

The effect of artificial intelligence technology on the development of entrepreneurship with the mediating role of entrepreneurship education

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Abstract

The purpose of this research is to investigate the effect of artificial intelligence technology on the development of entrepreneurship with the mediating role of entrepreneurship education. The research is applicable in terms of purpose, descriptive- survey in terms of nature, and of casual type. The statistical population of the research was managers and employees of start-up business companies in Kermanshah province. The sample size is 193 people and sampling method is random cluster. The data collection method was field collection, and the tools used were entrepreneurial development questionnaires (Antonik and Hiserich, 2003), artificial intelligence technology (adapted from Rahimi and Akbari research, 1402), and entrepreneurship training (researcher-made). The method of data analysis was descriptive statistics and inferential statistics (structural equation modeling), using Spss26 and Amos24 software. Sobel's test (t-statistic) was used to investigate the mediator variable. The findings showed that artificial intelligence technology has a significant effect on entrepreneurship development by 86%; and on entrepreneurship education by 83%. Also, entrepreneurship education predicts 11% of the changes resulting from entrepreneurship development. The results indicate that artificial intelligence technology has an impact on the development of entrepreneurship with the mediating role of entrepreneurship education in the start-up businesses of Kermanshah province.

Keywords:

Artificial intelligence technology,
Entrepreneurship development,
Entrepreneurship education,
Start-up businesses

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Extended Abstract

Introduction

The development of entrepreneurship is a complex, long-term and inclusive process that plays a significant role in the economic growth and development of countries. Today, entrepreneurship has become the most important and strategic economic tool of advanced societies. In fact, economic growth and development of countries depends on entrepreneurs and entrepreneurial activities. Therefore, the need to achieve economic development and progress is to pay special attention to the development of entrepreneurship (Zali & Razavi, 2008). The development of entrepreneurship requires serious determination and necessary knowledge in businesses; many influential factors can be listed that may improve the development of entrepreneurship. One of these factors that has created a global revolution today is the use of artificial intelligence technology in start-up businesses and entrepreneurship. In today's world, technological advances are one of the most fundamental factors in shaping society's transformations in all economic, cultural, political and social fields. Human dependence on technology is such that some experts such as Max Tegmark say: "Without technology, the extinction of us humans, on a cosmic scale of tens of billions of years, will happen soon" (Tegmark, 2017). One of the factors that can increase the effect of artificial intelligence technology on the development of entrepreneurship as a mediator is entrepreneurship education. Today, it is accepted that the progress and survival of any society and business depends on the quality and efficiency of the education of that society; and educational courses have an important mission in producing knowledge and preparing new businesses to assume leadership and responsibility in a competitive, complex and changing world (Escorcia et al., 2022). According to the stated contents, this research tries to answer the question: what is the effect of artificial intelligence technology on the development of entrepreneurship with the mediating role of entrepreneurship education?

Theoretical framework

Artificial intelligence

Artificial intelligence is a multidisciplinary and interdisciplinary field grown tremendously since the introduction of handheld computers in the 1950s. This field has the potential to transform various industries, and is defined as any theory, method, or approach that helps machines, especially computers, in analyzing, simulating, exploiting, and exploring human intellectual processes and behaviors (Lund et al, 2023).

Entrepreneurship training

Entrepreneurship education refers to all activities that aim to develop entrepreneurial mentality, attitude and skills in a range of cases such as idea generation, start-up, growth and innovation (Nvello et al, 2015). Entrepreneurship training is an activity that is used to transfer the knowledge and information needed to start and manage a business, and it will increase, improve, and develop the attitudes, skills, and abilities of non-entrepreneurs (Naeiji & Ebrahimi, 2017).

From the viewpoint of literature, in the simplest definition, entrepreneurship can be considered as the use of skills to bring innovation to business or to develop new businesses (Shetty et al, 2021). The first issue raised in entrepreneurship research and start-up business development was the emphasis given to capacities, specific assets, and the unit of new economic activities. Ownership, capabilities and assets can be a sign of successful growth of a business. Intelligence in entrepreneurship is a technology-driven process for collecting, integrating, analyzing and presenting business information (Mehdi Sasan, Bakhshandeh,

2022). Therefore, the first emphasis is research on artificial intelligence as a technology-based software, and the use of this technology in the global economy is increasing day by day. The use of artificial intelligence allows start-up businesses to improve economic conditions and business growth (Dondapati et al, 2022).

Yerevani et al, (2024) conducted a systematic review of the impact of artificial intelligence on the world's educational systems. This research has been done with a systematic review of 26 scientific research articles, 5 books and 13 reference sites. The results showed that artificial intelligence has a comprehensive role and importance in education systems. In the field of education by artificial intelligence, there are many successful projects and systems (GPT, etc.) that have facilitated the improvement of the teaching and learning process.

Gofman & Jin (2024) in a study entitled Artificial Intelligence, Education and Entrepreneurship concluded that students of disadvantaged universities founded fewer AI startups and attracted less funding. Also, the departure of professors from universities reduces the knowledge of artificial intelligence of startups, which seems to be an important factor for the successful formation of startups and attracting capital.

Research methodology

The current research is applicable in terms of purpose, descriptive- survey in terms of nature, and of casual type. The method of collecting information is library-based, and the tool used is note-making. The statistical population of the research is managers and employees of start-up businesses in Kermanshah province. The population size was 385 people and the sample size was determined to be 193 people based on Cochran's formula. Also, the sampling method of this research was random cluster. The data collection method was field-collection, and the tools used are a) Entrepreneurship Development Questionnaire (Antonik & Hisrich, 2003), b) Artificial Intelligence Questionnaire (Rahimi & Akbari, 2023), and c) Entrepreneurship Education Questionnaire (researcher-made).

Research findings

Spss and Amos software were used in this section. The statistical findings showed that the research hypotheses were confirmed with a significance level of less than 0.05, and the effect of artificial intelligence technology on entrepreneurship development is 86% and on entrepreneurship education is 83%. Also, the effectiveness of entrepreneurship education on entrepreneurship development was calculated as 11%. The results of the general hypothesis of the research were done using the Sobel test (t statistic). The results of this test are significant with a coefficient of 2.258 at a level of 1.96 and a significance level of 0.001, and it shows that artificial intelligence technology with the mediating role of entrepreneurship education has an impact on the development of entrepreneurship in start-up companies in Kermanshah province.

Conclusion

Artificial intelligence technology can help greatly in the process of entrepreneurship education. Artificial intelligence makes entrepreneurship education learners use the updated information and resources in this field to make proper use of it in their business process. Therefore, it can be concluded that artificial intelligence is an effective and applicable factor in entrepreneurship education. The statistical results obtained indicate that artificial intelligence has an effect of 83% on the changes resulting from entrepreneurship education. The results of structural equation modeling and the obtained fit indices are proof of this claim.

The results obtained are aligned with the results of Yerevani et al., (2024), Moradzadeh (2022), Gafman & Jane (2024), Chen et al., (2024) and Kissinger et al, (2021).

Today, a business is successful if it has enough information and knowledge and can develop its entrepreneurship and business through education. Therefore, entrepreneurship training is essential for start-up businesses and entrepreneurship development. The development of entrepreneurship will be faster when the necessary trainings have been implemented and the entrepreneurs have learned these trainings well and implement them in their business. The statistical results obtained indicate that entrepreneurship education responds to 11% of the changes resulting from entrepreneurship development. The obtained results are consistent with the results of Dahdahjani (2019) and Agha Mohammadi and Abdulahi (2015).

The results of the general hypothesis of the research regarding the effect of artificial intelligence technology on the development of entrepreneurship with the mediating role of entrepreneurship education were confirmed with the Sobel test. According to the results obtained for the first hypothesis, it is suggested to identify the advantages and disadvantages of artificial intelligence in the entrepreneurial system and pay special attention to its strengths. In line with the results of the second hypothesis, it is suggested that the threats resulting from the implementation of artificial intelligence in entrepreneurship education and entrepreneurship development should be reduced as much as possible. And finally, in line with the results of the third hypothesis, it is suggested that artificial intelligence be considered as one of the new and practical technologies in start-up businesses.