

eISSN: 2981-1554

Original Article (Qualitative)

Designing an innovation powerhouse model in knowledge-based companies with a data-driven approach

Hassan Fathalian¹ , Behzad Shahrabi² , Fereydoon Azma² , Elahe Masoumi² 

1- Department of Entrepreneurship, AK.C., Islamic Azad University, Aliabad Katoul, Iran

2- Department of Management, AK.C., Islamic Azad University, Aliabad Katoul, Iran

Receive:

25 January 2025

Revise:

17 March 2026

Accept:

10 May 2025

Keywords:

Innovation ecosystem,
Knowledge-based,
Organizational structure,
Innovation culture,
Innovation powerhouse

Abstract

The aim of this research is to design an innovation powerhouse model in knowledge-based companies with a data-based approach. The research method is applicable in terms of its purpose, and qualitative in terms of its implementation method, based on the data-based method. The statistical population of the research includes 18 empirical and academic experts. The sample size was determined by purposive sampling and the interviews continued until theoretical saturation. Semi-structured interviews were used to collect information. The data-based method and Maxqda 2020 software were used to analyze the data. The main components were summarized in the form of causal, contextual, intervening factors, effective dimensions, strategies, and consequences. It showed that the innovation powerhouse model has consequences such as creating an ecosystem and culture of innovation, a comprehensive document of cooperation, effectiveness and efficiency, expertise and competence. The innovation powerhouse model has covered the most important challenges of companies, including defining a special payment system to motivate elites, defining a transparent financial system with universities and industries for continuous cooperation, and creating a special legal system and evaluation of knowledge companies.

Please cite this article as (APA): Fathalian, H., Shahrabi, B., Azma, F. and Masoumi, E. (2025). Designing an innovation powerhouse model in knowledge-based companies with a data-driven approach. *Journal of New Approaches in Management and Marketing*, 4(2), 81-103.



<https://doi.org/10.22034/jnamm.2025.454281.1050>



Authors retain the copyright and full publishing rights.

Published by Research Center of Resource Management Studies and Knowledge-Based Business. This article is an open access article licensed under the Creative Commons Attribution 4.0 International (CC BY 4.0)

Publisher: Research Center of Resource Management Studies and Knowledge-Based Business

Corresponding Author: Behzad Shahrabi

Email: b.shahrabi@iau.ac.ir

Extended Abstract

Introduction

Innovation is a fundamental factor in creating competition that leads to organizational growth and future success and is like a growth engine that allows companies to enjoy better efficiency in the global economy. Therefore, companies must create new products and processes and use advanced technology in order to be able to take a step forward towards their sustainability and durability (Senoubar et al., 2011). Efficiency and performance improvement and achieving sustainability in order to be sustainable, make a profit and meet the needs of society are the fundamental missions of companies, and this is the basis for quantitative and qualitative expansion in every country. In this context, Wang stated that technical progress often leads to temporary monopolies that create excess profits, but the development of innovation capabilities affects the performance of companies, including profitability, market share, customer satisfaction and company sustainability. Failure to maintain innovation also leads to failure, so companies should try to convert innovation capabilities into innovation performance (Adnanhasoon Alkhafaji et al., 2023); On the other hand, the world's move towards a knowledge-based economy has led many countries to develop knowledge-based companies. These types of companies allow advanced countries to maintain their competitiveness against growing economies where human and production costs are lower (Mohammadkazemi et al., 2021). Today, the survival of knowledge-based companies depends on continuous innovation in their products and processes so that they can respond to signs of environmental change, including changing customer needs (Shakeri et al., 2022). However, knowledge-based companies, given that they are new companies and usually use the structure of national and government support, usually resist innovation after the cessation of this support due to the failure to institutionalize innovation in the body of their organizational activities and after a short period of time, especially in Iran, they fail in national and international competition. On the other hand, the only advantage of these companies is their innovation in the knowledge base, which requires a structure and model to be formed in the body of these companies that will institutionalize innovation in their organizational culture; otherwise their contribution will be nothing but failure (Khyatyan et al., 2015). According to the definition of the Organization for Economic Cooperation and Development, a knowledge-based economy is an economy that is directly based on the production, distribution, and consumption of knowledge and information (Raei & Dahmardeh, 2021). This study was conducted with the general objective of presenting the innovation powerhouse model (a case study of knowledge-based companies). In order to achieve this goal, the following specific objectives were also achieved: Identifying the effective factors, including causal, contextual, and interfering factors affecting the innovation powerhouse model; Identifying the strategies effective on the model, and finally presenting the consequences of presenting the innovation powerhouse model according to the experts' opinions. Therefore, the main research question: What is the innovation powerhouse model in knowledge-based companies with a data-based approach?

Theoretical framework

Innovation

Innovation is an important factor that can pave the way for expanding markets, benefiting from new opportunities, and obtaining more profits. Innovation has increasingly become one of the main and key factors for the long-term success of organizations in competitive markets. Innovation plays an important role in creating value and maintaining competitive advantage (Rezvani & Toghraee, 2011).

Abun (2023) examined how innovative leadership of managers, as well as innovative knowledge and skills of employees, affect their innovative work behavior. The results showed that innovative leadership of managers, innovative knowledge, innovative skills, and innovative work behavior of employees were all rated high and the correlation between them among employees was significant, contributing to the discourse on innovative work behavior. In summary, all the previous sources reviewed indicate a one-dimensional view of knowledge-based companies and a comprehensive, structural, and comprehensive view for promoting and sustaining innovation in knowledge-based companies was not seen, which is the need to provide a comprehensive model for sustaining knowledge-based businesses.

Ahmadi (2022) in a study aimed at identifying factors affecting innovation culture, concluded that there is a positive and significant effect between the variables of support mechanism, leadership, technology, organizational change and transformation, and strategy with innovation culture, and all organizations need new ideas and novel and fresh ideas to survive in order to lead to innovative practices, and this requires the creation and promotion of an innovative culture in the organization, and in previous sources, there has been sporadic emphasis on the appropriate structure of innovation to strengthen the organization or knowledge-based companies.

Research Methodology

The research method is applicable in terms of its purpose, and qualitative in terms of its implementation method, based on the data-based method. The statistical population of the study consists of 18 experimental and academic experts. The sample size was conducted using a purposive sampling method, and the interviews continued until theoretical saturation was achieved. A semi-structured interview was used to collect information.

Research findings

Data-based method and Maxqda 2020 software were used to analyze the data. The main components were summarized in the form of causal, contextual, intervening factors, effective dimensions, strategies, and consequences. It showed that the innovation powerhouse model has consequences including creating an ecosystem and culture of innovation, a comprehensive document of cooperation, effectiveness and efficiency, expertise, and competence. The innovation powerhouse model has covered the most important shortcomings of companies, including defining a special payment system to motivate elites, defining a transparent financial system with universities and industries for continuous cooperation, and creating a special legal system and evaluation of knowledge companies.

Conclusion

The present study was conducted with the aim of designing an innovation powerhouse model in knowledge-based companies with a data-based approach. The results of this study are in line with the research of Mohaisen et al. (2025), Mahmoudi et al. (2025), Abun (2023), Ahmadi (2022), Shereefa (2022), Khademi Kolahlou & Sahebkar Khorasani (2022), Akhtari et al. (2021), Rezazadeh (2021), Abolfathi et al. (2021), Udayanganie (2021), Baporikar (2018), and Mansuri et al. (2017). Khademi Kolahlou & Sahebkar Khorasani (2022) consider that Compensation and motivation; Training, development and creating a learning environment; Team building and participation; Performance appraisal management; Retention and promotion of knowledge workers; Identification, recruitment and recruitment are the most important functions of human resource managers of knowledge-based and innovative

companies, along with recruitment and individual development, promotion and the payment system of the innovation powerhouse model.

Considering the results of the research, the following suggestion is made:

*Given that Iran is facing the phenomenon of sanctions in exports and raw material supply, and in the present model, the interviewees have generally talked about the development of knowledge-based companies, and the internal structure of the company has been discussed with regard to internal and managerial capabilities, it is suggested that the innovation powerhouse be examined quantitatively based on the impact of the sanctions variable in knowledge-based companies.