

PRESENTATION OF A CONCEPTUAL MODEL FOR THE CREATION OF AN ENTREPRENEURIAL UNIVERSITY

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ABSTRACT

Nowadays our society meets many changes that not coordinating with these changes causes many problems such as Unemployment, a weak economy and falling behind scientific developments around the world. One of the main problems is unemployment of university graduates, who are scientifically high and have great ability. Unfortunately, at present this is not only a good store of value for society but also a problem. If universities become Entrepreneur this problem changes to a strong point. In this paper by reviewing previous studies carried out we consider the factors influencing universities to become Entrepreneur and finally we reach a conceptual model. In this conceptual model there are two main factors which cause the universities to become Entrepreneur: 1- Internal factors include personality characteristics, organizational culture and organizational structure 2- External factors include the commercialization of inventions and patents and the registration of Knowledge-based companies in universities.

Keywords: *University Entrepreneurship, Personal Characteristics, Organizational Culture, Organizational Structure, Commercialization*

INTRODUCTION

One of the major goals of the university is to train professionals to enter the labor market and turn the country's economic cycle.

Universities with high academic level and high level of scientific developments affect the economic, social, and cultural changes. However; the universities themselves are also influenced by environmental changes. (Moradi, 2006, p.158)

Rapid changes in higher education are currently creating a new situation. (Yadollahi Farsi, 2007, p.93)

Recent changes has imposed a lot of pressure on the shoulders of the government and the Ministry of Science, Research and Technology and on the other hand, we faced the reduction in state funding in recent years, increasing numbers of graduates, rising unemployment, youth employment crisis(especially university graduates), changing expectations of applicants of universities, competition between them and changing market demands. By these changes the necessity of academic entrepreneurship and the creation of an entrepreneurial university as one of the key strategic and critical tools in higher education to meet this change and its impacts is clear and obvious. (Sharifzade ET.AL, 2009)

Then new mission of the universities is to create entrepreneurial capabilities in university graduates. Therefore, universities should start to prepare themselves for this role. In other words, academic entrepreneurship is a way to entrepreneurial universities. (Yadollahi Farsi, 2007, p.93)

UNESCO has defined the landscape of the modern university: a place where entrepreneurial skills develop to become entrepreneurs. (UNESCO, 2004)

In a study by Edward Roberts (Head of Entrepreneurship Center in MIT University) in 2001, nearly 8,000 MIT graduates have been involved in setting up new companies (one of them is Intel.) The spark of many of the ideas was struck in the classroom and laboratory classes and with different ways by students in which worked in groups changed to companies. (Jafari Moghadam, 2005, p.4)

But as we've seen in our country despite the gifted population and benefiting from abundant natural resources, production is low and unemployment is high. Many companies due to low productivity rates,

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lack of demand, etc. are on the verge of closure and country is very weak in competitive position in world markets. Policy makers work weakly in recognizing entrepreneurship. Previous experience in entrepreneurship development and support for entrepreneurs is very low and insignificant. (Sharifzade ET.AL, 2009)

There have not done many researches on root causes of this problem in the country and only about some of the factors impacting on academic entrepreneurship some research has been done. Because of the importance of the issue and the problems caused by the lack of entrepreneurship, factors affecting the entrepreneurial university should be more deeply examined.

Studies on the growth and development of entrepreneurship include:

- 1- Entrepreneurship training, particularly in the field of higher education (Arasti ET.AL, 2011). By entrepreneurship training, people become more responsible and successful business challenges, and unemployment rates are reduced. (Urbano et al., 2008, p. 337). By entrepreneurial training graduates are sent to the labor market. (Arasti ET.AL, 2011)
- 2- The role of university teachers is a lot in the entrepreneurial young vision, so they should have some skills. (Mohammadi Elyasi ET.AL,2012) teachers should teach and prepare students to be able to work in ambiguous and unstructured environments, therefore, they should also have required skills.(Solomon, 2007)
- 3- Creating an organizational culture appropriate for the growth of entrepreneurship in universities, so that a favorable environment should be provided for innovation and creativity to meet the environmental needs. Universities should remain in the context of changes, it should grow and be a place for cooperation of researchers, teachers and also be an important position for research and education. (Ropke, 1998, p.2)
- 4- Creating an entrepreneurial organizational structure cause growth and development of entrepreneurship. Enjoying the entrepreneurial structure means that the structure moves to dynamics, flexibility, decentralization, delegation and capable employee. (Jahed and Arasteh, 2011,pp.598)
- 5- Commercialization of knowledge and inventions, creating companies derived from universities based on advanced technologies.(Sharifzade ET.AL, 2009)
- 6- Because of the important role of entrepreneurship and social problems, promoting entrepreneurship is one of the tasks and prospects of higher education. (Sharifzade ET.AL, 2009)

LITERATURE

Clark (1998) offered two definitions of entrepreneurial universities: 1 -entrepreneurial universities deals with innovation in business and tries to be helpful in shaping the future of society 2 - entrepreneurial university is the one which is innovative, accepting venture and help to develop entrepreneurial behavior.

Trachnberg (2000) believes that the new entrepreneurial university is a university that gain income, see students as customers, teachers and administrators of business contact with each other and have relation with environments, institutes which have commercialization.

The impact of Personality characteristics on entrepreneurial universities

Studies show that personality traits approach compared with other approaches to entrepreneurship is more common. (Kruzic & Pavic, 2010, p.216) Approach to personality characteristics says that Entrepreneurs have characteristics, attitudes, and values which provides them driving force which distinguish them from others. (Gurol & Atsan, 2006, p.28) Mack Cleland says that characteristics of entrepreneurial are achievement motivation, risk taking, self-control, independence, creativity and positive attitude toward entrepreneurship. (McClelland, 1961) Bayer (1997) by analyzing more than 50 studies has identified features for entrepreneurs which are: Undertake, leadership, opportunities finding, bear the risk and ambiguity, creativity, self-reliance, the ability for adaptability and high motivation. (Zali ET.AL, 2007)

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Examples of research conducted in the field of entrepreneurial characteristics are in Table1:

Table1: Entrepreneurial Characteristics (Zali Et.Al, 2007)

Characteristics of entrepreneurial behavior	Timonz (1994)	Koratco (1999)	Bronze (2001)	Di Kenz & Foil(2002)	Hisrich and others(2003)	Kirby (2003)	Shomeron (2005)
Strong need to succeed	3	3	3	3	3	3	3
Pragmatist	3						3
Flexibility	3						3
Internal control		3	3	3	3	3	3
High energy level			3				3
Bearing ambiguity	3	3		3			3
The desire for	3	3	3	3	3	3	3
Risk taking	3	3	3	3		3	
Creativity and	3		3	3		3	
Intellect						3	
Perspective			3	3			
Innovation			3	3			
Leadership	3						

As we can see two characteristic strong need to success and desire for independence have higher rates. After these two internal control, risk taking, creativity and the opportunities are greater, respectively.

Impact of the Skills of Teachers on the Academic Entrepreneurship

Entrepreneurship educators should by participating in setting up and managing the business, interacting with entrepreneurs defining and conducting consulting- research projects related business, have required skills and abilities and must be able to document their experiences and convert them to accepted conceptual frameworks and patterns. (Mohammadi Elyasi ET.Al, 2012) In a research Mohammadi and others concluded that entrepreneurship teachers should have effective communication skills to exchange feelings, develop motivations and transfer experiences to students. . (Mohammadi Elyasi ET.Al, 2012)

The impact of education on entrepreneurial behavior

According to Drucker entrepreneurship can be taught. (Kuratko,2005, p. 580). Entrepreneurship is now a scientific field that can be learned. (Hodgetts & Kuratko, 2001, p.30).

Because entrepreneurship education has been proposed as a means to increase entrepreneurial orientation, educational projects are growing to increase the number of potential entrepreneurs. (Linan et al., 2011, p.195) Policymakers still believe that by entrepreneurship education we can enhance the entrepreneurial attitude. (Oosterbeek et al., 2010, p.443)

Rashid (2000) in his research on the role of education in increasing entrepreneurial attitude concluded, by teaching entrepreneurship, the higher scores on achievement motivation, creativity, self-esteem and internal locus of control gained, So based on his research, training cause increasing in entrepreneurial attitude. Smith et al (2006) investigated the impact of entrepreneurship education in universities and began examining the obstacles ahead. The results showed that entrepreneurship education is effective, but due to resource constraints and other problems associated with difficulties in implementation. Universities in Malaysia in the mid-1990s, which had a substantial attention to entrepreneurship and entrepreneurship education as a compulsory course for all fields, the research in this area was conducted and the results showed that 36.7% of students are interested in learning to start a business. Also, 44.4% believed that

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entrepreneurship is not innate and can be acquired by education. (Yu & Chan, 2007). Galway (2005) in his study on 519 students from four universities in Scotland came to the conclusion that entrepreneurship education increases entrepreneurial characteristics such as creativity and self-confidence. (Galloway, 2005). Saidi-Mehrabad (2008), in a study examines the impact of entrepreneurship training on the development of entrepreneurial behavior in the Ministry of Labor. The results show that entrepreneurship training causes efforts to develop and promote jobs and also causes entrepreneurial behavior in the Department of Labor.

The Impact of Organizational Culture on Academic Entrepreneurship

University must create an entrepreneurial culture to become entrepreneurs. (Clark,1998, p1-2).

Table 2: Aspects of Entrepreneurial Organizational Culture from the View of Some Experts in the Field of Entrepreneurship (Susan Ghanati ET.AL, 2010)

Name of the experts	Mentioned dimensions of entrepreneurial organizational culture
Cornoval &Perlman (1990)	Risk, earn respect, ethics text on integrity, trust and credibility, people, emotional commitment, working as recreation, leadership at all levels, valuing success, sought attention to detail, the structure and process , effectiveness and efficiency
Oslo(1990)	Emotion, excitement and arousal, attention and concerns about products and customers, the emphasis on personal policies, financial and legal focus is clearly the work to be done, spontaneity, experience and spirit of confidence, confidence in the competence and ability of the leaders to the people, the way people behave aggressively, in favor of arguing, tradition-breaking, rude and demanding experience
Aqual(1994)	Challenge and defiance, independence, mobility, trust and openness, time for thought, humor and entertainment, conflict, supporting the idea, debate, risk
SAWTELL(1998)	Model of entrepreneurial, self-selection, deep pattern entrepreneurship, inner motivations, learn from failure, and delegation of control, communication, disobedience, budget cuts
Morris(1998)	Strong culture, commitment to innovation, risk tolerate failure, hyperactivity
Macquarie(2003)	Courage, tolerance deviation creative, bold forecasting, great work, risk taking, communication, cooperation and collaboration, innovation, tolerate to hear opposing opinions, recreation

Organizational culture is entrepreneurial if from the view of expert in table 2 have common dimensions as follows: Risk (6) Trust (5), working as recreation (3). (Susan Ghanati ET.AL, 2010)

The Impact of Organizational Structure on the Level Entrepreneurship

Here we consider the university as an organization which should have entrepreneurial structure. Enjoying the entrepreneurial structure means that the structure moves to dynamics, flexibility, decentralization, delegation and employee empowerment. (Jahed and Arasteh, 2011, pp.598).

Donisi (2003) Quoted from Davidson (2003) in a research, examined the consequences of organizational entrepreneurship impact, the results showed that if the information channels be open, trust is made and significant relationship between the level of trust and organizational entrepreneurship exist.

Shomer in 1986 (Quoted from Davidson and Weakland (2001)) states that to nurture entrepreneurs in an organization the departments should be completely separated, Risk groups exist and be independent of companies, organizational bureaucracy be low and flexibility be high. The results of a research by Kyrby

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shows the failure of universities in promoting to entrepreneur organization is to a large extent because of the inherent nature of large organizations such as the impersonal nature of the relationship, hierarchical structure, organizational culture is conservative, the need to control and adherence to rules and procedures, improper methods of compensation and return. (Kirby, 2006, p.599).

RezaZadeh (2003) in a research examined the relationship between organizational structure and organizational entrepreneurship in Tehran social security organization; he concluded that there is an inverse relationship between the complexity of organizational structure and organizational entrepreneurship, formality and organizational entrepreneurship, organizational entrepreneurship and concentration. Research by Marshall and colleagues (2002) reached the same conclusions.

The Impact of Commercialization of Knowledge on the Level of Entrepreneurship

Collaboration between industry and universities was founded with Muriel Law in 1862 and that was a way to start commercialization that means entering technologies to market. (Karlsson, 2007, p.27)

Two commercial waves on commercial development are proposed. The first wave (early 1980s), was commercialization by creating traditional parks and increasing funding for academic research for collaboration with industry, and the second wave (second half 1990) was with increased activities of branch companies, granting patents and more activities of students in commercial projects. (Rasmussen et al., 2006, p.530)

Commercialization of knowledge joins universities and knowledge users and linking economic development with the universities. (Etzkowitz, 2003, p.5)

It should be noted that as science produced that country doesn't become self-sufficient in technology, scientific publications should take steps to become technology that can be used in society. (Fakour, 2006, p.24)

Idea to Market Process (Knowledge to Practice) can be divided into three stages, which are shown in Figure 1:

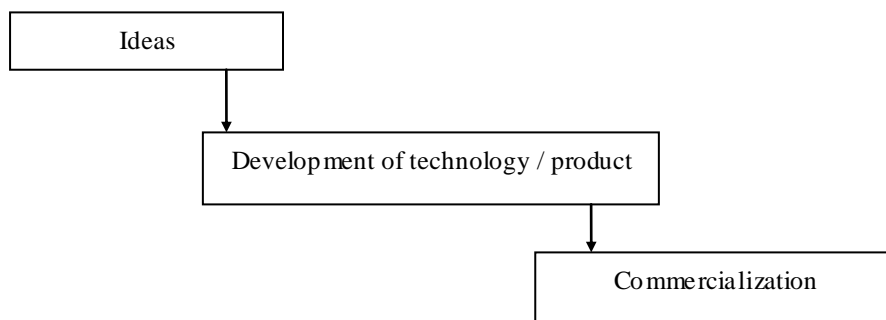


Figure 1: The Main Stages of the Development Process of New Technology (Bandarian ET.AL, 2008)

Science is produced in universities and by commercialization of it, can be utilized. By commercialization universities also benefits which the most important benefit is earning income that reduce the dependence to state budget. (Buenstorf, 2009, p.281)

According to research conducted in academic entrepreneurship, today commercialization of knowledge is considered necessary for the survival of universities. However, it must be considered that there are some barriers in the development of commercialization of knowledge and academic entrepreneurship that it seems inevitable to identify and fix them.

A number of criteria have been proposed by researchers and commercial evaluation firm (self-made) are graduates who have been hired, patent licenses, permits, publications, mechanism of transmission, innovation networks, social networking (cooperation), Innovation of production, academics firms, the

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position of new businesses, the number of new businesses, the revenue licenses, patents or royalties, research income, income tax, legal costs, the ability to attract research funding, Risk taking capital, capital of universities and academic firms, university policies, strategies, organizational structure, institutional norms, organizational culture, organizational incentives (commercial revenue split between research groups and universities, and system of improvements and credits), University of context, quality of the teachers (experience and skills), incubators, science and technology parks , individual motivation, willingness to risk, skill sets of academic entrepreneurs (entrepreneurial commitment), job satisfaction, identify opportunities (depending on pressure of market).(Zare,2010)

THE CONCEPTUAL FRAMEWORK

Clark by research in five leading European universities believes the routes of organizational changes to become entrepreneurs is in the creation of core strong management, development of structural boundaries, creating an entrepreneurial culture in the university organization, creating a strong academic base and diversify of funding resources.(Clark, 1998, p.5)

There are five key indicators for universities to become entrepreneur which include: the flexible structure, coherent entrepreneurial culture, continuous interaction with the environment, a shared vision and strategy for forward-looking and attention to the human resources. (Kordnaeij, 2005, p.29).

According to the above mentioned documents the conceptual model presented in figure 2:

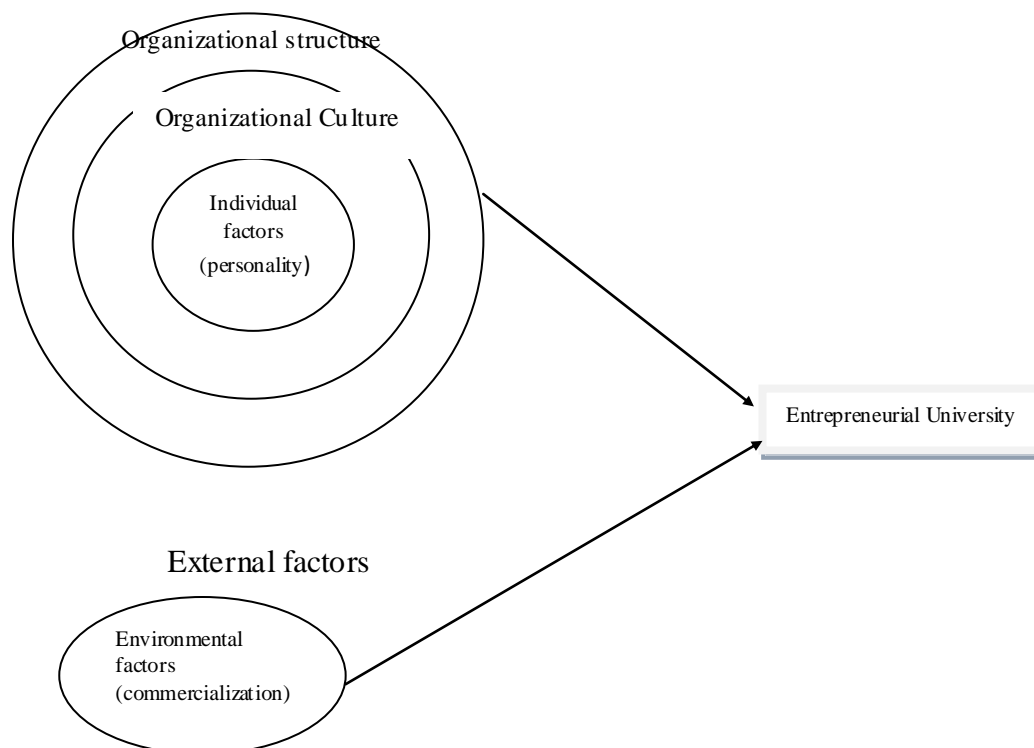


Figure 2: Conceptual Model of Factors for creating Entrepreneurial University

CONCLUSION

Individual factors or characteristics of individuals (faculty, staff, student), the degree of teacher's skill to educate entrepreneur students, training of students, university organizational culture, organizational structure and commercialization of innovations and inventions and establishing knowledge based firms, have a direct relation to the level of entrepreneurship in universities.

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Generally it can be said there are some factors which change the universities to Entrepreneurial ones, we can divide them to two kinds of factors: the internal factors include individual factors (personality) characteristics of individuals (students, faculty and staff), the impact of teachers' skills, training, organizational culture, structure of the university and external factors which include communication with the outside world and industry. (Commercialization). To meet the challenges of today, the universities must become entrepreneur.

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