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Original Article (Qualitative)

Designing and developing an innovation ecosystem model for small and medium-sized enterperisrs in Iran with a meta-synthesis approach

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Abstract

The aim of the present study is to design and develop an innovative ecosystem model for small and medium-sized enterprises in Iran. The design of this innovation ecosystem model can act as a driving factor for involving various actors in the production, design, development and commercialization of innovative products and services in small and medium-sized enterprises. To achieve this goal, the meta-synthesis method was used and, according to previous studies, 1469 articles were selected and interpreted from among various articles. In fact, an interpretation beyond previous studies was obtained and in this method, the findings were combined and a comprehensive view of the phenomenon in question was obtained. Finally, 69 articles were selected using the screening method. The findings show that, according to the combination of studies conducted, the dimensions of the innovation ecosystem model in small and medium-sized enterprises include innovation in inputs, innovation in processes, innovation in outcomes and outputs, social innovations, strategy innovations, and environmental sustainability innovations. In fact, in addition to these dimensions, their indicators and components have also been extracted, which actually play a facilitating role in implementing the desired model. The results show that the innovation ecosystem model, which is the result of extracting indicators and components, can be applied in small and medium-sized enterprises.

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Extended Abstract

Introduction

Today, creativity and innovation and the ability to discover new opportunities are among the most essential characteristics of entrepreneurs. Competition in technology and ensuring and continuing life and survival in companies and industries require finding new solutions and methods of dealing with problems that depend greatly on innovation, creation of new products, processes, and approaches. In today's business world, some factors such as continuous and sometimes fundamental changes in technologies, emergence of new demands from customers, short product and service life cycles, disappearance of the boundary between industries and the constant presence of new entrants from different industries and many other factors have created a special space and as a result of these changes, companies are dependent on other companies and institutions to create value for their customers. Considering value creation from an ecosystem perspective is different from the traditional view, which is based on value creation by a specific company and is static. Therefore, to use ecosystems, companies need to change their perspective from a traditional and company-based and static view to an ecosystem view (Fuller et al., 2019). In the innovation ecosystem, key people are connected to many other factors in valuable interactions. One of the reasons for the increasing importance of innovation at the international level is the globalization of markets and the competitive pressure on companies to keep on seeking innovation. Innovation ecosystems connect the way actors, producers, service providers, end users, regulators, and civil society organizations to achieve a collective outcome (Zakobedes & Calleagues, 2017). Ecosystems similar to innovation ecosystems increase the sustainability of organizations and industries and can support their sustainable activities towards sustainable development (Reezner & Calleagues, 2019), because it is likely to have implications for both researchers and policymakers and practitioners (Dedhayer & Calleagues, 2018).

Regarding the theoretical gap in the research, it can be said that by reviewing the research, it was found that limited studies have been presented in the field of designing and developing a coherent framework for the innovation ecosystem in small and medium-sized enterprises in the country, although many of these studies were very general or only analyzed the innovation ecosystem from one aspect (Holm & Ankarkrona, 2016). Also, regarding the necessity of conducting this research, it can be said that previous studies have mainly focused on the technological dimension of the ecosystem, which limits the possibility of examining and evaluating complex ecosystems (Chen et al., 2016). On the other hand, a large part of the studies have only examined a few ecosystem actors and the interactions between them, and have not comprehensively examined all stakeholders and the relationships between them (Motoyama & Knowlton, 2017). Today, designing an innovation ecosystem model can be considered as a stimulus to increase the performance of these small and medium-sized industries. In this regard, the present study attempts to, through the study of previous research, address the question of how the innovation ecosystem model in small and medium-sized enterprises is designed and developed using the meta-synthesis model.

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Theoretical framework

In the present era, innovation emerges when the organization seeks to respond to an environment in which it is operating under environmental disturbances, and this has caused managers to focus on organizational transformation in order to adapt and respond to changes in a timely manner and maintain the organization's competitive advantages, and they consider themselves in need of an appropriate leadership style and human capital management to deal with such changes (Veghry and Fileshver, 2024).

Small companies may not grow with proper innovation management, but they can still survive. Companies that have planned innovation management well will be able to survive (Zoares Eskoober and Goozman, 2017). On the other hand, businesses also face obstacles, including restrictions and laws on content production and advertising, audience limitations, the impact of political and social crises, the presence of competition, references, government restrictions, unethical behavior of audiences and competitors, and systemic problems such as messaging bugs and lack of financial support, lack of sufficient facilities, and ideological limitations (Kafshdar Toosi, 2024). As Shompiter emphasizes, innovation is a powerful tool for new companies to successfully enter the market and challenge established companies. Also, established organizations need innovation to maintain their competitive position in the face of new and emerging or “disruptive” technologies (Cresstenson, 2010). Radical innovations are those that are developed by a company and are also innovations that are new to an industry (Reechesten and Salter, 2006). SMEs, known for their centralized management and informal structures, are therefore more prone to innovation. Companies that propose product innovation should focus on new product development or technological improvements, while companies that introduce new organizational methods such as process innovation should focus on knowledge and management culture (Ikermorat and Bardoogan, 2011). However, the most difficult task for SMEs is to realize this idea to meet demand. SMEs must follow several stages until the newly created product becomes marketable. New product development is a process in which new ideas are used in the final product and service. This process consists of six stages. Research and development stage, product design, concept testing, prototype, test marketing, and commercialization or launch. All these processes require resources and budget. Studies show that in Iran, not much research has been done so far on the topic of innovation ecosystem model in small and medium-sized companies and key players, and even practical models and patterns in this field. Considering that today advanced economies have placed innovation as their main factor and driver, developing countries need innovation in services and products to accelerate their growth and development. Considering the economic conditions of the country, many small and medium-sized companies cannot continue their production cycle.

Methodology

This research is applicable in terms of purpose, qualitative in terms of data collection, and with a meta-synthesis approach in terms of research implementation method. This research is based on the seven-step method of Sandelowski and Barroso (2007) in meta-synthesis.

Research findings

In this research, based on articles discovered from reputable journals and databases, 68 articles were fully reviewed and by combining the findings, six dimensions along with their indicators and components were identified for the innovation ecosystem, described below. Based on the results of the meta-synthesis, the dimensions of the innovation ecosystem can be categorized into six main areas, including input innovation, process innovation, strategy innovation, output and outcome innovation, social innovation, and environmental innovation.

Conclusion

The first dimension is the input innovation dimension, consistent with the research of Liang & Wang (2023) and Block et al., (2023), and based on the research conducted, it is suggested that in order to have an effective input in the field of innovation, its indicators and components need to be calculated in a real sense and in accordance with the environment in which it operates. These indicators and components include crowdfunding, launching a venture capital fund, hiring startup-minded employees, innovation in financing methods, etc. The second dimension is the process innovation dimension, which acts as a strategic role in converting inputs into outputs and, in a way, extracts accurate and correct outputs and actions after a targeted and effective analysis of inputs. The results of this dimension are consistent with the research of Piñera-Salmerón et al., (2023). In this dimension, indicators and components such as the production of artificial intelligence-based services, updating machinery and equipment, setting up a research and development unit, using artificial intelligence capabilities, smartening business processes, continuous product improvement, application of quality tools, redesigning parts and components, etc. are mentioned. The third dimension is innovation in outputs and outcomes, which are actually indicators such as obtaining an electronic trust mark, developing new product versions, setting up spin-off companies, using online sales platforms, developing the export of innovative products, obtaining a knowledge-based mark for products, commercializing innovative products, etc., and is consistent with the research of Jin & Li (2023). The fourth dimension is social innovation, the results of which are consistent with the research of Sampaio & Sebastião (2024), and these studies showed that this dimension facilitates the cooperation of non-governmental sectors and civil society to promote innovation and also influence the innovation process. In fact, social innovation is an environmental factor that plays a decisive role in the adoption of innovation and the production of innovation. The indicators of this dimension include the development of corporate citizenship behavior, the allocation of budget lines to the field of social responsibility, the creation of local networks for the exchange of knowledge and benefits, etc. The fifth dimension is innovation strategies, which is consistent with the research of Agazu & Kero (2024). The components of this dimension include the development of entrepreneurial culture, the development of digital entrepreneurship, co-creation in the production of new products, and the development of gradual innovation, and therefore it is suggested that strategy be considered as a facilitator of the role of the innovation path and the purposefulness of the innovation development process. The sixth dimension is environmental innovation, which includes indicators and components such as

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green innovation development, green management development, green product development, green marketing development, reduction of environmental pollutants, use of less polluting materials, etc., which is consistent with the research of Kirikkaleli et al., (2023). The three dimensions of social innovation, environmental innovation, and strategic innovation are considered as external environmental dimensions of innovation that affect the internal environment of innovation and in a way stimulate innovation. Any research or management action in the field of innovation ecosystems requires a precise understanding of the six dimensions.