ENTREPRENEURIAL UNIVERSITY AND SUSTAINABLE DEVELOPMENT

NAHID NADERI BENI

College of Farabi, University of Tehran, Qom, Iran
E-mail: n.naderi.b@ut.ac.ir

Abstract - Sustainable development basically brings to mind thinking about the future, in which it takes environmental, social, and economic considerations in order to lead to a balanced state of human life. This is the concept of sustainable development in a new mode. Universities can play an important role in this regard. Academic missions can be the basis for sustainable development if all its activities are tied to entrepreneurship. An entrepreneurial university is a university affecting environmental, social and economic systems, and pledges to sustain production and consumption. The present study aims to provide indicators for drawing the map of the entrepreneur university in line with sustainable development in Iran. Analysis of interviews via the theme analysis technique illustrated that the most important entrepreneur indicators that can be considered for universities so that they can lead to sustainable development in Iranian society include entrepreneurship education and research, entrepreneurial structure, entrepreneurial human and financial management resources.

Keywords - Entrepreneur University, Entrepreneurial Structure, Entrepreneurial Human and Financial Management Resources

I. INTRODUCTION

Sustainable development has emerged as an important but controversial concept in the fields of business and politics. This awareness is on the rise as entrepreneurship can be considered as an important channel for the transformation of sustainable products and processes (Hall, Daneke& Lenox, 2010). Issues such as sustainable development and entrepreneurship have recently attracted attention of academic research (Bell &Stellingwerf, 2012) and researchers such as Moshina (2015), Cohen and Winn (2007) Deanand McMullen (2007) have addressed the issue of entrepreneurship and sustainable development. Obviously, universities can play a significant role in sustainable development, especially in economy. Since the 1970s, universities have faced the requirements of the market, industry, and business world, and, since 1990's, with post-industrial developments and the information society(Farasatkhah, 2004). Along with these developments, universities have redefined their missions and have embarked on entrepreneurship.Etzkowitz (1983), who used the term for academic entrepreneurship for the first time, acknowledges that universities should play a pivotal role in development activities in modern economies. Academic entrepreneurship is a comprehensive term referring to the efforts and endeavors that universities and their industrial partners are pursuing with the aim of commercializing their academic research (O'Shea et al., 2007). In most definitions, commercialization of university intellectual property is usually assumed to be equivalent toacademic entrepreneurship (Tulli&Kozarznitzki, 2007). In other words, at the entrepreneur university, by preserving the intellectual property of knowledge, knowledge transfer can facilitate the distribution of knowledge and allow universities to transfer their intellectual property to a faster and faster development and development (Carlson &Fridh, 2002). But the entrepreneuruniversity seems to embrace a broader field. Just as Zhou and Etzkowitz (2004) put academic entrepreneurship in a group, the role of the entrepreneur university in sustainable development can be seen as a continuum of entrepreneur activities that include the provision of services for the development of entrepreneurship to the entrepreneur university, which combines entrepreneurship in teaching and its strategies, academic research and services. Therefore, an entrepreneur university is referred to as a university that has a wide range of supporting infrastructural mechanisms for the development of entrepreneurship as a product (Jacob et al., 2003). Moreover, nowadays modern universities called entrepreneur universities, can play a role in sustainable development. The United Nations Educational, Scientific and Cultural Organization (UNESO) in the Global Perspective for Higher Education for the 21st Century describes modern (entrepreneur) universities as follows: entrepreneurship is a place in which entrepreneurial skills are developed to facilitate graduates' capabilities and to transform them into job creation. (UNESCO Report, 2003). Nelson (2005) also considers a modern university as an entrepreneur university, and believes that modern university is a university with an important part of its activities with economic justification and very close cooperation with the outside world.This paper seeks to address the lack of capacity of Iranian current universities in sustainable development through entrepreneurship. In addition, it tries to take an interdisciplinary approach with regard to the perspectives of various disciplines, such as education, management and economics, and draw the map of the characteristics of the

entrepreneur university according to main activities and explain the main activities and support provided by Porter (1985) within the value chain framework. The main activities include education and research; and support activities, include organizational structure design, human resource management, and financial resources management. Generally speaking, this article can help managers, planners and faculty members of management and education faculties, and in particular the field of higher education and higher education, to take positive steps towards entrepreneurship through conducting entrepreneur educational and research activities.

II. METHODOLOGY

The research employs a qualitative research design and an exploratory research method. The statistical population consists of all the faculty members of Iranian universities that have been active in entrepreneurship research and education. Sampling was done via a purposive sampling method and snowball technique. The data collection instrument was the semi-structured interviewing technique. In order to analyze the data obtained from the interviews, the theme analysis method was used. Then, the interviews were prescribed and encoded in the Microsoft Word Software, and sub-themes and then the main themes were extracted. The main themes are education, entrepreneurial research, entrepreneurial management of human and financial resources, and entrepreneurial structure, which will be discussed in the next section, respectively.

III. FINDINGS

A) Entrepreneurial education

The first mission and duty of universities is education. Although in many countries entrepreneurship has an important status, entrepreneurship has not yet been properly integrated with the curriculum of universities. The role of curriculum goals and content in academic entrepreneurship is diminishing, and faculty members do not use appropriate teaching strategies to educate students in developing entrepreneurship.

The aim of the entrepreneur university is not just entrepreneurship education for a few students in a few disciplines; the goal is to change the attitude of employability to entrepreneurship and create an entrepreneurial opportunity for all students during the university education. Based on interview analysis, the characteristics of entrepreneurial education in universities can be summarized as follows:

(a) Organizing the structure of entrepreneurship education, including the integration of theory and practice, separating the structure of education on the basis of students' mental structure, and creating equal opportunities for all students.
(b) Developing an entrepreneurial curriculum with demanding requirements, updating, and following an intergenerational approach.
(c) Paying attention to the formulation of goals and content of entrepreneurship in curriculum including promoting entrepreneurial thinking, strengthening entrepreneurial characteristics in students, having practicality and applicability, establishing a bridge between students and the market, achieving higher levels of goals and creating wealth.
(d) Enjoying a learning environment including faculty members, space and educational facilities, educational materials and equipment.
(e) Teaching and evaluation methods, including problem-based teaching methods, classroom entrepreneurship engagement, simulated or quasi-entrepreneurial activities, team teaching, employing entrepreneurship labs, reporting on entrepreneurial activities, attending student societies through co-operation, or internship.

B) Entrepreneurial research

The second pillar of the mission of universities is research. Research is the idea behind entrepreneurial activities. According to the interviewees, the features of an entrepreneurial research include: value creation, innovation, and technology. Academic research is also a kind of investment that will not create value if their returns are lower than the cost of their capital. Creating a sustainable value is the result of a long-term effort that will be achieved through the use of human capital, material and financial resources in research activities and processes. Value creation without innovation is not possible. Entrepreneurship is the continuation of innovation that is emerging through the successful implementation of creative ideas to create a new business. Research and innovation have close links and interconnections. In recent years, the relationship between knowledge and technology has been so closely intertwined that it is very difficult to isolate the realm of each one, and perhaps in some cases even impossible. For this reason, developed countries have become more focused on developing the boundaries of knowledge to produce a variety of human, cultural and educational technologies. Whenever technology-based thinking is created in research, it's called “techno-creation”. In other words, a set of new ideas and thoughts based on technology that leads to the creation of a business with risk, is called “techno-creation”.

C) Entrepreneurial Organizational structure

An organizational structure that encourages entrepreneurial behavior (discovering opportunities, facilitating opportunity and pursuing opportunities) is an essential element for the success of an entrepreneurial organization. Using the text analysis of the interviews, the characteristics of the

entrepreneurial structure in universities were extracted including:

With enriched roles: faculty members act on the basis of their own ideas and thoughts, and expand their relationships with other colleagues in relation to entrepreneurship, based on their ability and insight into entrepreneurship. Focusing on entrepreneurship and providing programs to determine the role of roles in entrepreneurship contributes to enriching roles.

Academic autonomy: As Bikas (1995), Bredahl (1990) and Boyld (2007) also argue, Autonomy expresses the autonomy of universities. It is clear that the University of California can handle its affairs either arbitrarily or unfavorably, freely or arbitrarily. In this context, the principles that the university chooses and the decisions it adopts will not be dictated by anyone and no power outside the university environment.

Flexibility: University needs a flexible structure to respond to demands and keep pace with changes. The flexible structure has the capability to protect against the evolution of society. An important flexible structure of organizational entrepreneurship is that it promotes dynamism and facilitates creativity and innovation processes.

Agility: Agility in academic affairs increases the speed of planning in the field of entrepreneurship, increasing creativity and dynamism, increasing accountability, flexibility and adaptability to change.

D) Entrepreneurial human resources management

In Human Resource Management (HRM), the presence of faculty members interested in entrepreneurship is another valuable opportunity that can be used to identify and identify the fields of entrepreneurship in universities. Adopting the necessary measures for recruitment, upgrade systems and performance appraisal, as well as their maintenance programs in academic entrepreneurship will be very effective. Human resource interventions can only lead to effective entrepreneurship in an organization's large-scale system, which has both horizontal coherence in the level of human resources and vertical alignment between the actions of these units with organizational goals. In the entrepreneurship management of human resources in universities, interviewees also referred to the following features: entrepreneurial characteristics and capacities, enjoyment of practical experience in business and entrepreneurship, familiarity with business issues in their field, enjoyment of public skills in entrepreneurship, and enjoyment of a history of educational and research activities in the field of entrepreneurship.

E) Entrepreneurial financial resources management

If universities do not have sufficient financial resources to meet their goals, they will face difficulties in carrying out their duties. The growth of the demand for higher education during the last quarter of the twentieth century and the probability of continuing its rise in the twenty-first century has brought higher education with many limitations, especially in the field of public finance for higher education. Not only the limitation of financial resources and the reduction of state aid to universities, on the one hand, and the pursuit of entrepreneurial activities in the field of education and research, on the other hand, has necessitated the need for independent financial resources for universities, but one of the characteristics of entrepreneurship universities is financial autonomy. According to the respondents' analysis of entrepreneurship management, the following features should be considered:

a) Diversification methods to financial resources and their role in the development of entrepreneurship through attracting risky capital for university entrepreneurs, university stock market, student marketing, conducting income research and commercializing their outcomes;
b) The role of university development in supporting university entrepreneurship through the establishment of an institutions or offices of entrepreneurial activities funds, establishment of academic insurance to support academic entrepreneurs, theinclusion of some endowments in the service of academic entrepreneurship;
c) Allocation of financial resources in the field of entrepreneurship based on education and training activities in the field of entrepreneurship; commercialization of research and faculties with more entrepreneurial graduates.

IV. CONCLUSION AND RECOMMENDATIONS

According to Fleaca, Fleaca and Maiduc (2018), the role of the educational system, especially higher education, in sustainable development, providing inclusive and fair education and lifelong learning opportunities for all individuals, and indicators such as participation in sustainable development and inclusion of sustainable education in curricula at all levels, teacher training, student assessment, and acquisition of relevant ICT skills in adolescents and youth and entrepreneurship is evident at all levels. Given the role of universities, in the development of societies, their main mission is to establish sustainable development through innovation and entrepreneurship. The prediction of indicators for higher education institutions will increase the efficiency of activities in the value chain framework and, through research and development, education and learning, knowledge sharing and technology transfer, provide a practical and effective mechanism for implementing the strategy of the entrepreneur university with sustainable development in social, environmental and economic fields. The following

are suggested for entrepreneurship development in universities:

- Developing an entrepreneurial curriculum with up-to-date, in-demand, and interdisciplinary characteristics by university curriculum planners;
- Paying attention to innovation in research topics by professors, students and members of the Graduate Committee;

University administrators' welcome of from other individuals' ideas, especially in the field of entrepreneurship, in order to build confidence in the disclosure of their ideas;

Employing entrepreneurial indicators in attracting faculty members;

Identifying risk-takers for investing in the field of entrepreneurship and setting up knowledge society companies by financial managers of universities;

REFERENCES

[1] Bell, J. &Stellingwerf, J. J. (2012). Sustainable Entrepreneurship: The Motivations & Challenges of Sustainable Entrepreneurs in the Renewable Energy Industry, Master Thesis within Business Administration: Strategic Entrepreneurship, Jönköping International Business School.

[2] Berdahl, R. (1990). Academic freedom, autonomy and accountability in British universities. Studies in Higher Education 15(2): 169-180.

[3] Bikas, S. (1995). Innovations in University Management. Paris: UNESCO Publishing.

[4] Boyle, T.J. (2007). A new model of entrepreneurship education: Implications for Central and Eastern European universities. Industry and Higher Education (16): 9-19.

[5] Carlsson, B. and Fridh, A. (2002). Technology transfer in United States universities. Journal of Evolutionary Economics 12(2): 199-233.

[6] Cohen, B. and Winn, M. I., (2007). Market Imperfections, Opportunity and Sustainable Entrepreneurship. Journal of Business Venturing, 22, pp. 29-49.

[7] Dean, T. J. and McMullen, J. S., (2007). Toward a Theory of Sustainable Entrepreneurship: Reducing Environmental Degradation through Entrepreneurial Action. Journal of Business Venturing, 22, pp. 50-76.

[8] Etzkowitz, H. Minerva (1983). Entrepreneurial scientists and entrepreneurial universities in American academic science. Minerva; 21(2-3):198-233.

[9] Farasatkhah, M. (2010). University and Higher Education: Global views and Iranian problem, Tehran; Ney(in Persian)

[10] Fleaca, E, Fleaca, B &Maiduc, S. (2018). Aligning Strategy with Sustainable Development Goals (SDGs): Process Scoping Diagram for Entrepreneurial Higher Education Institutions (HEIs), Sustainability, 10(1032): 1-17.(www.mdpi.com/journal/sustainability).

[11] Halla, J. K., Danekeb, G. A. and Lenox, M. J.(2010). Sustainable development and entrepreneurship: Past contributions and future directions, Journal of Business Venturing 25, 439–448.

[12] Jacob, M., Lundqvist M. and Hellsmark, H. (2003). Entrepreneurial transformations in the Swedish university system: The case of Chalmers University of Technology. Research Policy 32(9): 1555–1568.

[13] Moshina, V. (2015). Does Entrepreneurship Contribute to Sustainable Development? A Systematic Literature Review, Department of Management Studies Aalto University School of Business.

[14] Nelson, A. J. (2005). Cacophony or harmony? Multifocal logics and technology licensing by the Stanford University Department of Music. Industrial and Corporate Change 14(1): 93–118.

[15] O'Shea, R.P., Thomas, J.A., Morse, K.P., O'Gorman, C. and Roche, F. (2007). Delineating the anatomy of an entrepreneurial university: The Massachusetts Institute of technology experience. R&D Management 37(1): 1-16.

[16] Toole, A.A. and Czarnitzki, D. (2007). Biomedical academic entrepreneurship through the SBIR program. Journal of Economic Behavior and Organization 63(4): 716-738.

[17] Zhou, C. and Etzkowitz, H. (2004). The entrepreneurial university and the future of higher education in china. Ethiopia Triple Helix Conference, Prepared Draft.

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