Entrepreneurial University Conceptualization: Case of Developing Countries

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Abstract
Purpose: The main purpose of the present paper is to elaborate an entrepreneurial university conceptualization which could be appropriate for developing countries. A conceptualization which distinguishes between different elements of entrepreneurial universities in developing countries, and identifies the common ones. This conceptualization considers the indigenous aspects and the contextual factors.
Design/methodology/approach: The authors used a qualitative approach to investigate the concept, more deeply, in developing countries. In order to do so, a series of semi structured in-depth interviews were conducted with ten experts in this domain. Coding of qualitative data -both interviews and documents- was used to identify new dimensions, elements, and variables. The experts were chosen from knowledgeable individuals in this domain in the universities, including university officials, professors, and officials of the Science and Technology Parks. It should be noted that a non-probability sampling technique, i.e. judgmental sampling were used to find the knowledgeable experts of this field of study.
Findings: This study presents a conceptualization for entrepreneurial universities in the developing countries. The findings reveal that there are four main elements in the proposed entrepreneurial university conceptualization, which are as follows: resources, capabilities, mission, and impeding elements.
Practical implications: The results of the present study could be used for policy making in the higher education sector of developing countries. Also, the results might be compared with the other conceptualizations in different contexts.

Keywords: Entrepreneurial University, Conceptualization, Triple Helix, Developing Countries
Paper type: Research paper

Introduction

After years of neglect, higher education in developing countries draws the attention of many scholars. These countries commenced following the footsteps of universities in developed countries. Over the last decade, slow movements were shown in developing countries, moving toward a Utopia for their higher education. During last twenty years, universities in both developing and developed countries were accepted as critical role players in the knowledge economy (Mian, 2003). As Mian (2006) argues, in the meeting of OECD education ministers in 2006 three main areas of higher education challenges were identified, which were: funding, quality, and relevance. But still there is a long way to achieve this significant and critical goal.

While Ropke (1998) considers three items for a modern entrepreneurial university which are: adopting an entrepreneurial management style, entrepreneur members, and entrepreneurial interaction with the environment, it seems that universities in developing countries are just trying to achieve some of these items, even in a satisfactory and not necessarily a perfect way.

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Following the developing countries' footsteps in one hand, and feeling the existing gap on the other hand, creates significant challenges for universities of developing countries.
In order to investigate these challenges, one might propose a comprehensive study. But, it is evident that investigating different universities in developing countries is something hard to be achieved, while it could be possible in an international level project. Therefore, in this research the main purpose is to conceptualize the entrepreneurial universities in developing countries, using Resource Base View (RBV). The principal contributions of the present study are as follows: proposing an entrepreneurial university conceptualization for developing countries, studying the case of University of Tehran (UT); finding new dimensions for these universities; and using RBV to investigate these entities in our case.
The paper is organized as follows. First, a literature review on entrepreneurial university conceptualizations is presented. Then, the research methodology is elaborated. Afterwards, the results are discussed, and finally, the paper concludes with some practical and theoretical implications.

Literature Review

Today, entrepreneurial universities, which are the result of the second revolution in the mission of universities (Etzkowitz *et al.*, 2000), are playing a paramount role in economic development of different countries. Universities, especially the entrepreneurial ones, are important actors in the "Triple Helix" of University-Industry-Government relations that promote the science-based innovative sphere of the whole globe (Etzkowitz, 2006).
Hopefully there is a vast but fragmented (Rothaermel, *et al.*, 2007) and embryonic (Guerrero and Urbano, 2010; Salamzadeh, *et al.*, 2011) literature in this area of research, which could pave the way for proposing a conceptualization. It is incontrovertibly axiomatic that this research substantially contributes to the literature. As mentioned by Zhou (2008), "The dawn of the entrepreneurial university models are emerging", then the need for a more holistic view is inevitable.
In the existing literature, theoretical models are available, which their focus are on explaining the phenomenon of entrepreneurial universities (Clark, 1998; Sporn, 1999, 2001; Etzkowitz, 2004; Kirby, 2005; O'Shea et al, 2005, 2007, 2008; Guerrero et al, 2006; Rothaermel et al, 2007; Gibb et al, 2009; Guerrero and Urbano, 2010; Salamzadeh et al, 2011; Sooreh et al, 2011).
Clark (1998) enumerates five elements for entrepreneurial universities, which are as follows: A strengthened steering core, an expanded developmental periphery, a diversified funding base, a stimulated academic heartland, and an integrated entrepreneurial culture. In his book, Clark reports the results of a longitudinal study, carried out in five European universities in the mid-1990s. This study is considered as a critical point in the existing literature of entrepreneurial universities.
Sporn (1999a, 2001) considers a series of elements which are: Mission, goals, structure, management, governance and leadership, networks, conglomerates and strategic alliances, and culture. Sporn (1999b) mentions that European universities are facing competitive environments, declining resources, and changing societal needs. Also, she mentions that a more adaptive university will be the one which survives.
Etzkowitz (2004) considers interdependence with the industry and government and independence from other institutional spheres, hybrid organizational forms, capitalization of knowledge and renovation as the brilliant elements and factors in an entrepreneurial university.
Kirby (2005) mentions incorporation, implementation, communication, organization, encouragement and support, recognition and reward, endorsement, and promotion as the main elements in an entrepreneurial university.
Guerrero et al. (2006) investigated the entrepreneurial university with Institutional theory and categorized the elements in two groups: formal and informal. Rothaermel et al. (2007) review the

literature on university entrepreneurship, and, as their study results, consider a group of elements, i.e. policies and technology, culture, agents, status, networks, and localization.
O'Shea et al. (2005, 2007, and 2008) consider the anatomy of an entrepreneurial university and specifically MIT. Finally, they conclude that these elements are of paramount importance in the anatomy of an entrepreneurial university: human capital resources, financial resources, physical resources, commercial resources, status and prestige, networks and alliances, and localization.
Guerrero and Urbano (2010) took advantage of recourse based view to elaborate the internal sectors of an entrepreneurial university, and Institutional theory as a basis to analyze the environmental factors affecting formation of entrepreneurial universities.
Salamzadeh et al. (2011) considered an Input-process-output-outcome model to define the entrepreneurial universities. In their view, *"an entrepreneurial university is a dynamic system, which includes special inputs (Resources, Rules and regulations, Structure, Mission, Entrepreneurial capabilities, and Expectations of the society, industry, government and market.), processes (Teaching, Research, Managerial processes, Logistical processes, Commercialization, Selection, Funding and financial processes, Networking, Multilateral interaction, and Innovation, research and development activities), outputs (Entrepreneur human resources, Effective researches in line with the market needs, Innovations and inventions, Entrepreneurial networks, and Entrepreneurial centers) and aims to mobilize all of its resources, abilities and capabilities in order to fulfill its Third Mission"*.
Sooreh et al. (2011) used Importance-Performance analysis and TOPSIS technique to define and measure entrepreneurial universities. They propose a model which includes nine building blocks, i.e. formal, informal, and internal inputs; formal, informal, and internal processes; and formal, informal, and internal outputs.
As it is noted earlier, a series of conceptualizations and models are in the literature which mainly tries to elaborate the evolutionary progress of the entrepreneurial universities or to conceptualize the phenomenon. Also, a series of cases were studied, but in different manners and using different approaches (e.g Bramwell and Wolfe, 2008; Zhou, 2008; O'Shea et al., 2007; O'Shea et al., 2005; Lazzeretti and Tavoletti, 2005; Zhao, 2004; Jacob et al., 2003; Lazzeroni and Piccaluga, 2001; Cowen, 1991; Palfreyman, 1989). As mentioned earlier, this study attempts to elaborate an entrepreneurial university conceptualization for developing countries.

Research Methodology

In the present research, a qualitative approach was used to gather and analyze the required data. Since knowledgeable experts were not easily identifiable, a non-probability sampling technique, i.e. "judgmental sampling" was used to select a sample of experts for this study. Purposive/judgmental sampling is a type of non-probability sampling in which the researcher's judgment is the basis for selecting experts (Babbie, 1999). The experts were chosen from knowledgeable individuals in this domain, including university officials, professors, and officials of the Science and Technology Parks. The criteria to choose the experts were as follows:

a) at least, five years of related (practical or theoretical) experience in the fields of academic entrepreneurship
b) related research background in the field of academic entrepreneurship, and entrepreneurial universities

A series of semi-structured interviews were conducted for data collection. Ten experts were chosen and interviewed in one to two sessions. Coding methods were used to identify the dimensions and their elements and variables. The gathered data and analyzed conceptualization was circulated through the interviewed experts, and the face/expert validity of the conceptualization was confirmed.

Findings

The RBV (Barney, 1991; Penrose, 1959) offers a useful tool for understanding the impact that resources and capabilities to an entrepreneurial university can have on its Third Mission accomplishment. The present study takes advantage of the brilliant ideas of Guerrero and Urbano (2010) in using the RBV to explain the internal factors (resources and capabilities) of an entrepreneurial university. As they have mentioned in their study, the internal factors (resources and capabilities) could generate a competitive advantage for entrepreneurial universities. They categorized these factors in two groups: resources (human, financial, physical, and commercial), and capabilities (status, networks, and localization).

We used RBV as the basis for our study as well. But, we tried to concentrate on the more detailed information to make the conceptualization more comprehensive and comprehendible. At the same time, the proposed conceptualization in this study best fits to the context of developing countries. The other difference between our study and their study is that we dealt with the internal factors and not the external ones.

In order to the coding method, the gathered data from interviews and documents were analyzed and the coding process repeated for two times. In the first phase, variables were identified, based on verbal statements (e.g. I2-12 means the twelfth verbal statement of the second interviewee), and grouped into elements. Then, the elements were grouped into dimensions. Table 1 presents samples of verbal statements related to the mission of the entrepreneurial university. It shows the "entrepreneur generation" element of the university, including generating entrepreneur students/alumni, professors/trainers, employees, and even citizens.

Table 1: A Sample of Verbal Statements

Interviewee	Statement no.	Verbal Statement
I7	9	University is a place to train people. Training human resources is along with research and education.
	11	All the individuals in the university should have these entrepreneurial characteristics. But, of course the importance is different for students, professors, and employees. The first two are more important. Employees can behave entrepreneurially as well.
	21	University should be able to train human resources, create new technologies, new products, knowledge, and even networks.
	⋮	⋮

Table 2 shows the dimensions, elements, and variables of the UT as an entrepreneurial university. As it is shown in the table, there are four main dimensions in the conceptualization, which are:

a) Mission:

An entrepreneurial university becomes distinct from other universities, based on its mission. The Third Mission which seeks to contribute to the socio-economic development of its region/country. In this study, the mission consists of five elements, i.e. entrepreneur generation, applied research, knowledge and technology transfer, contribution in socio-economic development, and developing an entrepreneurial culture.

An entrepreneurial university generates entrepreneurs. These entrepreneurs are not limited to students and alumni, but also includes professors/trainers, employees, and even citizens. Its

research is more applied and is in line with the needs of market, industry, and government. The university should earn money from research contracts with private and public sectors.
Knowledge and technology transfer is also an integral part of such university. An entrepreneurial university deals with patenting, licensing, spin-off creation, establishing science and technology parks, and technology transfer contracts. It also contributes to the socio-economic development of its region, through congruency of its mission with development plans and its social responsibilities, absorbing local and foreign investments, absorbing regional and international human capital, contribution in development policy making, and in application of development policies.
Another aspect of an entrepreneurial university is to develop an entrepreneurial culture in different levels, i.e. individual, group, university, national levels. Otherwise, it will not be able to fulfill its missions and goals. In a nutshell, the Third Mission of universities includes the mentioned elements. But, this mission is not perfectly realized in the developing countries. The existing universities are more staying at the second generation, and are just in the transit era. Hopefully, you could find these concepts in the strategic and operational plans, especially in the recent years.

b) Resources:

As Guerrero and Urbano (2010) mentioned in their paper, the resources of an entrepreneurial university could help these university to gain a competitive advantage against their competitors. In order to become able to concentrate more deeply on these resources, the resources are categorized in two groups: soft resources, and hard resources.
Soft resources are those ones which form the soft aspects of the entrepreneurial university. These resources include entrepreneur and motivated human resources, educational and research resources, entrepreneurial background, entrepreneurial prestige, and dynamic and learning structure. These resources help the entrepreneurial university move toward its Third Mission.
Hard resources are those ones which form the hard aspects of the entrepreneurial university. These include government financial resources, private financial resources, creative and innovative financial resources, infrastructural and physical resources, and technological resources.
Thus, the resources of a typical entrepreneurial university are a combination of its soft and hard resources. There should be a balance between these two, but the role of soft resources was more frequently emphasized in the interview sessions.

c) Capabilities:

Along with soft and hard resources, capabilities of an entrepreneurial university could also play a paramount role in its success and achieving competitive advantage. In this study, the capabilities are categorized as follows: status and localization, background, networks and partners, and resource absorption and management.
Status and localization of an entrepreneurial university is a critical point in its entrepreneurialism, as it could highlight the position of a university against its competitors. In this study, we found six variables to define this element, which are as follows: university rank, status in the eyes of society, status in the eyes of experts, status in the region, accessibility to resources, and political and legal status.
In addition, university's background shows its behavior in past. In order to define this element in a better way, the following elements were elaborated through interviews and documents: historical background, honors of the university, past entrepreneurial strategies, training entrepreneurs in past, and training elites and prominent individuals in past. It should be mentioned that university's background is not separate from its current behavior, as its behavior in present will be considered as its historical behavior in the future.

Networks and partners are an integral part of a successful entrepreneurial university. A university without any networks and partners is something like a dream. Based on the interviews and documents, these networks and partners were categorized in three groups, i.e. public and private partners and networks, foreign partners and networks, and third sector partners (society). These networks should interact dynamically, to help the entrepreneurial university form the innovation cycle through the Triple Helix.

According to the interviews, university managers in different levels could make a substantial contribution in its success or failure. "Entrepreneur managers", or in a better words "managers with an entrepreneurial mindset", could pave the way for entrepreneurial activities and promote the entrepreneurial spirit of the university. Managerial capabilities of the managers, financial resources absorption and improvement, human resources absorption and improvement, physical resources absorption and improvement, creativity, innovation, and value creation, and alertness of academics are critical variables for this element.

In summary, capabilities of the entrepreneurial universities could be added to their resources, and help these universities fulfill their missions and goals.

d) Impeding factors:

In order to investigate the internal elements of entrepreneurial universities, the researchers identified two main impeding elements, which are: political behavior and lobbying, and resistance. It goes without saying that these elements were explored in a developing country context, and might have less importance in other contexts.

Political behavior and lobbying were classified in three classes, i.e. political behavior and lobbying of academics, political behavior and lobbying of policy makers, and political behavior and lobbying of industries. These three interact with each other and form the total political behavior and lobbying of the system. These behaviors could both facilitate or impede the success of the system.

Also, resistance is an important element in facing the entrepreneurial spirit of the UT. Resistance to change, cultural and conceptual resistance, environmental and legal resistance, objection against knowledge commercialization (considering knowledge as a sacred gift), resistance against unfair revenue shares, bureaucracy and lack of appropriate evaluation systems, lack of reliability of university to industry and vice versa, similar behaviors toward different regions, and dependency of university to government shape this element.

It is crystal clear that these are not the only impeding factors, but these were emphasized in the interview sessions. Moreover, these elements belong to the context of developing countries, and might not be generalized to other contexts.

Table 2: Entrepreneurial university conceptualization for the University of Tehran

Dimension	Element	Variable	Statements	Documents
Mission	Entrepreneur Generation	Entrepreneur students/alumni Entrepreneur professors/trainers Entrepreneur employees Entrepreneur citizens	I1-1, I1-4, I1-7, I1-9, I1-20, I1-21, I1-27, I1-30, I2-2, I2-3, I2-11, I2-24, I2-28, I3-2, I3-3, I3-19, I4-5, I4-7, I5-1, I5-3, I5-6, I5-7, I5-10, I5-14, I5-15, I6-16, I6-20, I6-21, I6-25, I7-9, I7-10, I7-11, I7-13, I7-20, I7-21, I8-2, I8-9, I8-10, I8-24, I9-4, I9-7, I9-14, I9-17, I9-20, I9-26, I10-1, I10-9	VS3, MS12, MS18, MS21, MS1404-4, MS1404-6, QG7, QG14, QG17, S7, S13, S15
	Applied research	Applied research and papers Research contracts with private sector Research contracts with public sector	I1-8, I1-19, I1-20, I1-30, I2-4, I2-13, I3-4, I3-13, I5-16, I5-23, I5-24, I6-4, I7-8, I9-1, I9-2, I9-6, I9-10, I10-10, I10-14	VS7, MS15, MS22, MS1404-5, QG15, S9, S13
	Knowledge and technology transfer	Patenting and licensing Spin-off creation Contracts with external firms Establishing science and technology parks, and incubators Contracts to transfer knowledge and technology	I1-8, I1-19, I1-20, I1-30, I2-4, I2-13, I2-14, I2-16, I2-18, I2-30, I3-1, I3-6, I3-17, I3-18, I3-21, I4-13, I4-16, I5-7, I5-9, I5-24, I6-12, I6-16, I6-17, I6-22, I6-23, I7-4, I7-8, I7-12, I7-19, I8-3, I8-4, I9-13, I10-16	VS6, VS7, VS11, MS8, MS13, MS1404-7, QG15, S9, S13
	Contribution in socio-economic development	Congruency of mission with development plans Congruency of mission with social responsibilities Absorption rate of local and foreign investments Absorption rate of regional and international human capital Contribution in development policy making Contribution in application of development policies	I1-8, I1-10, I1-11, I1-17, I1-30, I1-33, I2-1, I2-2, I2-7, I2-8, I2-10, I2-11, I2-27, I2-28, I2-33, I3-3, I3-4, I3-20, I3-22, I4-1, I4-2, I4-13, I5-9, I5-12, I5-17, I5-21, I5-22, I5-26, I5-27, I6-8, I7-6, I7-7, I8-4, I8-11, I9-2, I9-3, I9-4, I9-5, I9-9, I9-10, I9-13, I10-2, I10-3, I10-8, I10-11, I10-20	VS1, VS2, VS4, VS8, VS9, VS10, VS11, VS12, MS4, MS6, MS9, MS10, MS14, MS16, MS17, MS22, MS1404-8, QG10, QG13, QG19, S10, S13
	Developing an entrepreneurial culture	Improving individual level entrepreneurial culture Improving group level entrepreneurial culture Improving university level entrepreneurial culture	I1-3, I1-5, I1-31, I2-2, I2-3, I2-7, I2-12, I2-34, I3-3, I3-10, I3-11, I3-12, I4-18, I5-1, I5-4, I5-5, I5-20, I6-9, I6-14, I6-18, I6-19, I7-3, I9-11, I9-31	VS5, MS19, MS1404-7, QG6, QG10, QG14, S3, S4, S9, S13

Dimension	Element	Variable	Statements	Documents
		Improving national level entrepreneurial culture		
Resources	Hard	Government financial resources Private financial resources Creative and innovative financial resources Infrastructural and physical resources Technological resources	I1-2, I1-3, I1-12, I1-14, I1-19, I1-22, I2-17, I2-29, I2-31, I3-5, I4-7, I4-9, I4-10, I4-13, I5-8, I6-2, I6-5, I6-6, I6-20, I6-21, I6-26, I6-27, I7-1, I7-15, I7-17, I7-18, I7-24, I8-12, I9-21	QG1, QG5, QG20, S10, S11, S12
	Soft	Entrepreneur and motivated human resources Educational and research resources Entrepreneurial background Entrepreneurial prestige Dynamic and learning structure	I1-2, I1-4, I1-6, I1-7, I1-9, I1-14, I1-15, I1-21, I1-29, I2-3, I2-6, I2-25, I3-5, I4-4, I4-7, I4-8, I4-11, I4-13, I5-8, I5-10, I5-23, I5-25, I6-5, I6-17, I6-26, I7-16, I8-18, I8-19, I8-20, I9-12, I9-18, I9-19, I9-24	MS1, MS2, MS3, MS5, MS7, MS11, MS1404-1, QG4, QG5, QG9, QG10, QG12, QG15, S6, S7, S8, S13
Capabilities	Status and localization	University rank Status in the eyes of society Status in the eyes of experts Status in the region Accessibility to resources Political and legal status	I1-13, I1-23, I1-24, I1-26, I2-22, I4-11, I4-12, I4-14, I4-15, I5-18, I5-22, I6-7, I7-23, I9-16	MS1, MS2, MS11, MS1404-2, MS1404-3, QG2, S13, S16
	Background	Historical background Honors of the university Past entrepreneurial strategies Training entrepreneurs in past Training elites and prominent individuals in past	I1-23, I1-24, I1-25, I2-3, I2-22, I4-14, I4-15, I5-13, I5-18, I5-20, I5-23, I6-7, I8-13, I9-15	MS11, MS1404-2, MS1404-3, S2
	Networks and partners	Public and private partners and networks Foreign partners and networks Third sector partners (society)	I1-20, I1-23, I1-26, I1-28, I2-19, I2-22, I2-23, I2-31, I5-13, I6-7, I6-24, I7-14, I7-22	MS17, MS19, MS20, S5, S10, S16, S17
	Resource absorption and management	Managerial capabilities of the managers Financial resources absorption and improvement Human resources absorption and improvement Physical resources absorption and improvement Creativity, innovation, and value creation Alertness of academics	I1-14, I1-16, I1-18, I1-19, I1-20, I1-21, I1-22, I1-23, I1-32, I2-5, I2-9, I2-12, I2-14, I2-15, I2-17, I2-20, I2-21, I2-22, I2-23, I2-26, I2-29, I2-30, I2-31, I2-32, I2-35, I2-36, I2-37, I3-7, I3-8, I3-9, I3-14, I3-15, I3-16, I3-21, I4-3, I4-6, I4-7, I4-16, I4-17, I5-2, I5-6, I5-16, I5-17, I5-19, I5-20,	VS9, QG1, QG3, QG11, S1

Dimension	Element	Variable	Statements	Documents
			I5-21, I5-22, I5-23, I5-25, I6-1, I6-3, I6-7, I6-10, I6-15, I7-3, I7-21, I7-26, I8-7, I8-8, I8-14, I8-15, I8-23, I9-22, I9-28, I9-30, I10-22	
Impeding factors	Political behavior and lobbying	Political behavior and lobbying of academics Political behavior and lobbying of policy makers Political behavior and lobbying of industries	I1-31, I2-14, I4-19, I5-20, I8-17, I8-21, I8-23, I9-8, I9-28, I9-32, I9-33, I10-5, I10-7, I10-21, I10-31, I10-32, I10-35	QG8
	Resistance	Resistance to change Cultural and conceptual resistance Environmental and legal resistances Objection against knowledge commercialization (considering knowledge as a sacred gift) Resistance against unfair revenue shares Bureaucracy and lack of appropriate evaluation systems Lack of reliability of university to industry and vice versa Similar behaviors toward different regions Dependency of university to government	I1-19, I2-13, I3-12, I4-19, I6-29, I6-30, I6-31, I6-32, I8-6, I8-17, I8-21, I8-22, I9-8, I9-23, I9-25, I9-27, I9-29, I9-31, I10-5, I10-12, I10-13, I10-18, I10-19, I10-20, I10-23, I10-24, I10-25, I10-26, I10-28, I10-29, I10-30, I10-31, I10-32, I10-34, I10-35	

Legend: I: Interviewee; VS: Vision Statement; MS: Mission Statement; MS1404: Mission Statement for the year 1404 (year 2025); QG: Qualitative Goals; S: Strategy

Conclusion

As entrepreneurial universities are drawing the attention of many policy makers and researchers in developing countries, the need to study this generation of universities becomes more and more important. Moreover, one of the most important issues in these studies is considering the contextual and distinguishing elements of these countries. The authors believe that more indigenous entrepreneurial university conceptualizations could help the policy makers and researchers in achieving their goals. On the other hand, proposing universal and global conceptualizations could aggregate the indigenous conceptualizations and provide a globally accepted conceptualization for dealing with global governance concerns.

In the present study, the authors tried to propose a conceptualization for entrepreneurial universities in developing countries, concentrating on the UT. The main focus of this study is on the university in itself, and not the environmental elements. As it is mentioned earlier, the conceptualization consists of four dimensions, thirteen elements, and sixty five variables. Results show that there are two main impeding elements in the UT, which might not be generalized to the conceptualizations in other countries, unless the studies in those countries reveal the same results. This conceptualization could be useful for policy makers in making regional or national policies, or for researchers to investigate the underlying aspects of these universities in developing countries.

The proposed conceptualization deals with more detailed findings about entrepreneurial universities than Guerrero and Urbano's model (Guerrero and Urbano, 2010). The present conceptualization investigates the UT, as an entrepreneurial university, using the RBV, but the findings are presented in three levels: dimensions, elements, and variables. Also, while there are lots of models in the literature (i.e. Clark, 1998; Sporn, 1999, 2001; Etzkowitz, 2004; Kirby, 2005; O'Shea et al, 2005, 2007, 2008; Guerrero et al, 2006; Rothaermel et al, 2007; Guerrero and Urbano, 2010; Salamzadeh et al, 2011; Sooreh et al, 2011) the present study, presents a conceptualization based on a case study, i.e. UT.

The present conceptualization deals with internal and not external factors. While some scholars such as Sporn (1999) and Guerrero et al. (2006), deal with external factors. Therefore, future studies could concentrate on environmental factors and elaborate the phenomena of entrepreneurial university in its context. To many scholars, in such studies Institutional Theory (North, 1990) could be used as a useful theory to investigate the environmental factors. Guerrero and Urbano (2010) used this approach in their model of entrepreneurial universities in Spain. But, still there is a need to design and conduct such research.

Future Directions

The present study deals with internal elements of an entrepreneurial university in developing countries, studying the case of UT. The findings of the research reveal that future researchers could concentrate on the environmental factors to make contribution to this study. Investigating the external/environmental factors for UT, along with their interactions with the proposed internal factors of this study, shapes a sound model to investigate UT more comprehensively.

Moreover, future researchers might be interested in using this study in other universities in order to find new dimensions or findings. Also, the authors suggest the use of quantitative methods to examine the findings of this the present study. Using this conceptualization, policy makers and university managers would be able to set new plans and policies to highlight the entrepreneurial aspects of the UT and harness the impeding factors.

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