

The Relationship among Structural, Content and Contextual Factors of Academic Entrepreneurship

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Abstract: Change and evolution of conditions has led to change in mission of the universities. Therefore, initial mission of university was education, however it has transferred to research and following it has transferred to entrepreneurship. This research tried to compare content, contextual and structural components of university entrepreneurship. Thus, we designed some questions and hypotheses and the based on scientific resources create conceptual model of effective factors of university entrepreneurship. Following, we used a questionnaire included 94 questions related to entrepreneurial factors and 9 questions related to academic entrepreneurship.

Key words: Entrepreneurship • University Entrepreneurship • Structural Factor • Content Factor
• Contextual Factor

INTRODUCTION

Change and evolution of conditions has led to change in mission of the universities. Therefore, initial mission of university was education, however it has transferred to research and following it has transferred to entrepreneurship. Various factors like rise number of students in higher education, governmental management have challenged universities particular state universities. Generally, it can be said that, an increasingly pressure on government, science ministry and huge number of students has led to crisis of unemployment and it is originated from higher competition of universities, variable need of the market and so on. Necessity to entrepreneurial universities as key and strategically tools in higher education when in facing with pressures and changes is obviously clear [1].

Academic entrepreneurship means partnership of universities at development of economy. Furthermore, it can be said comprehensively that do all of operational activities and academic components included students, teachers, administrators and staff have key role in innovation and being competitive in local economy [2].

Experiences of developed countries and South-East Asian countries indicates that in this situation, the best solution is the creation of entrepreneur universities and

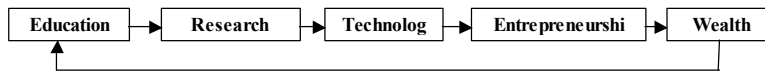
knowledgeable universities for development of innovation and creativity in university system and commercialization knowledge and use results of academic research and expand the frontiers of knowledge in order to achieve comprehensive development. [3]. Sometimes, academic entrepreneurship is introduced direct relation of academics at commercialization of their research [4] Academic entrepreneur are the most important factor in transferring technology from universities to industry and entered with commercialized knowledge and create entrepreneurial business [5].

Nowadays, most leaders of higher education account entrepreneurship as survival condition and development of higher education and universities. Because, in era of development and advanced technology and knowledgeable industry in global, regional and even local can face with widespread and comprehensive crisis only by strengthening interaction and link university and business [3]. In fact, academic entrepreneurship is originated from organizational entrepreneurship and new higher education and it has paid attention for several years. On the other hand, universities as the richest of scientific - research centers always have key and vital role in cultural, social and economic development. Education of entrepreneurship and create entrepreneurial center are

initial action for development of cultural entrepreneurship and following commercialize knowledge, invention based on advanced technology [6].

Purpose from commercialization knowledge at university is transferring potential value of knowledge and innovation to tangible and benefit. In fact,

commercialization means transferring creative ideas and thinks of board scientific members and students at different field of sciences to processes, product and services. The process of transferring science to wealth or process of production to use of science is shown in following figure:



UNESCO describes global vision of higher education in 21st as follow: entrepreneurial skills develop in higher education in order to capability in transferring to Entrepreneurs [6].

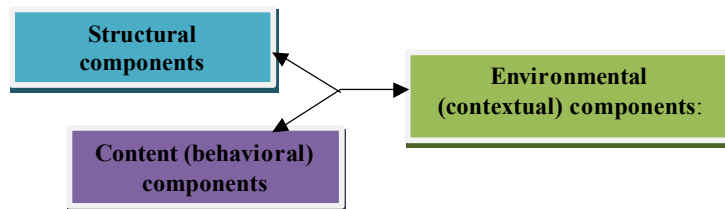
According to description, universities teach students who use knowledge and applicable research and also by innovation create job and value. Thus, it can be said that these days the most important infrastructure of knowledge for achieving comprehensive development is Entrepreneurship University. Academic entrepreneurship has a wide scope and included various level of environment, structure and how using of technology.

In this study, structural factors (including type of structure, scientific structure, education affaire, research affaire, finance and administration and department), Content (including vision, mission, goals and strategies, attitude leaders of university, management support, organizational culture, characteristics of members, patterns of technology) and contextual (including, economic, financial, political, administrative, socio-cultural, legal, regulatory, environmental and location of universities' centers) effectively impact on University entrepreneurship. This research is seeking to identify necessary infrastructure for developing academic entrepreneurship and how this knowledge can be applicable throughout entrepreneurial activities and critical question of this research is trying investigation of

relationship among structural, content and contextual in Payam Noor University.

Methodology: This research was investigating relationship among structural, content and contextual with university entrepreneurship in Payam Noor University. Payam Noor University was investigated as sample of research. The research was descriptive, applied and survey research. Furthermore, it was written based on scientific resources a conceptual model of effective factors on university entrepreneurship. In order to measuring principal concept of the research, a survey was used consists of 94 questions related to entrepreneurial factors and 9 questions related to university entrepreneurship. Reliability of this research was calculated based on Cronbach's alpha (0/96). Validity was confirmed by content test. Following, relationships were investigated by using multiple variable regression, Normality test and VIF index. Eventually, all of hypotheses were confirmed exception of fourth hypothesis.

By investigating and studying literature and scientific resources and investigating available patterns in organizational entrepreneurship and opinion of academics for analyzing variables of university the best theoretical pattern of Dr Hassan Mirzae Ahranjani was chosen. Based on the pattern, all of concepts, phenomena and actions are analyzed based on following Ramification model:



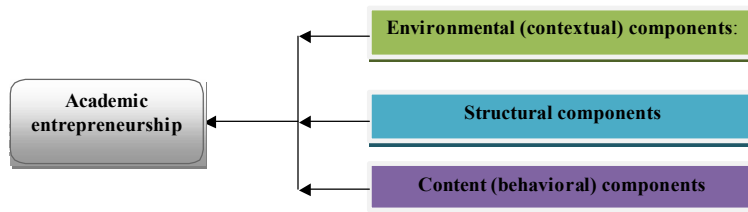
Structural Components: It is included all elements like type of structure, scientific structure, finance, administration and all of specific organizations.

Content (Behavioral) Components: It is included some elements such as vision, mission of university, goals and strategies, characteristics' leaders of universities, characteristics of members.

Environmental (Contextual) Components: economic, financial, political, administrative, socio-cultural, legal, regulatory, environmental and location of the centers.

One of reasons of using 3 branches structural, content and environmental factors is none of elements cannot be beyond of these elements. In fact, there is a significant relationship among components and connection of the components indicates that these components are inseparable.

Based on ramification model can offer following conceptual model:



The aim of this research is relation between factors and components of university entrepreneurship.

Hypotheses:

- H₁: Significant relationship exists between structural components (scientific structure, education administration, research administration, finance) and university entrepreneurship.
- H₂: Significant relationship exists between content elements (including vision, mission, goals and strategies, characteristics and technology patterns thinking of leadership, management support, organizational culture, individual characteristics of users, technology pattern) and university entrepreneurship.
- H₃: Significant relationship contextual factor (economic, financial, political-administrative, socio-cultural, legal, regulatory, environmental and location of university) and Entrepreneurship University.
- H₄: Significant relationship exists among structural, content and contextual factors.

Reliability and Validity: The word validity is primarily a measurement term, having to do with the relevance of a measuring instrument for a particular purpose. In other word validity indicates the degree to which an instrument measures what it is supposed to measure. For assessing validity, the questionnaire is vetted by experienced researchers and stated that our measuring instrument is valid and will result in correct measurement. A reliability measure essentially shows us if researcher does a test again and again, the test would provide the same score or the same respondent. I use Cronbach’s alpha that ranges between 0 and 1. The greater the value of alpha, the more the scale is coherent and thus reliable (alpha is actually an approximation to the reliability coefficient). Some authors have proposed a critical value for alpha of 0.70, above which the researcher can be confident that the scale is reliable (Encyclopedia of Survey Research Methods, Lavrakas).

Findings: Multiple regressions were used to test the hypotheses. Independent variables are structural factors, content factors and contextual factors. The dependent variable is entrepreneurship.

Table 1: Reliability Statistics

Components	Number of Questions	Coefficient alpha
Structural	24	0.87
Content	55	0.97
Contextual	15	0.77
Total	94	96/0

Table 2: Model summary

Model	R	R Square	Adjusted R Square	Std. Error
1	.729	.532	.465	4.41

Predictors: (Constant), Structural, Contextual and Content factors

Dependent variable: Academic Entrepreneurship

Table 3: Coefficients of the Regression Model

Model	Unstandardized Coefficients		Standardized Coefficients		Sig.	Tolerance	VIF
	B	Std. Error	Beta	t			
Constant	2.38	5.56		0.43	0.67		
Structural factors	0.24	0.09	0.57	2.59	0.02	0.46	2.19
Content factors	-0.02	0.03	-0.12	-0.48	0.63	0.39	2.59
Contextual factors	0.24	0.11	0.4	2.24	0.04	0.71	1.4

Dependent variable: Academic Entrepreneurship

Table 4: Multiple regression for the components of each independent variable

Components	Independent variable	Results for H ₀	Sig.	t
Type of structure	Structural factors	approved	.002	3.398
Scientific Structure		rejected	.754	-.318
Centers		rejected	.188	1.358
Administrative affair		rejected	.190	1.354
Research affair		rejected	.740	.336
Finance Affair		rejected	.252	1.176
Administrative affair		rejected	.381	-.895
تشكيلات خاص		rejected	.806	.249
Vision and Mission	Content factors	rejected	.708	.380
Goals and Strategies		rejected	.124	-1.605
Management support		approved	.000	6.295
Organizational Culture		rejected	.735	.343
Individual Characteristics		rejected	.117	-1.637
Patterns		approved	.003	3.357
Attitudes of Leadership		rejected	.617	-.507
Technology		rejected	.770	.296
Economical and Financial	Contextual factors	rejected	.825	.223
Social-Cultural		rejected	.970	.038
Political- Administrative		approved	.040	-2.194
Law- Regularity		rejected	.297	-1.072
Innovation		approved	.008	2.951
Local Position		approved	.000	4.697

Dependent variable: Academic Entrepreneurship

The above results show that the multiple correlation coefficients between dependent and independent variables is 0.73 that indicates a high correlation. Furthermore the determination coefficient is 0.53 that shows about fifty percent of the variation in entrepreneurship variable can be explained by the explanatory variables. The standard error of the estimate is 4.41 that shows the difference of sample statistic and population parameter is 4.41 by average.

Therefore the regression equation is as follows:

$$Y = 2.38 + 0.24 (\text{Structural factors}) + 0.02 (\text{Content factors}) + 0.24 (\text{Contextual factors})$$

In the above table, standardized beta coefficients are shown to evaluate the contribution of each variable in the model. Standardized coefficients refer to how many

standard deviations a dependent variable will change; per standard deviation increase in the predictor variable. This indicates that the large numbers have a severe impact on the dependent variable. As a result, structural factors with the beta coefficient of 0.57 have the greatest effect on the entrepreneurship. After structural factor, Contextual factor has the most impact on the entrepreneurship with the beta of 0.40. Furthermore content factor has the least and negative effect on the entrepreneurship with the beta of -0.12.

In addition, according to the significance column, structural and contextual factors have significant coefficients with the t=2.59 and t=2.24 respectively. But content factors have a non-significant coefficient with the t=-0.48.

The tolerance is the percentage of the variance in a given predictor that cannot be explained by the other predictors. A variance inflation factor (VIF) greater than

3 is usually considered problematic, but the greatest VIF in the table is 2.59. Therefore there is no problem with collinearity.

To investigate the relationship between the Academic Entrepreneurship and components of the three independent variables separately, three multiple regression were done and the results are shown in the following table.

Multiple regressions were used to test the hypotheses. Independent variables are structural factors, conceptual factors and underlying factors. The results show that the multiple correlation coefficients between dependent and independent variables are 0.73 that indicates a high correlation. Furthermore the determination coefficient is 0.53 that shows about fifty percent of the variation in entrepreneurship variable can be explained by the explanatory variables. The standard error of the estimate is 4.41 that show the difference of sample statistic and population parameter is 4.41 by average.

The dependent variable is entrepreneurship. In the above table standardized beta coefficients are shown to evaluate the contribution of each variable in the model. Standardized coefficients refer to how many standard deviations a dependent variable will change, per standard deviation increase in the predictor variable. This indicates that the large numbers have a severe impact on the dependent variable. As a result, structural factor with the beta coefficient of 0.57 has a greater effect on the entrepreneurship. After structural factor, underlying factor has the most impact on the entrepreneurship with the beta of 0.40. Furthermore conceptual factor has the least and negative effect on the entrepreneurship with the beta of -0.12.

CONCLUSION

This research was investigating relationship among structural, content and contextual with academic entrepreneurship in Payam Noor University. Payam Noor University was investigated as sample of research. The research was descriptive, applied and survey research. Furthermore, it was written based on scientific resources a conceptual model of effective factors on academic entrepreneurship. In order to measuring principal concept of the research, a survey was used consists of 94 questions related to entrepreneurial factors and 9 questions related to academic entrepreneurship. Reliability of this research was calculated based on Cronbach's alpha (0/96). Validity was confirmed by content test. Following, relationships were investigated by using multiple variable regression, Normality test and VIF index. Eventually, all of hypotheses were confirmed exception of fourth hypothesis.

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