

A CONCEPT OF ENTREPRENEURIAL UNIVERSITY: CRITICAL ANALYSIS OF LITERATURE

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Abstract

“The search for new sources of finance to replace declining government funding for higher education is a strong imperative for universities in a number of economies to adopt “new managerialism” and “entrepreneurialism”. In the 21st century, the “entrepreneurial university” tends to displace the 20th century’s socially-oriented “mass university”, yet must still co-exist with the traditional “ivory tower” university. “The role of the entrepreneurial university is increasingly being seen as important for finding new ways to compete and succeed in uncertain and unpredictable environments and for finding new solutions to the multiple challenges that need to be addressed for the public good whether local or global”. The main objective of this article was to contribute to the understanding of the entrepreneurial university and to determine the factors for successful entrepreneurship universities. The author used entrepreneurship theories to define and conceptualize entrepreneurial university. Design/methodology/approach: The author used a qualitative approach by reviewing literature on the concept of entrepreneurship universities. Findings: This study presents a conceptualization for entrepreneurial universities and proposes six factors for the successful entrepreneurial universities. Conclusions and recommendations: for universities to transform to entrepreneurial universities it requires considerable effort, top managers of the universities should change the style of management, reduce bureaucracy to enhance decision making, monitor the external environment and reduce time wastage. The result of the study is useful to university managers, investors, academicians and policy makers.

Keywords: *Conceptualization, Entrepreneurial Culture, Entrepreneurial University, Innovation*

Introduction

Today, the role of universities has changed and universities are not being only seen as creators and transmitters of knowledge but also as institutions that give innovative answers to economic and social challenges of society. The Higher education has faced many challenges that include reduction in government capitation, competition for limited number of qualified students between private and public universities, perception on low quality services, lack of adequate skills for graduate’s employability, need to comply with the regulations from the regulatory bodies, offering of duplication programmes, closer linkage and partnerships with private sector, access of disadvantage students to education, low research outputs and inability to respond to the macro environmental factors. Apart from this, an entrepreneurial culture needs to be encouraged and developed inside the organization among its internal stakeholders (students and staff). Leadership plays an extremely important role in promoting of entrepreneurial spirit at all levels of the university. In order to respond effectively to the socio-economic demands of societies, higher education needs to have a diverse portfolio of their financial incomes (Bruna, 2018).

Universities in developed countries have become entrepreneurial (Mowery et al., 2004; Siegel, 2006a). In the United States, several factors have facilitated what Chesbrough (2003) terms the shift from a “closed innovation system” to an “open innovation system”. These factors include, among others, the rise in venture capital, the passage of the Bayh-Dole Act (providing incentives for universities to patent scientific breakthroughs accomplished with federal

funding), the rise in the pool and thus mobility of scientists and engineers and important technological breakthroughs in computing (microprocessor), biotechnology (genetic engineering), and, more recently, nanotechnology. As a result, since the early 1980s, US universities have greatly increased their entrepreneurial activities along many dimensions: patenting and licensing, creating incubators, science parks, and university spin-outs, and investing equity in start-ups, among other indicators (Mowery et al., 2004; Siegel, 2006a). A concomitant rise in university entrepreneurship can also be observed in Europe. The European Commission, the executive body of the European Union, has launched several direct incentives in an effort to proactively enhance the transfer of university technology to industry (EIMS, 1995). European Universities, particularly some in Germany, Italy, Sweden and the United Kingdom are rich sources of technology; however, largely due to differing legal systems (Frank, et al., 2007).

After the World War II, Stanford University found itself in a difficult financial situation. The then rector Frederick Terman saw the solution of the crisis and return to a high scientific level in collaboration with the business community. However, the business community was willing to pay only as much as it could get back, which meant that there was no money for fundamental research and similar activities. When the university succeeded in restoring the level of its research activities through a large number of projects, collaboration with the business community was continued, but under the condition not to compromise the fundamental principles of university's independence and quality of work. As a result of such relationship, the university was able to create technological innovations that led to the creation of today's Silicon Valley. However, Stanford University cannot be given acknowledgement for the establishment of the Silicon Valley without acknowledging the business community for the development of Stanford. It can be argued that the success of Stanford University was in the creation of both internal (among university teachers) and general (across the university) entrepreneurial culture, which has enabled synergies and produced excellent results.

The Massachusetts Institute of Technology (MIT) is an example of best practice in implementing the entrepreneurial university concept. The Martin Trust Center for MIT Entrepreneurship was founded in 1990 and offers more than 60 courses on a variety of topics. MIT follows a team-based approach with the focus on problem solving and a close connection with companies. The success is reflected in the numbers: in the first decade of the 2000s, MIT alumni started about 12,000 new firms and 18,000 are projected for the current decade. (Roberts, *et al.*, 2015). The success of MIT's entrepreneurial activities is a combination of several factors, such as excellent interdisciplinary research and research in practical fields, a strong network that includes ties to government and industry and the commitment to entrepreneurship programs (O'Shea, et al., 2007).

Research Objective

The study was guided by two research questions;

1. What does it mean to be an entrepreneurial university?
2. What are the factors for successful entrepreneurship in universities?

Literature Review

Definition of the entrepreneurial university

The literature framework on the concept of an entrepreneurial university presents various definitions. Entrepreneurial university refers to the university, which is able to survive and adapt in highly complex and uncertain conditions of the environment in which it operates

(Clark, 2001). American interpretation of the term entrepreneurial university is very clear: entrepreneurial university is associated with doing business in the market, satisfying the needs of its customers. Stanford University is stated as one of the first examples of entrepreneurial universities (Lenoir *et al.*, 2003, cited by Blenker *et al.*, 2006). Etzkowitz (1983) sees the entrepreneurial university as an institution with a high number of financial sources (patents, research contracts, partnerships with private businesses) beside the traditional sources from public funding of government and students' fees. According to Dill (1998), an entrepreneurial university has formal units with explicit responsibility for promoting technology transfer.

An entrepreneurial university is associated with a university that has the capacity to produce innovation through research and new ideas (Shattock, 2008). Gibb (2013) defines the entrepreneurial university as an institution that is designed to empower staff and students to demonstrate enterprise, innovation and creativity in research, teaching and pursuit and use of knowledge across boundaries.

Kirby, (2002) sees the entrepreneurial university as one that has the ability to innovate, work in groups, exploit opportunities, take risks and effectively respond to the challenges they face. In a very competitive environment, entrepreneurial universities are the ones that will be able to survive by having clear strategies in showing excellence in teaching, research and entrepreneurship activities. Entrepreneurial universities seek to become “stand-up” universities that are significant actors in their own terms (Clark, 1998), offer and promote various support measures for entrepreneurial activities (Antoncic, 2001) by working in close relationship with partners and networks with public and private institutions by investing in their social capital in order to facilitate the creation and exploitation of knowledge and technology (Leydesdorff & Meyer, 2003).

However, many scientists are opposed to the creation of entrepreneurial paradigm, which they perceive as a threat to the traditional integrity of the university (Pelikan, 1992), and excessive emphasis on profit leads to the loss of university's role as an independent critic of the society (Krimsky, 1991, cited by Etzkowitz, et al., 2000). These critics of the entrepreneurial modality of university believe that producing students and publishing research should remain university's fundamental roles. The transition towards entrepreneurial university does not mean that university becomes less oriented towards research, but that research and educational activities are seen as capital, and university expects to generate profit from its activities, primarily through projects with the business community (Blenker, et al., (2006).

Theoretical Foundation

Opportunity-based entrepreneurship theory

According to Peter Drucker entrepreneurs do not cause change (as claimed by the Schumpeterian or Austrian school) but exploit the opportunities that are brought by change (in technology, consumer preferences, social norms). He defines an entrepreneur as someone who searches for changes, responds to it and exploits it as an opportunity. According to Drucker, an entrepreneurial firm must innovate or be change oriented. In his book of *innovation and entrepreneurship* he says that no better test for a history of entrepreneurship should be found than the creation of the modern university, and especially the modern American university. (Drucker, 1985). Howard Stevenson- added an element of resourcefulness to the opportunity oriented definition based on research he conducted to determine what distinguishes entrepreneurial management from administration management. He suggests defining the heart of entrepreneurial management as “the pursuit of opportunity without regard to resources

currently controlled”. He found that entrepreneurs not only see and pursue opportunities that elude administration managers; entrepreneurs do not allow their own initial resource endowment to limit their options. Entrepreneurs mobilize resources of others to achieve their entrepreneurial objective. Administrators allow their existing resources and their job description to constrain their visions and actions (Nteere, 2012).

Schumpeterian theory of innovation

Schumpeterian theory places emphasis on innovative entrepreneurs who upset and disorganize the existing way of doing things. Schumpeter saw an entrepreneur as someone who creates a firm, implements ‘new combinations of means of production’, and an innovator. In his theory of economic development, the entrepreneur’s role is to disturb the status quo (the general equilibrium) through innovation. He claimed that all change that altered the normal circular flow of industry was as a result of entrepreneurship, and he called this force the “creative destruction of capital”. Creative destruction is a process of industrial mutation that revolutionizes the economic structure from within, destroying the old one, creating a new one. Schumpeter, (1934) argued that innovation by the entrepreneur leads to gales of creative destruction as they cause old inventories, ideas, technologies, skills and equipment’s to be obsolete. Schumpeter argued that innovation was to be found in entrepreneurial efforts to; 1) offer new products and services, 2) new markets, 3) new production methods, 4) new sources of supply and 5) developing a new organization. According to Schumpeter, entrepreneurship is the source of change. Innovation creates new activities and markets. He proposed that profits are the result of firm innovation (Schumpeter, 1934).

Resource-based view (RBV)

The resource-based view (RBV) was developed from the concept of Penrose, Schumpeter, and Ricardo (Scherer, 1980) for sustained competitive advantage by using strategic resources. The resource-based approach concentrates on the characteristics of resources and strategies for organization survival, competitive advantage, and long-term performance (Barney, 1991). Resources and capabilities are seen as sources of superior firm performance. The resource-based view assumes that resources are heterogeneity distributed among the firm and are immobile across the firms (Barney, 2001a). External variables are the strategic factors that impact the firm, including other stakeholders such as buyers, suppliers, intensity of competition, and industry and market structure (Porter, 1985). These factors impact on how resources are conceived, as well as how they are deployed. According to resource-based view, firms with VRIN (valuable, rare, inimitable, and non-substitutable resources) criteria have the competency for achieving high performance (Barney 1991). According to Miller and Shamsie (1996), resources are inputs into an organization’s production process that contain tangible and intangible resources, either knowledge-based or property-based. Property-based resources are tangible resources while knowledge-based resources refer to intangible resources. Both of them are necessary for an organization’s operation. In the resource-based view, resource acquisition is an important point because resources with value, rareness, inimitableness, and non-substitutability can generate competitive advantages and have a great influence on organizational performance.

Social capital or social network theory

The term “Social Capital” originated from the areas of sociology and political science and originally appeared in Hanifan (1916) study of rural school’s community centers. Burt’s (1992) who defined social capital as “friends, colleagues, and more general contacts through whom you receive opportunities to use your financial and human capital”. Nahapiet and Ghoshal (1998) defined social capital “as the sum of the actual and potential resources embedded within,

available through, and derived from the network of relationships possessed by an individual or social unit” Granovetter (1982), used the term social network theory instead of social capital, highlighting the commonality between the two.

Entrepreneurs are embedded in a larger social network structure that constitutes a significant proportion of their opportunity structure (Clausen, 2006). Shane and Eckhardt (2003) says “an individual may have the ability to recognize that a given entrepreneurial opportunity exist, but might lack the social connections to transform the opportunity into a business star tup. It is thought that access to a larger social network might help overcome this problem”. In a similar vein, Reynolds (1991) mentioned social network in his four stages in the sociological theory. The literature on this theory shows that stronger social ties to resource providers facilitate the acquisition of resources and enhance the probability of opportunity exploitation (Aldrich & Zimmers, 1986). Other researchers have suggested that it is important for nascent founders to have access to entrepreneurs in their social network, as the competence these people represents a kind of cultural capital that nascent ventures can draw upon in order to detect opportunities (Aldrich & Cliff, 2003., Gartner *et al*, 2004).

Conceptual framework

By integrating the empirical review of literature on entrepreneurship universities and theories of entrepreneurship, a conceptual framework on figure 1 can be derived that answers the question what are the factors for the successful entrepreneurship in universities.

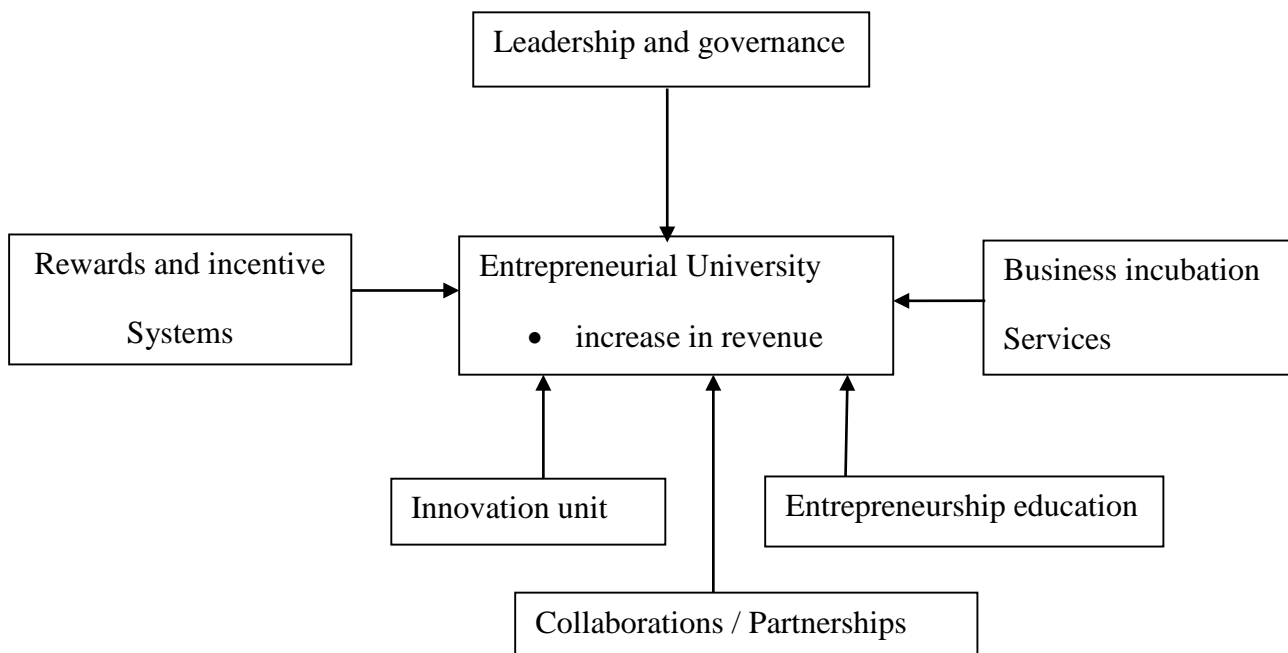


Figure 1: Conceptual Framework

The following factors explains how to develop entrepreneurial culture in the universities; these factors include, leadership and governance, innovation unit, business incubation services, collaborations/partnerships, incentive and reward systems, and teaching of entrepreneurship education.

Leadership and governance

In order to develop an entrepreneurial culture in an institution, strong leadership and good governance are crucial. The words "enterprise" and "entrepreneurship" should be included in the university vision and mission statements. The management should be adaptive and flexible to what is happening in the environment this promote enterprise culture and bring sense of commitment. The strategic plan of the universities should have one of the key strategic objective/activity on entrepreneurship with key performance indicators such as generating entrepreneurial motivation, generating entrepreneurial competences and skills; support business start-ups; commercialize research results through technology transfers and business start-ups; generate revenues for the institution from spin-off activities; strengthen co-operation between the institution and local firms (European Commission, 2012).

Innovation unit

The innovation unit will coordinate and integrate entrepreneurial activities across a university, coordinate across departments, faculties and other centres, and avoid the duplication of work within a university and its local entrepreneurship ecosystem. The unit will have a responsibility to overcome bureaucratic barriers which is key to entrepreneurship. Universities with fewer barriers or hierarchies find it easier to undertake entrepreneurial activities and speed up idea creation and decision making. The unit should be linked to their external environment by having a strong presence in the community. This might include for example, providing facilities for start-ups or established and also determine the strategic direction of local development. The unit should be proactive towards its environment, in terms of prediction of possible changes in trends, demand, and adjustment of own activities accordingly; - Continuous thinking about innovating products (educational programs, research topics...), processes (methods of teaching, methods of research, methods of transfer of knowledge to the environment...), about new organizational solutions, about new markets, etc (European Commission, 2012).

Business incubation services

Business incubators were viewed as tools for promoting entrepreneurship and economic and social development through enhanced innovation, job creation, and social cohesion (Theodorakopoulos et al., 2014). Business incubation is an important tool that can be used by universities to support new start-ups and spin-offs, as well as building links to industry. Incubators often provide free or subsidised premises, access to laboratories, research facilities and IT services, coaching, mentoring, training and access to financing. Universities should have incubators on-site that provide these services, or provide assistance to staff, students and graduate entrepreneurs in accessing external facilities that provide this type of support.

Collaborations/partnerships

Knowledge exchange should be part of the institutional policy. The policy should give guidance on how all types of relationships with industry, the public and private sector etc, can be formed and managed. This will include support mechanisms for coordinating these relationships. Universities should support knowledge exchange mechanisms and collaboration with the external environment. This can take place by formal means such as part of an active curriculum and internships, or informally through breakfast clubs and other social gatherings and activities. The knowledge created and co-created by research, industry, education, entrepreneurs and the wider community needs to be absorbed back into the university's environment. There need to be mechanisms in place by which the university can absorb information and experience from the wider ecosystem. Universities should have links with other international networks, university innovation clusters and bilateral partnerships with

other institutions. Universities should use their networks, partnerships and international alumni to feed back into the teaching, learning and research agendas (Jahangirs et al., (2012).

Incentive and reward systems

Universities should reward staff and students who are innovative. A clear reward system should be put in place and well articulated. An incentives and reward system for staff at both individual and team level should be taken into consideration and applied in order to stimulate and nurture entrepreneurship among the institution staff. Such rewards might take different forms starting from bonuses, reduced teaching load, profit-sharing, organizational recognition programs of the institution. Thus, the nurturing entrepreneurship has an impact in enhancing research talents, promoting academic entrepreneurs. It also has an influence on knowledge generation. Entrepreneurial Universities should actively encourage and support the mobility of their own staff and students. The institution should support international mobility through exchange schemes, scholarships, overseas internships and the use of other broader mobility programmes.

Teaching of entrepreneurship education

“Entrepreneurship education seeks to raise awareness for entrepreneurship and to provide the knowledge and skills to encourage entrepreneurial activity as an indirect support mechanism for fruitful business-academia links” (Guenther, *et al.*, 2008). Entrepreneurship skills as a course unit should be taught to all the students in the universities, this will enable them change their attitudes to self-employment. When teaching entrepreneurship skills it’s necessary to use role models as they can influence the entrepreneurial intentions of students. Business plan should be made compulsory for students so that they can put on a paper the ideas that they have for a business that can be incubated. Assessment will need to be done in relation to well defined courses being offered. To score highly a university should assess the level of engagement with entrepreneurial teaching and learning across all faculties and departments and compare and contrast the findings and ensure that the results are fed back into course renewal and staff development plans.

Conclusion and Recommendation

Based on the theoretical and empirical review of literature the following conclusions and recommendations can be made:

Conclusions

1. It’s possible for the universities to transform to entrepreneurial universities, however it require considerable effort from all the stakeholders.
2. There is need to constantly review the internal processes, that may act as a barrier to entrepreneurship especially bureaucracy, so that decision making can be made faster and this will ensure those people with bright ideas can be supported to develop them.
3. There is need to monitor the external environment especially to know what the competitors are doing and the new regulations issued by the regulatory bodies from time to time and evaluate its implication so that a decisive action can be made.

Recommendations

1. The top managers of the universities should change the style of management to entrepreneurial management style so that they can cultivate the entrepreneurial culture within their organizations
2. Universities should minimize on time wastage, more than 50% of time is wasted in activities that have no direct benefits to the organizations, spending a lot of time in unproductive meetings and focusing more on processes other than results.

3. Information technology should be used in all the processes this will lead to the efficient utilization of the resources and less investment in physical resources especially academic halls as some of the course units can be delivered using blended approaches of learning.
4. Since most of the studies were done globally, there is need to carry research on regional and local universities.

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