effect of sports knowledge-based companies on entrepreneurship and development of sports products. *Journal of Entrepreneurship Research*, Doi: 10.22034/JER.2024.2026290.1099.
- Nematollahi, H.R., Ahmadi, H and Asadollahi, E. (2022). Phenomenology of barriers to the implementation of participatory governance in educational and research institutions. *Strategic studies of public policy*, 12 (44), 164-189.
- Parent, M. M., & Séguin, B. Toward a model of brand creation for international large-scale sporting events: The impact of leadership, context, and the nature of the event. *Journal of Sport Management*. 2017; 22(5): 526-549.

- Paul, J., Alhassan, I., Binsaif, N., & Singh, P. (2023). Digital entrepreneurship research: A systematic review. *Journal of Business Research*, 156, 113507.
- Rahimi, B., Ehsani, M., Saffari, M and Norozi seeyd Hosseini, R. (2023). From entrepreneurial enthusiasm and technological creativity of scholars to the commercialization of sports science research in Iran. *Sports Management and Development Quarterly*, 11 (3), 131-150.
- Ratten, V. (2020). "Sport Innovation Communities and Problem Complexity. In *Sport Startups: New Advances in Entrepreneurship*". Emerald Publishing Limited, 59-70.
- Rodríguez, A.R., Medina-Garrido, J.A., Lorenzo-Gómez, J.D., & Ruiz-N, J. (2010). What know,who you know?The role of intellectual and social capital in opportunity recognition. *International Small Business*, 28(6); 566-582.
- Scillitoe, J. L., & Birasnav, M. (2021). Ease of market entry of Indian startups: formal and informal institutional influences. *South Asian Journal of Business Studies*, 11(2), 195-215.
- Vallerand, R.J. (2015). *The Psychology of passion: A dualistic model: Series in Positive Psychology*.
- Van Praag, C., & Versloot, P. (2007). What is the value of entrepreneurship? A review of recent research. *Small Business Economics*, 29, 351-382.
- Xi, L., Sun, Y., & Wu, S. (2023). Analyzing the Impact of Dual Learning on the Performance and Sustainable Innovation Practices of Start-ups in the Sports Sector. *Revista de Psicología del Deporte (Journal of Sport Psychology)*, 32(4), 143-153.
- Zia, B., and Toutifar Tehranpour, M.M. (2019). Investigating the effect of entrepreneurial orientation and electronic readiness on the performance of new sports businesses. *Journal of sports management*, 11 (4), 705-721. <https://doi.org/10.22059/jsm.2019.241262.1930>.