



# Iranian Journal of Educational Society

## Mixed Research of Establishing of an Entrepreneurial Model with a Future Research Approach in the Metaverse Era in Knowledge-Based Companies in the Field of Information Technology

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### Research Paper

**Receive:** 2023/02/15  
**Accept:** 2023/08/14  
**Published:** 2023/08/20

### Keywords:

Entrepreneurial, Future Research, Metaverse Era, Knowledge-based Companies, Information Technology.

### Article Cite:

Aria Parsa M, Dalvi Esfahan M R. (2023). Mixed Research of Establishing of an Entrepreneurial Model with a Future Research Approach in the Metaverse Era in Knowledge-Based Companies in the Field of Information Technology, Iranian Society of Sociology of Education. 9(2): 83-94.

### Abstract

**Purpose:** Considering the importance of entrepreneurship in the metaverse era, especially with a future research approach, the present research was conducted with the aim of establishing an entrepreneurial model with a future research approach in the metaverse era in knowledge-based companies in the field of information technology.

**Methodology:** The current research in terms of purpose was applied and in terms of implementation method was mixed (qualitative-quantitative). The research population in the qualitative part was university faculty members and managers of knowledge-based companies in the field of information technology, which number of 17 people of them according to the principle of theoretical saturation were selected as a sample by purposive sampling method. The research population in the quantitative part was the employees and managers of knowledge-based companies in the field of information technology in 29 major cities of Iran country with number of 45331 people, which according to Cochran's formula, the sample size was calculated 184 people, and considering the possible losses, 200 people of them were selected as a sample by available sampling method. The research tools in the qualitative and quantitative parts respectively were the semi-structured interview and researcher-made questionnaire (51 items), which the validity of the interviews was confirmed by the triangulation method and its reliability was calculated by the agreement coefficient method between two coders 0.88, and the face validity of the questionnaire was confirmed by the opinion of experts and its reliability was confirmed by the Cronbach's alpha method was calculated 0.92. The qualitative part data were analyzed with open, axial and selective coding method based on grounded theory in MAXQDA-2018 software and the quantitative part data were analyzed with exploratory factor analysis and structural equation modeling methods in SPSS-23 and SMART PLS-4 software.

**Findings:** The findings of the qualitative part showed that the establishing an entrepreneurial model with a future research approach in the metaverse era in knowledge-based companies in the field of information technology had 293 concepts, 47 sub categories and 17 main categories in 6 dimensions; So that the causal conditions dimension were included 11 sub categories in the 4 main categories of balance between opportunity exploration and creating competitive advantage, innovation development, growth prospects and benefiting from scientific and strategic approaches, the background conditions dimension were included 6 sub categories in the 2 main categories of regulatory approach and cognitive-normative approach, the intervening conditions dimension were included 6 sub categories in the 3 main categories of country's macro policies and planning in the issues of employment creation and entrepreneurship in the field of information technology, motivational mobility of material and spiritual issues and organizational dynamics, the central phenomenon dimension were included 5 sub categories in the 2 main categories of organizational structure of entrepreneurship and organizational policies of entrepreneurship, the strategies dimension were included 11 sub categories in the 4 main categories of having strategic thinking, forward-looking actions, improving work processes and using of education and knowledge management and the consequences dimension were included 8 sub categories in the 2 main categories of prosperity and flourishing of economy and targeted community development. Also, the findings of the quantitative part showed that there were 32 missing questionnaires and the quantitative section analyzes were performed for 178 people. Based on the analysis, all the dimensions had a factor load and average variance extracted of higher than 0.50 and reliability of higher than 0.70. In addition to that, the establishing an entrepreneurial model with a future research approach in the metaverse era in knowledge-based companies in the field of information technology had an acceptable fit, and in the mentioned model, the causal conditions on central phenomenon; the central phenomenon, background conditions and intervening conditions on strategies and strategies on outcomes had a direct and significant effect ( $P < 0.001$ ).

**Conclusion:** The results of the current research about the establishing an entrepreneurial model with a future research approach in the metaverse era in knowledge-based companies in the field of information technology have many practical implications for experts and planners of knowledge-based companies, especially in the field of information technology, and they based on the results of this research can take an effective step towards job creation and establishing an entrepreneurial in the metaverse era.



<https://doi.org/10.22034/ijes.2021.541983.1184>



<https://dorl.net/dor/20.1001.1.23221445.1401.15.1.1.0>



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## Detailed abstract

**Purpose:** Today's business world is a world full of rapid changes and transformations that occur due to the complexities in the environment. Therefore, environmental complexities are an inseparable part of today's businesses and organizations always faced with environmental challenges caused by change, transformation and turbulence. Today, digital and technological transformation has impact on the structure and business models of companies and institutions, and an organization that can use information technology capabilities correctly can gain a competitive advantage. The undeniable advantages of information technology in increasing the accuracy and speed of activity flow, increasing global quality, reducing costs and greater customer satisfaction have caused organizations more quickly to deploy and use information technology-based systems. The knowledge-based companies in order to survive in the competitive scene of new technologies required the continuous innovation in their processes and activities to can respond to the ever-increasing environmental needs. Entrepreneurship as a key of economic and social growth has received special attention in many countries and it is assumed that entrepreneurial activities in different dimensions' cause growth and development. Entrepreneurship involves identifying of high potential and technology-focused, business opportunities, gathering resources such as talent and capital, managing growth and significant risks with using fundamental decision-making skills. Entrepreneurship can be done with the future research approach, which this approach studies the future as an independent field in a methodical and systematic way. Future research is the process of systematic effort to look at the long-term future of science, technology and strengthen of strategic research areas, and the techniques and tactics of future research allow planners and decision makers to have desirable options and alternative versions for their activities. One of the new concepts of recent years is the concept of metaverse, and sometimes it is considered the most important event of the 21st century. Metaverse should be considered as the turning point of convergence between the efforts made and achieved in different disciplines such as computer, information science, artificial intelligence, graphics, social sciences, business, and etc. This structure is a post-reality world and a permanent and sustainable multi-purpose environment that integrates physical reality with digital virtuality and overcomes the fundamental limitations of web-based two-dimensional e-learning tools. Metaverse as a new media, is able to enable the presence of people in the three-dimensional virtual world through interface tools, and for this reason, this technology will create irreplaceable communication possibilities that before were not possible for humans. Considering the importance of entrepreneurship in the metaverse era, especially with a future research approach, the present research was conducted with the aim of establishing an entrepreneurial model with a future research approach in the metaverse era in knowledge-based companies in the field of information technology.

**Methodology:** The current research in terms of purpose was applied and in terms of implementation method was mixed (qualitative-quantitative). The research population in the qualitative part was university faculty members and managers of knowledge-based companies in the field of information technology, which number of 17 people of them according to the principle of theoretical saturation were selected as a sample by purposive sampling method. The research population in the quantitative part was the employees and managers of knowledge-based companies in the field of information technology in 29 major cities of Iran country with number of 45331 people, which according to Cochran's formula, the sample size was calculated 184 people, and considering the possible losses, 200 people of them were selected as a sample by available sampling method. The research tools in the qualitative and quantitative parts respectively were the semi-structured interview and researcher-made questionnaire (51 items), which the validity of the interviews was confirmed by the triangulation method and its reliability was calculated by the agreement coefficient method between two coders 0.88, and the face validity of the questionnaire was confirmed by the opinion of experts and its reliability was confirmed by the Cronbach's alpha method was calculated 0.92. The qualitative part data were analyzed with open, axial and selective coding method based on grounded theory in MAXQDA-2018 software and the quantitative part data were analyzed with exploratory factor analysis and structural equation modeling methods in SPSS-23 and SMART PLS-4 software.

**Findings:** The findings of the qualitative part showed that the establishing an entrepreneurial model with a future research approach in the metaverse era in knowledge-based companies in the field of information technology had 293 concepts, 47 sub categories and 17 main categories in 6 dimensions; So that the causal conditions dimension were included 11 sub categories in the 4 main categories of balance between opportunity exploration and creating competitive advantage, innovation development, growth prospects and benefiting from scientific and strategic approaches, the background conditions dimension were included 6 sub categories in the 2 main categories of regulatory approach and cognitive-normative approach, the intervening conditions dimension were included 6 sub categories in the 3 main categories of country's macro policies and planning in the issues of employment creation and entrepreneurship in the field of

information technology, motivational mobility of material and spiritual issues and organizational dynamics, the central phenomenon dimension were included 5 sub categories in the 2 main categories of organizational structure of entrepreneurship and organizational policies of entrepreneurship, the strategies dimension were included 11 sub categories in the 4 main categories of having strategic thinking, forward-looking actions, improving work processes and using of education and knowledge management and the consequences dimension were included 8 sub categories in the 2 main categories of prosperity and flourishing of economy and targeted community development. Also, the findings of the quantitative part showed that there were 32 missing questionnaires and the quantitative section analyzes were performed for 178 people. Based on the analysis, all the dimensions had a factor load and average variance extracted of higher than 0.50 and reliability of higher than 0.70. In addition to that, the establishing an entrepreneurial model with a future research approach in the metaverse era in knowledge-based companies in the field of information technology had an acceptable fit, and in the mentioned model, the causal conditions on central phenomenon; the central phenomenon, background conditions and intervening conditions on strategies and strategies on outcomes had a direct and significant effect ( $P < 0.001$ ).

**Conclusion:** The results of the current research about the establishing an entrepreneurial model with a future research approach in the metaverse era in knowledge-based companies in the field of information technology have many practical implications for experts and planners of knowledge-based companies, especially in the field of information technology, and they based on the results of this research can take an effective step towards job creation and establishing an entrepreneurial in the metaverse era.