Offering the localized model of academic entrepreneurship constraints and obstacles in higher-level education system of Iran

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ABSTRACT

The current study is mainly aimed at identifying of academic entrepreneurship constraints and obstacles and offering a localized model in this field. This research is applied and developmental in terms of goal, and descriptive, survey and correlation in terms of data collection, hypothesis testing and conclusion. The population of this research contains two groups: first, 50 masters and elites from the selected universities in the field of academic entrepreneurship who have been selected by the method of census to identify the above-mentioned constraints and fitness of the final model; and second 1300 chancellors and vice-chancellors of higher-level education system in seven provinces out of which around 297 people have been selected through clustered random sampling to examine the identified constraints in their statistical populations. The instrument to collect data was questionnaire. Data analysis has been done by confirmatory exploratory factor analysis and the software such as LISERAL, SPSS and EXCELL. The results of data analysis show that the localized model of academic entrepreneurship constraints and obstacles in higher-level education system of Iran contains three main individual constraints, organizational constraints and environmental constraints. In addition the obtained coefficients dealing with the fitness of the model proves that this localized model fitness and validity.

Key words: entrepreneurship, academic entrepreneurship, academic entrepreneurship constraints, localized model of academic entrepreneurship constraints

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INTRODUCTION

University function and mission used to be education and research. Nowadays, regarding the global changes and change in the interplay between three main agents in national entrepreneurship systems (industry, government, university), a third function has been contributed to university which is academic entrepreneurship and partnership in cultural and social development of countries (Pourrashisi, Shojaei Farahabadi, 2012). Different factors such as increasing number of well-educated people in universities, on the other hand, decreasing government budget and dominant paradigm of new governmental management challenged universities in particular state universities. As a conclusion, it can be said that increasing pressure on the government and decreasing budget of science, research and technology ministry recently, increasing the number of well-educated people, increasing the rate of unemployment, the crisis of unemployment specially among young graduated people, change in expectations of university candidates, competition, the market needs, responsibility and responsiveness against society people, revolution in productivity quality, change in knowledge and necessity of knowledge management and trading knowledge, necessity of change in traditional education and moving toward new education and applied researches, necessity of using technologies and other things which cause change in function, duty and mission of university have made necessity of academic entrepreneurship and making entrepreneur university as one of the main resources of higher level education encounter with these changes and pressures possible (Sharifzade, 2009). Today, innovations obtained from conducted researches in academic environments have been considered as one of the main resources to

introduce and produce ideas and key technologies which has led to entrepreneurship measurers. This trend has led to a development which is called academic entrepreneurship. Academic entrepreneurship refers to measures and activities that universities and its relevant departments with industry do to trading their researches results. As academic entrepreneurship is a new scope of interest, it has not been at the center of attention so far (NasreEsfehani, Ghaffari, 2012). Most authorities of higher level education area view academic entrepreneurship as a prerequisite for university survival, because in the time of modern technologies development and knowledge-based industries role in world, regional and local economy, current crises can be tackled by reinforcing the interaction between university and agency (Hasanmoradi, 2006). In fact, academic entrepreneurship is a product of the two above-mentioned trends that is organizational entrepreneurship and new system of education and research system and has been appealed to people recently. From another point of view, universities as the richest scientific center in providing knowledge and technology has always had a key role in social, economical and cultural changes while it itself was affected by these changes (Moradi, 2006). The way reaching to wealth from science, in other words, the process of production to consumption of science is inserted in the following figure 1:
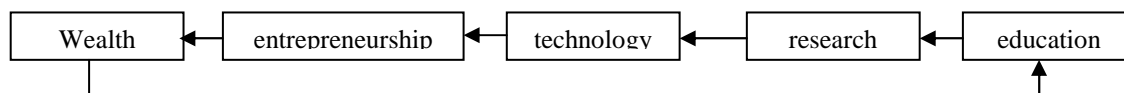
| Wealth | ← | entrepreneurship | ← | technology | ← | research | ← | education |

Figure1: trading knowledge (Sharifzade et al, 2009)

Table 1: the summary of researches done in academic entrepreneurship

Paper title	Recognized constraints on the way of academic entrepreneurship
1.Transferring trading knowledge from universities to the firms (Siggle et al, 2003)	Based on the findings of this research, cultural gap between industry and university, lack of flexibility, weak rewarding systems, and ineffective management of the technology transfer are among the most important constraints on the way of transferring technology from university to industry
2. designing a model to effectively transfer knowledge from university to industry(Siggle et al, 2003)	Lack of rewarding system for transferring technology, lack of flexible university systems for transferring technology, cultural differences between university and industry, lack of financial supporting from university researches
3. scientific freedom and trading universities inAustralia (kutinalahti, 2005)	Emphasis on scientific freedom in university
4. the role of technology transferring organizations in reinforcing industry-university circle	Lack of process thought Lack of research strategy
5. effective factors in successful transfer of knowledge	Knowledge distance from university to industry
6. suitable conditions for developing trading of researches results in university sector (Fakour, 2007)	- shortage of investment in fundamental researches - lack of interactive confidence between university, industry and investors - preventive policies for trading - shortage of synchronized culturing with trading in university sector
7. M.A thesis with the title of "making a trading model of transferring knowledge and requirements of academic entrepreneurship (based on the five big universities of the world) (Nadirkhanlou, 2008)	- bureaucracy and lack of flexible management of university - weak regulations to protect against mental assets nationally - lack of freedom for masters for participating in business activities - university dependence on governmental budget - different interests of scope of university and industry - lack of universities researches financial support
8. measuring trading potentiality of researches proposals by fuzzy logic(Bandarian, 2007:74)	Information shortage, insufficient abilities of human resources, economic, political and legal constraints, organizational and structural constraints, communicational constraints, not understanding market and consumers requirements, lack of ecologic standards
9. constraints of knowledge trading in academic entrepreneurship (Hasangholipour, 2011)	University not being competitive environment, negative attitude toward entity thought in university, regulations and rules ineffectiveness, education systems problems, lack of confidence between industry and university, financial problems, lack of skillful human resources, not being familiar with the real environment and lack of a strategic document
10. investigating preventive factors of entrepreneurship in agriculture sector and presenting a mechanism to improve it (Yaghubi, 2010)	- preparing and planning - economic motivators - legal factors
11. explaining academic entrepreneurship constraints and knowledge trading in Tehran university (Pourezat, 2010)	- bureaucracy and inflexibility of management system of university - weak communication and relationships between industry, university and investors - different cultures of industry and university - university dependence on governmental budget - university weakness in realizing business requirements - lack of necessity feeling to trading knowledge in university
12. the effect of environmental factors on trading ideas and the research results (Moghimi et al, 2010)	- financial limitations - ineffectiveness of official system - lack of trading strategies - lack of cooperation with research teams to identify technical features of research potentialities - lack of mass production - lack of assessment of research achievements and optimizing products

Regarding this description, university presents graduated people to society who uses knowledge along side applied researches and create work by innovation. Therefore, it can be said that these days, the most important infrastructure of knowledge to reach a exhaustive growth is making academic entrepreneurship in universities.

Because our society has different universities, it has high potentiality to use this university resource for e bigger growth in more aspects including entrepreneurship. There are always some constraints on the way unfortunately of produced thought assets in universities toward shaping and growing academic entrepreneurship and detecting and removing them is unavoidable.

In this field, a good proportion of works have been done nationally and internationally some of which have been inserted in the table 1.

Attempts have been made, in this research, to identify and explain constraints and challenges of academic entrepreneurship in higher level education by using experts' ideas, reviewing literature and different models, and finally a local model is presented.

MATERIALS AND METHODS

This research is applied and developmental in terms of the goal, descriptive, correlation and survey in terms of methodology, hypothesis testing and conclusion. Target population of the current research contains two groups. The first group consists of chancellors and vice-chancellors of universities of science, technology and research ministry, medical science ministry and Islamic Azad Universities with the number of 1300 people out of which people have been selected by stratified random sampling. The second group contains university masters and elites in the field of academic entrepreneurship with the number of 50 people. All of them have been selected by the use of census sampling method. To collect data, both library and field ways and four questionnaires have been selected and reliability of these questionnaires have been obtained by Chronbch Alpha coefficient which are 0.83 0.78 0.93 0.82. In addition, their validity has been measured by content validity. To analyze data, statistical procedures have been used such as Pearson correlation coefficient, exploratory and confirmatory factor analysis, and software such as LISERAL, SPSS, Excel.

RESULTS

To identify constraints and obstacles of entrepreneurship, after studying researches done by other researchers, questionnaire number 1 containing 34 items has been given to the experts, and after collecting data, by using exploratory and confirmatory factor analysis, these factors have been analyzed. Exploratory factor analysis in the forms of primary commonalities table, variance table, and factorload matrix shows 20 items out of 34 items have suitable factor load and three groups of environmental, individual and organizational factors remained in the questionnaire. Table number 2 shows final output.

Table 2: load factor matrix shows main and peripheral factors by using exploratory factor analysis

Peripheral constraints	Main constraints
1. Insufficient share of masters from trading knowledge 2. Different motivations of industry and university activists 3. difference in university and industry activists culture 4. difference in university and industry activists interests 5. lack of awareness of university researchers from business skills 6. negative attitude of university activists for engagement in business	Individual constraints
1. lack of knowledge of university for priorities of business 2. bureaucracy and inflexibility of management system of university 3. lack of necessity feeling to trading knowledge in university 4. low quality of knowledge produced in universities 5. lack of universities researches financial support 6. weak communication and relationships between industry, university and investors 7. lack of preparing for trading knowledge 8. lack of assessment of research achievements and optimizing products	Organizational constraints
1. weak regulations to protect against mental assets nationally 2. industry ignorance of technologies produced in universities 3. lack of interactive confidence between university, industry and investors 4. technical features of trade proposal 5. lack of mass production	Environmental regulations

Prioritizing these identified factors have been done based on exploratory factor analysis inserted in table 3.

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Table 3: special value, variance percent, and dense variance percent of triple factors

Component	Special value	Variance percent	Dense variance
1	5.688	28.440	28.440
2	5.187	25.937	54.377
3	3.774	18.868	73.245

According to this table, triple constraints of academic entrepreneurship covers around 73.245 In addition, the above-mentioned table shows the first factor with special amount of 5.688, the second factor with amount of 5.187 and the second factor with amount of 3.774 have the highest and lowest share in all variables variance. In other words, individual factors are at the first rank, organizational factors in the second rank and environmental factors in the third rank of academic entrepreneurship in terms of importance.

After identifying and sequencing academic entrepreneurship constraints, Pearson correlation coefficient has been used to study the relationship between variables. The results have been inserted in table 5.

**Table 5: the results of Pearson correlation**

Result	Sig level	Correlation rate	Hypothesis
Proved	0.000	-0.494	There is a significant relationship between academic entrepreneurship constraints and academic entrepreneurship
Proved	0.000	-0.488	There is a significant relationship between individual constraints and academic entrepreneurship
Proved	0.000	-0.364	There is a significant relationship between organizational constraints and academic entrepreneurship
Proved	0.000	-0.547	There is a significant relationship between environmental constraints and academic entrepreneurship

As mentioned in the above table, the results obtained from hypothesis testing have showed that there is a reverse significant relationship between triple constraints of academic entrepreneurship and academic entrepreneurship.

To measure fitness of the model, the questionnaire, LISERAL software and experts' ideas have been used.

The results obtained from testing fitness of the study structural model and confirmatory factor analysis test approves the significant relationship between triple constraints. The rate between individual and organizational constraints is 0.17, between individual and environmental is 0.18, and between organizational and environmental is 0.23 and fitness coefficient of the model shows that local model is suitable. The results of the Pearson correlation shows a significant relationship between individual and academic entrepreneurship constraints with the coefficient of 0.56 and a significant relationship between organizational and academic entrepreneurship constraints with the coefficient of 0.43 and the significant relationship between environmental and academic entrepreneurship constraints with the coefficient 0.39 in addition, the relationship between each of these peripheral variables and main variable have been represented in the model. Besides, academic entrepreneurship and academic entrepreneurship constraints have a negative and significant relationship with the coefficient of -0.49 To test fitness of the model, $\frac{x^2}{df}$ test, comparative fitness index (CFI) and goodness of fitness index (GFI) and mediated goodness of fitness index (AGFI), (NNFI) and (RMSEA) have been used. As seen in the above table, all fitness coefficient are located at the acceptance threshold. $\frac{x^2}{df}$ is 2.11 and RMSEA is lower than 0.05 All coefficients show the model fitness.

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Figure 2: local model of academic entrepreneurship constraints
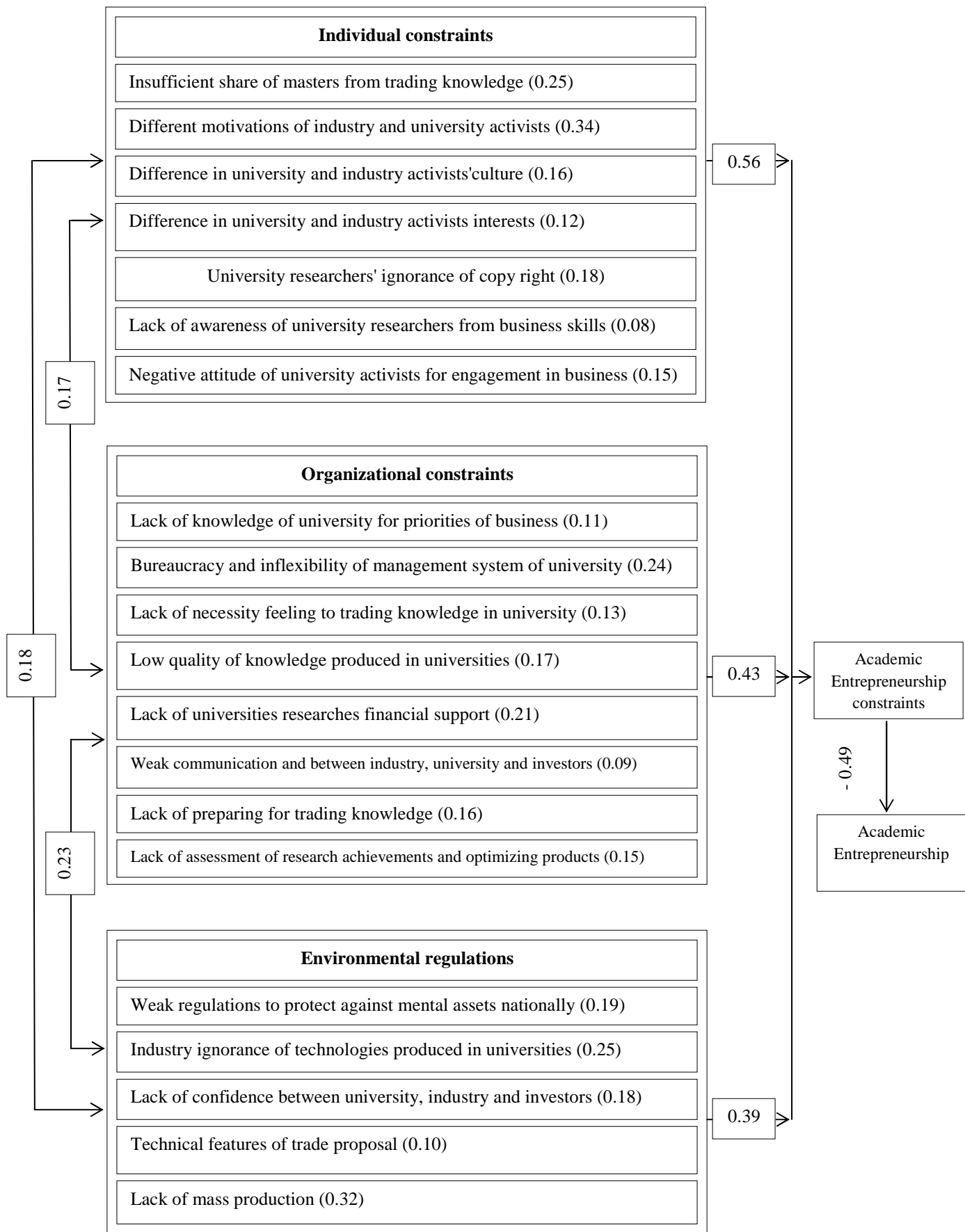
DISCUSSION

The results of the study showed that generally there three constraints including individual, organizational and environmental constraints on the way of academic entrepreneurship respectively ranking from one to three. In addition, output of these three tests shows that there is a reverse and negative relationship between academic entrepreneurship and academic entrepreneurship constraints and all of these results have been mentioned in the model offered. Regarding comparing the results of this research with other researches, the researches done by Hasangjolipour (2011), Yaghubi (2010), Pourezat (2010) and Siggle et al (2004) can be mentioned.

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